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Exploring the Usage of Mobile Devices for Learning Among Degree College Students in Aizawl District

Lalrinzuali Fanai[1], Dr. Hmingthansiami[2]

[1]Research Scholar, IASE, Aizawl, Mizoram, India
[2]Associate Professor, IASE, Aizawl, Mizoram, India

Abstract
The present study aims to explore the usage of mobile devices for learning among degree college students in Aizawl District using a mixed research methodology. By employing self-administered questionnaire, the study seeks to achieve three primary objectives: (1) Identifying the types of mobile devices used by degree college students, (2) To assess the level of usage of mobile learning devices among degree college students and (3) To compare the mobile learning usage of degree college students of Mizoram in relation to their gender, family income and father's education. The data for the present study was analysed using percentage and t-test and ANOVA to find out any significant differences. The findings are expected to throw light on the current mobile learning landscape in Aizawl District of Mizoram.

Keywords: Mobile Learning, Degree College Students, Aizawl District, Mizoram.

1. INTRODUCTION

Mobile learning (m-learning) devices have totally transformed the way students gain and engage with education in the current technologically advanced and rapidly changing world These devices, among others being smartphones, tablets, e-readers, and laptops enable one to learn anywhere and anytime. They have become very important tools for designing flexible and dynamic learning environments, particularly for degree college students who tend to use technology to organize their academic, personal, and social lives.

The rapid growth of internet access and cheap mobile devices in India has given degree college students more ways to improve their education (Traxler, 2018). In Mizoram, especially in Aizawl City, where higher education is growing, mobile learning has benefits as well as drawbacks. Students are using their phones and tablets more and more for schoolwork but things like gender, parental education and work experience may affect how they use them. This study was performed to assess the mobile learning practices of degree college students in Aizawl District focusing on the types of devices they use, the degree of their mobile learning usage and disparities in usage across chosen demographic characteristics.

This study hopes to add to the growing body of knowledge about m-learning by highlighting these aspects and giving suggestions to schools, teachers, and policymakers on how to better integrate mobile learning devices into academic settings. Learning about the specific conditions in Aizawl District will also help you come up with plans that work in places with similar socioeconomic and technological conditions.

2. STUDY AREA

The study was carried out in Aizawl District, the capital and center of education of Mizoram. Aizawl, the state's most urbanized region, is situated at an elevation of approximately 1,132 meters and currently has an urban literacy rate of over 98% (Census of India, 2011). Mizoram University and over 20 government and private universities with undergraduate programs in the arts, sciences, commerce and professional studies are located in the district. Aizawl is an ideal location to study mobile learning practices because it has comparatively better internet and mobile connectivity than rural areas. The study population consisted of 18–23-year-old undergraduate students selected to represent a variety of genders, academic backgrounds and socioeconomic statuses.

3. LITERATURE REVIEW

According to Foti and Mendez (2014), the majority of graduate students were frequent and comfortable users of mobile devices for academic purposes. In line with the current objective of the study of analyzing the formal and informal ways in which Aizawl degree college students use mobile learning, this illustrates how mobile learning improves learning outside of the classroom. Similarly, Kopackova (2014) reported high ownership of notebooks and smartphones among university students and a strong readiness to use mobile applications for learning. In Aizawl, where smartphones are anticipated to predominate, this aligns with the first objective of determining the kinds of devices used by students. Ghosh and Chakraborty (2018), in their study with first-year medical undergraduates, found that most students had access to smartphones and acknowledged mobile devices as effective learning tools. Their findings are very similar to those of the Aizawl context, where undergraduates might exhibit comparable patterns. Finally, Traxler (2018) highlighted the role of mobile learning in democratizing education in developing countries by lowering socioeconomic barriers. This relates especially to Aizawl, where students from various socioeconomic and parental backgrounds might use mobile learning differently. This directly relates to the third objective, which compares usage by gender, parental education and parental occupation.

4. OBJECTIVES

The objectives of the study are:

1. To identify the types of mobile learning devices used by degree college students of Aizawl District.
2. To assess the level of usage of mobile devices for learning by degree college students of Aizawl District.
3. To compare the mobile learning usage of degree college students of Aizawl District in relation to gender, family income and father's education.

5. METHODOLOGY

The present study employed a descriptive survey design to investigate the mobile learning practices of degree college students in Aizawl District. The population consisted of all degree college students admitted in government and private institutions in Aizawl District affiliated with Mizoram University. A sample of 343 students was selected by stratified random sampling in order to ensure adequate representation across gender and academic disciplines (Arts, Science, and Commerce).

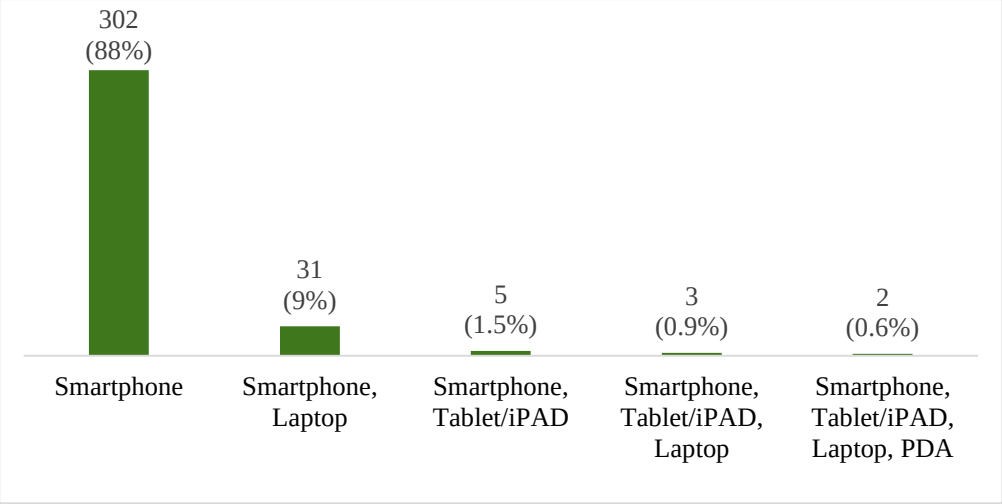
Data were collected using the Mobile device use for learning scale constructed and standardized by the researcher. The scale consisted of 21 items covering four dimensions of mobile learning- Information access, communication and collaboration, learning management and supplementary educational use.

The data were analyzed using both descriptive and inferential statistics- Frequencies and percentages were used to identify the types of devices students used. t-test was used to compare usage across gender and One-way ANOVA was used to examine differences in mobile learning usage based on family income and fathers education.

6. FINDINGS AND DISCUSSION

Objective No.1: To identify the types of mobile learning devices used by degree college students of Aizawl District.

Figure: 1: Types of mobile learning devices used by degree college students of Aizawl District.



The data shown in Figure 1 shows the ownership pattern of different devices. Out of a total of 343 students, the vast majority of 302 students (88%) reported owning smartphones as their primary device for learning. This finding highlights the central role of smartphones in students' academic lives, owing to their affordability, portability and easy access to internet services.

A smaller proportion, 31 students (9%) reported using both smartphones and laptops indicating that while laptops are beneficial for extended academic tasks such as assignments or research writing they are not as widely accessible as smartphones. Only a few students reported owning multiple devices such as smartphones, tablets/iPads and laptops. Specifically, 5 students (1.5%) used smartphones with tablets/iPads, 3 students (0.9%) combined smartphones, tablets/iPads and laptops, and only 2 students (0.6%) reported having all four types of devices including PDAs.

The findings show that in Aizawl District degree colleges, smartphones are the most available and used mobile learning device while laptop and tablet use is minimal. Due to affordability and user friendliness, smartphones are dominating in mobile learning. Low prevalence of laptop and tablet ownership may also be due to financial limitations and Mizoram's semi-urban, hill terrain in which smartphones are thought to be more advantageous in educational contexts.

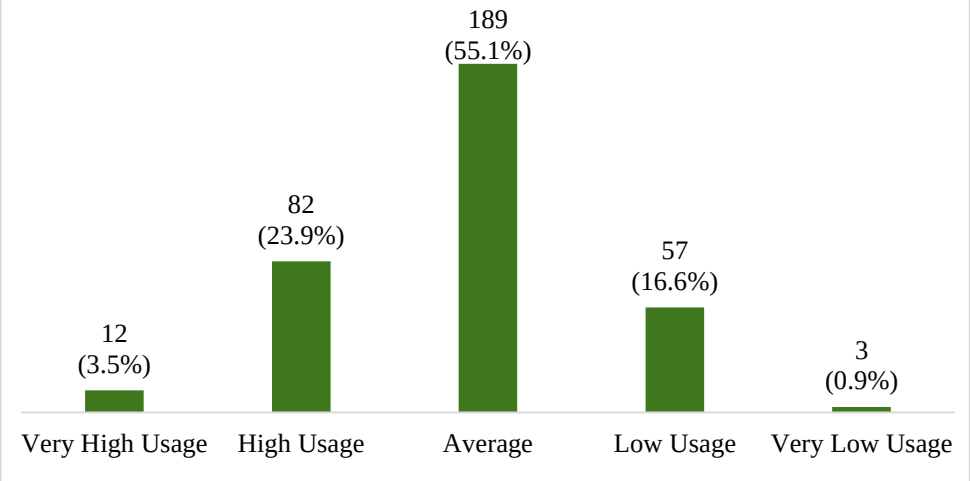
Objective No.2: To assess the level of usage of mobile devices for learning by degree college students of Aizawl District.

Table 1 Level of usage of mobile devices for learning by degree college students of Aizawl District

	Very High Usage	High Usage	Average	Low Usage	Very Low Usage
Overall	12	82	189	57	3

Level of Usage	(3.5%)	(23.9%)	(55.1%)	(16.6%)	(0.9%)

Fig. 2 Level of usage of mobile devices for learning by degree college students of Aizawl District



Result from the above table demonstrates a distinct trend in the way students use mobile devices for learning. The vast majority of students about 189 (55.1%) of the total fall into the "Average" usage category. This indicates that although mobile devices are being used for educational purposes, most students may not find them to be a primary or highly integrated tool. The "High Usage" category, which comprises 82 (23.9%) of the students is the next largest segment after the average usage group. This indicates a large proportion of students consistently utilize their mobile devices for learning.

Over 94 (27.4%) of the respondents depend considerably on their mobile devices for learning as indicated by the aggregate percentage of those with "High" and "Very High" usage (23.9% + 3.5%), reaching 27.4%. Only 3 students (0.9%) indicated "Very Low Usage," whereas 57 (16.6%) reported "Low Usage," placing it at the lower end of the spectrum. Despite their occasional use, mobile devices are often employed for learning as evidenced by the minimal percentage in the "Very Low Usage" category.

The results show that most students use mobile devices for learning at an average level, and fewer say they use them a lot or very much. This shows that students use mobile devices for educational purposes, but not to their full potential. Some students not using the facility as much could mean that they are lacking the skills or resources they need.

Objective No. 3: To compare the mobile learning usage of degree college students of Aizawl District in relation to gender, family income and father's education.

1. **A comparison of the use of mobile devices for learning between male and female degree college students of Aizawl District.**

In order to make a comparison between the use of mobile devices for learning of male and female degree college students of Aizawl District, the mean and standard deviation of the two groups were determined individually. To determine whether or not there is a significant difference between male and female degree college students, a t-test was performed and the results are presented in the following table. The table includes the mean scores, standard deviations and t-values calculated for each group.

Hypothesis no. 1. There is no significant difference in the use of mobile devices for learning between male and female degree college students of Aizawl District.

The following table 2 shows a comparison of the use of mobile devices for learning between male and

female degree college students of Aizawl District.

Table 2 Comparison of the use of mobile devices for learning between male and female degree college students of Aizawl District

Group	N	Mean	SD	SED	t-value	Sig. Level
Male	162	76.5	9.66	0.93	1.078	Not Significant
Female	181	73.88	10.29			

The above table shows that 162 male degree college students in the Aizawl District had a mean score of 75.5, which was a little higher than the mean score of 181 female students, which was 73.88 when it comes to using mobile devices for learning. This indicates that, on average, male students reported using mobile devices for learning slightly more than their female counterparts. When compared to the standard deviations, the mean score difference between the two groups is very small, at just 1.62. The standard error of difference (SED = 2.43) further shows that the difference is not statistically significant. Therefore, although male students appear to have scored slightly higher, both male and female students show almost the same level of engagement in the use of mobile devices for learning. This implies that gender does not have a meaningful influence on mobile device usage for learning among degree college students in Aizawl District. Therefore, the null hypothesis "There is no significant difference in the use of mobile devices for learning between male and female degree college students of Aizawl District" cannot be rejected.

The result shows that male students used mobile devices for learning slightly more than female students. However, the difference was small and statistically not significant. The computed t-value (1.08) did not surpass the critical table value, indicating that gender does not significantly influence mobile device usage for learning among degree college students in Aizawl District. This means that both male and female use mobile devices to learn at about the same level.

2. A comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to family income

In order to make a comparison between the use of mobile devices for learning among degree college students of Aizawl District in relation to family income, ANOVA was performed and the results are presented in the following table.

Hypothesis no.2. There is no significant difference in the use of mobile devices for learning among degree college students of Aizawl District in relation to family income.

The following table 3 shows a comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to family income.

Table 3 Comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to family income

Sources of variance	Degrees of freedom	Sum of the squares	Mean Square	F Ratio
Between Set	(S - 1) = 4 - 1 = 3	385.417	128.473	**1.270**
Within set	N – S = 343 – 4 = 339	34293.92	101.162	

The table 3 reveals the comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to their family income. The results indicate that the between-group variance

(Sum of Squares = 385.417, Mean Square = 128.473) is significantly smaller than the within-group variance (Sum of Squares = 34,293.92, Mean Square = 101.162) and the computed F-ratio is 1.270 which is comparatively low and has no statistical significance at acceptable levels. This indicates that differences in family income do not lead to a significant variation in the use of mobile devices for learning among students. Hence, the null hypothesis that there is no significant difference in the use of mobile devices for learning with respect to family income cannot be rejected. It can therefore be concluded that family income does not play a decisive role in determining the extent to which degree college students of Aizawl District use mobile devices for learning.

The result implies that people from all income levels are now able to use mobile devices for learning purposes. The easy access to cheap smartphones and data services may have made family income less important when it comes to mobile learning. Students from both lower and higher income backgrounds exhibit analogous patterns of mobile device utilization for academic purposes.

3. A comparison of the use of mobile devices for learning among degree college students of Mizoram in relation to father's education

In order to make a comparison between the use of mobile devices for learning among degree college students of Aizawl District in relation to father's education, ANOVA was performed and the results are presented in the following table.

Hypothesis no. 3. There is no significant difference in the use of mobile devices for learning among degree college students of Aizawl District in relation to father's education.

The following table 4 shows a comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to father's education.

Table 4 Comparison of the use of mobile devices for learning among degree college students of Aizawl District in relation to father's education

Sources of variance	Degrees of freedom	Sum of the squares	Mean Square	F Ratio
Between Set	(s-1) = 5-1 =4	569.90	96.354	**0.95**
Within set	N-s=343-5=338	34109.44	101.461	

The results in Table 4 show the comparison of mobile device usage for learning among degree college students of Aizawl District in relation to father's education. The calculated F-ratio is 0.95 is lower than the critical F-value at the 0.05 level of significance. This shows that there is no significant difference in the use of mobile devices for learning based on the father's education level. Thus, the null hypothesis that "There is no significant difference in the use of mobile devices for learning among degree college students of Aizawl District in relation to father's education" cannot be rejected.

The findings show that a father's education level does not have a significant impact on degree college students in Aizawl District using mobile devices for learning. This indicates that the accessibility and utilization of mobile devices for learning purposes is prevalent among various socio-educational demographics, highlighting the increasing significance of technology in education regardless of father's level of education.

7. SUGGESTIONS

1. Teach students how to use their phones and tablets for learning in a way that works.
2. Make and share educational digital learning materials that people can use on their mobile devices.
3. Hold programs to raise awareness about how to use mobile devices for work and school.
4. Make sure all students have access to a reliable internet connection so they can learn without interruptions.
5. Encourage digital literacy programs to help students use technology safely and with confidence.

CONCLUSION

The objective of the study was to investigate the utilization of mobile learning devices among undergraduate students in Aizawl District emphasizing device preferences, level of usage of mobile devices for learning and the impact of demographic variables including gender, family income and father's education.

The results showed that smartphones are the most popular mobile learning device, with all of the students who responded used them for educational purposes. Other devices, such as laptops and tablets were used minimally. In terms of usage levels, the majority of students demonstrated average usage levels of mobile learning engagement.

Further investigation revealed that demographic factors such as gender, family income, and father's education did not significantly affect mobile learning utilization. This shows that students from all over the district are using mobile learning in the same way.

The study emphasizes the pivotal role of smartphones in enabling mobile learning for undergraduate students in Aizawl District and underscores the equitable nature of mobile learning engagement across demographic divides. These results form a basis for creating inclusive mobile-based educational strategies customized to the requirements of students in the area.

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