



## **Relationship between Secondary School Students' Attitude towards Mobile Learning and Academic Performance**

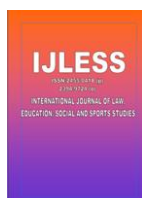
**Dr. Vijaya Shivaputrappa Agadi**

Assistant Professor, Vivekananda College of Education, Arsikere, Hassan District

Email ID: [vijayagadivce@gmail.com](mailto:vijayagadivce@gmail.com)

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### **ABSTRACT**

This study looks into the relationship between secondary school students' views towards mobile learning and their academic achievement. The study's goal is to analyze students' attitudes toward mobile learning, evaluate their academic achievement and discover the relationship between these two variables. It also investigates disparities in academic achievement based on gender and school administration style. The sample includes 120 secondary school pupils from Arasikere's urban schools, chosen using stratified random sampling. A self-developed Mobile Learning Attitude Scale is used to collect data, as well as pupils' scores from recent school exams. To investigate the relationships and differences, the analysis uses descriptive statistics such as mean and standard deviation, as well as inferential statistics such as Pearson's correlation and independent 't' tests. The findings aim to provide insights into how students' views toward mobile learning affect their academic success, as well as how other demographic characteristics influence this relationship.

Keywords: Attitude, Mobile Learning, Academic Performance, Students, Secondary School.

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### **INTRODUCTION**

Mobile learning or m-learning, is the use of mobile devices such as smartphones and tablets to improve educational experiences. As mobile technology becomes more accessible, children are exposed to new learning opportunities that can supplement established teaching techniques. This study looks at the relationship between secondary school students' views about mobile learning and their academic achievement. Technological improvements have drastically transformed education, with mobile learning emerging as a critical tool for improving the learning experience. M-learning entails using mobile devices to access educational content, collaborate with classmates and participate in interactive learning. Its adaptability, accessibility and possibility for personalized learning make it an excellent complement to traditional teaching methods.

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Mobile devices are increasingly an integral part of students' daily life, influencing how they gather and process information. Mobile learning allows secondary school students to connect with multimedia, access internet resources and participate in virtual learning settings, expanding learning outside the classroom. However, the success of mobile learning is contingent on students' views about its use. A positive attitude toward mobile learning can boost engagement, motivation and academic performance, whereas a negative attitude can inhibit the use of mobile learning tools and reduce their efficacy. The purpose of this study is to investigate the relationship between students' attitudes toward mobile learning and their academic performance, thereby providing insights into how this research paper can improve educational outcomes. Furthermore, the study wants to know whether gender, style of school management and digital literacy influence students' attitudes toward mobile learning. As schools increasingly incorporate technology-based learning approaches, recognizing these aspects is critical for developing effective mobile learning interventions that meet the requirements of various learners.

## **REVIEW OF RELATED LITERATURE**

Mobile learning has become a transformational force in education, leveraging technology to improve learning experiences and academic outcomes. Timotheou et al. (2023) studied the impact of digital technologies on education and the elements that influence schools' ability to utilize these tools. Their review discovered that digital technologies have an impact not just on student performance, but also on teaching methods and school management. Successful digital transformation in schools necessitates undertaking related issues such as accessible resources and teacher training. Oliveira, Pedro and Santos (2021) investigated how students in higher education use mobile apps during class. The survey discovered that students regularly used social media apps such as Facebook and Instagram during class, resulting in distractions. Students also underestimated how much time they spent on these apps, emphasizing the significance of limiting mobile usage in class. Ababa et al. (2021) investigated the efficacy of educational applications in boosting high school students' academic performance. The findings revealed that educational applications considerably helped students with their coursework, while the apps may be improved further by incorporating more features for greater learning.

Ravi and Singh (2020) investigated how mobile applications are enhancing learning by making it more participatory, adaptable and accessible. These apps allow students to learn at their own pace, promoting inclusive education and delivering quality learning opportunities regardless of location. Klimova (2019) looked on the effects of mobile learning on university students, specifically foreign language acquisition. The researchers discovered that using individualized smartphone apps boosted language skills. It emphasized the importance of modifying mobile learning to kids' needs and having teachers support it. Gilavand, Asl and Kameli (2019) investigated how mobile apps affected students' academic performance at a medical university. They discovered that students who used the program outperformed those who did not, indicating the importance of mobile educational apps in improving learning outcomes regardless of gender.

Demir and Akpınar (2018) investigated how mobile learning apps influenced students' academic performance, attitudes toward learning and animation abilities. The study found that mobile learning increased academic performance and inspired students, implying that mobile apps may be a useful tool for increasing student engagement and achievement. Nedungadi, Mulki and Raman (2018) focused on mobile learning in rural India, particularly in reducing teacher and student absenteeism through accessible technologies like WhatsApp. Their nine-month analysis showed that this approach led to increased attendance and improved teaching effectiveness, addressing infrastructure challenges and enhancing student performance in rural areas. Nikou and Economides (2018) used Self-Determination Theory to design Mobile-Based Micro Learning and Assessment (MBmLA) activities for

high school science students. Their five-week experiment with 108 students found that MBmLA enhanced students' psychological needs, resulting in better exam performance than regular homework.

Reeves, Gunter and Lacey (2017) explored the use of iPads in Pre-Kindergarten classrooms to support emergent literacy and math skills. Their quasi-experimental study with 28 students showed that the group using iPads with guided instruction achieved significantly higher scores in phonological awareness and mathematics, emphasizing the role of mobile learning in early education. Boticki and Baksa (2015) investigated how 305 Singaporean primary school pupils used SamEx, a mobile learning technology. The system enabled students to capture and share media while engaging in peer discussions. Their study found a positive link between the quality of contributions and end-year assessment scores, highlighting the effectiveness of mobile learning in formal and informal contexts. Karthikeyan et al. (2015) surveyed students at Thiagarajar College of Engineering in India, finding that mobile learning effectively supported the comprehension of complex subjects, fostering higher-level knowledge acquisition. Similarly, Agarwal et al. (2014) explored the use of augmented reality (AR) applications in mobile learning, showing how AR-enhanced platforms improve user interaction and aid focused educational tasks.

### **Research Gap**

While research has shown that mobile learning is effective in a variety of educational settings, some significant gaps exist. Nikou and Economides (2018) focused on mobile-based micro-learning for high school science in Europe, but Reeves et al. (2017) investigated the use of iPads for early literacy and math in pre-kindergarten, which limited their scope to young learners. Boticki and Baksa (2015) and Baran (2014) conducted research on system characteristics and teacher training, but did not address theoretical frameworks or implementation issues. Nedungadi et al. (2018) evaluated mobile technology's function in rural India, focusing on boosting attendance and logistics, but did not examine broader academic effects. These gaps highlight the need for additional research on the influence of mobile learning on secondary education, particularly in countries such as India, where infrastructure and pedagogical challenges remain major.

### **SIGNIFICANCE OF THE STUDY**

The value of this study stems from its capacity to illustrate the positive influence of mobile learning on students' academic performance, emphasizing the importance of students' attitudes toward mobile learning. This study supports the hypothesis that integrating mobile learning can increase student engagement and academic accomplishment, as found by Demir & Akpınar (2018) and Timotheou et al. (2023). Furthermore, the study sheds light on how characteristics such as gender and school type influence academic achievements, demonstrating that girls and children attending private unaided schools score better. This study emphasizes the importance of successful mobile learning implementation, teacher training and the creation of accessible resources, providing a realistic foundation for improving education using technology.

### **RESEARCH TOPIC**

The topic selected for the present topic is as follows

#### **Relationship between Secondary School Students' Attitude towards Mobile Learning and Academic Performance**

#### **OBJECTIVES**

1. To assess the attitude of secondary school students towards mobile learning.
2. To evaluate the academic performance of students using mobile learning.

3. To determine the correlation between students' attitudes towards mobile learning and their academic performance.
4. To examine the differences in the academic performance of secondary school students with regard to gender and type of management.

### HYPOTHESES

1. There is no significant relationship between students' attitudes towards mobile learning and their academic performance.
2. There is no significant difference in the Academic Performance of secondary school boys and girls.
3. There is no significant difference in the Academic Performance of secondary school students studying in government and private aided schools.
4. There is no significant difference in the Academic Performance of secondary school students studying in private aided and private unaided schools.
5. There is no significant difference in the Academic Performance of secondary school students studying in government and private unaided schools.

### METHODOLOGY

- **Research Design:** Descriptive survey method
- **Sample:** 120 secondary school students (8–9th standard students) from urban schools in Arasikere.
- **Sampling Technique:** Stratified random sampling
- **Tools for Data Collection:**

Attitude Scale: A self-developed Mobile Learning Attitude Scale, validated by subject experts with a reliability coefficient above 0.800.

Academic Performance: Scores obtained in recent school examination.

- **Data Analysis:**

Inferential statistics: Pearson's correlation and independent 't' test considered.

### ANALYSIS AND INTERPRETATION OF DATA

Table-1: showing variables, mean, standard deviation, 'r' value and level of significance on secondary school students' Attitude towards Mobile Learning and Academic Performance.

| Variables  | Number | df  | Obtained 'r' value | Level. of Sig. |
|--|--------|-----|--------------------|----------------|
| Achievement Performance and Attitude towards Mobile Learning | 120    | 118 | 0.406              | **             |

\*\*Significant at 0.01 level (0.254)

The above table-1 shows that correlation results between secondary school students' attitude towards mobile and learning and Academic Performance scores are given. The obtained 'r' value of 0.406 is greater than table value 0.254 at 0.01 level which shows significant positive relationship between secondary school students' attitude towards mobile learning and Academic Performance. Hence, the stated null hypothesis is **rejected** and alternative hypothesis has been formulated that "there is

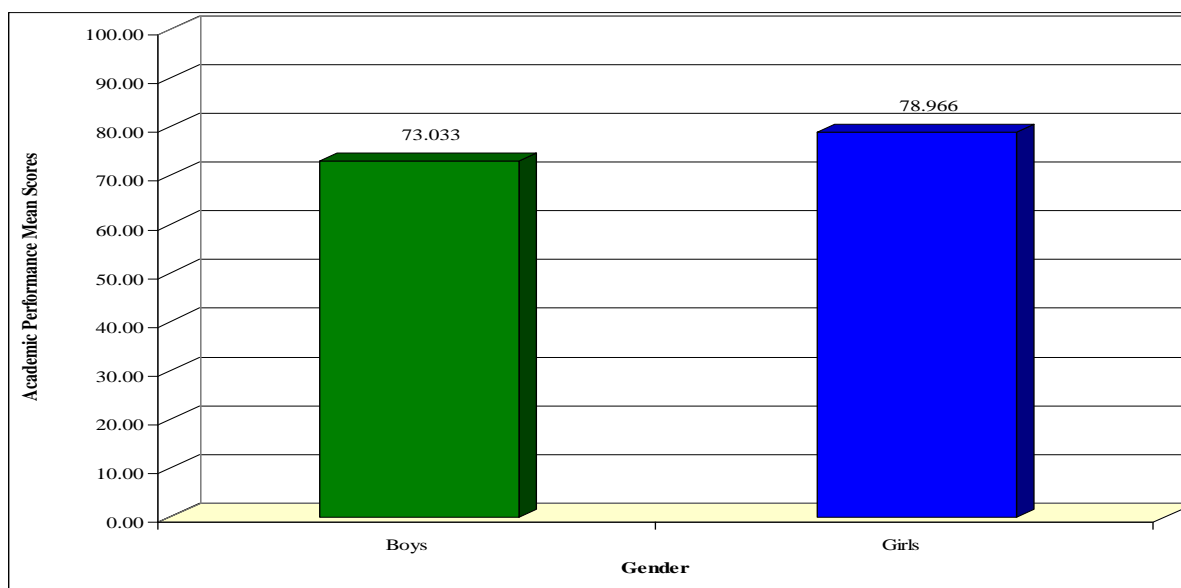
significant positive relationship between secondary school students' attitude towards mobile learning and their academic performance." It concludes that attitude towards mobile learning is positively correlated with academic performance of secondary school students. The students who had favourable attitude towards mobile learning had higher performance in academic and vice versa.

**Table-2:** Showing independent 't' test results related to Academic Performance of secondary school students with regard to gender.

| Variable | Group | Sample Size | Mean scores | Std. Deviation | 't' Value | Sig. level |
|----------|-------|-------------|-------------|----------------|-----------|------------|
| Gender   | Boys  | 60          | 73.033      | 15.585         | 2.34      | *          |
|          | Girls | 60          | 78.966      | 11.937         |           |            |

\*Significant at 0.05 level (N=120; df=118, 0.05=1.98)

The above table-2 reveals the variables along with groups, number of samples, mean scores, standard deviation, 't' value and level of significance pertaining to Academic Performance of secondary school students due to variations in the gender. From the independent 't' test it was shown that the obtained 't' value (t=2.34) related to Academic Performance of secondary school boys and girls is higher than the tabulated value (1.98) at 0.05 level of confidence. Hence, the stated hypothesis is **rejected** and in its place an alternate hypothesis has been formulated that is 'there is a significant difference in the Academic Performance of secondary school boys and girls'. The Academic Performance mean scores of girls (M=78.966) is higher than the mean scores of boys (M=73.033). It can be concluded that secondary school girls' academic performance is better when compared to boys.



**Fig.1:** Comparison of mean Academic Performance scores of secondary school boys and girls.

**Table-3:** Showing independent 't' test results related to Academic Performance of secondary school students with regard to type of school management.

| Variable | Group         | Sample Size | Mean scores | Std. Deviation | 't' Value | Sig. level |
|----------|---------------|-------------|-------------|----------------|-----------|------------|
|          | Government    | 40          | 72.500      | 16.009         | 0.71      | NS         |
|          | Private Aided | 40          | 74.875      | 13.843         |           |            |

|                           |                 |    |        |        |      |   |
|---------------------------|-----------------|----|--------|--------|------|---|
| Type of School Management | Private Aided   | 40 | 74.875 | 13.843 | 2.04 | * |
|                           | Private Unaided | 40 | 80.625 | 11.242 |      |   |
|                           | Government      | 40 | 72.500 | 16.009 | 2.63 | * |
|                           | Private Unaided | 40 | 80.625 | 11.242 |      |   |

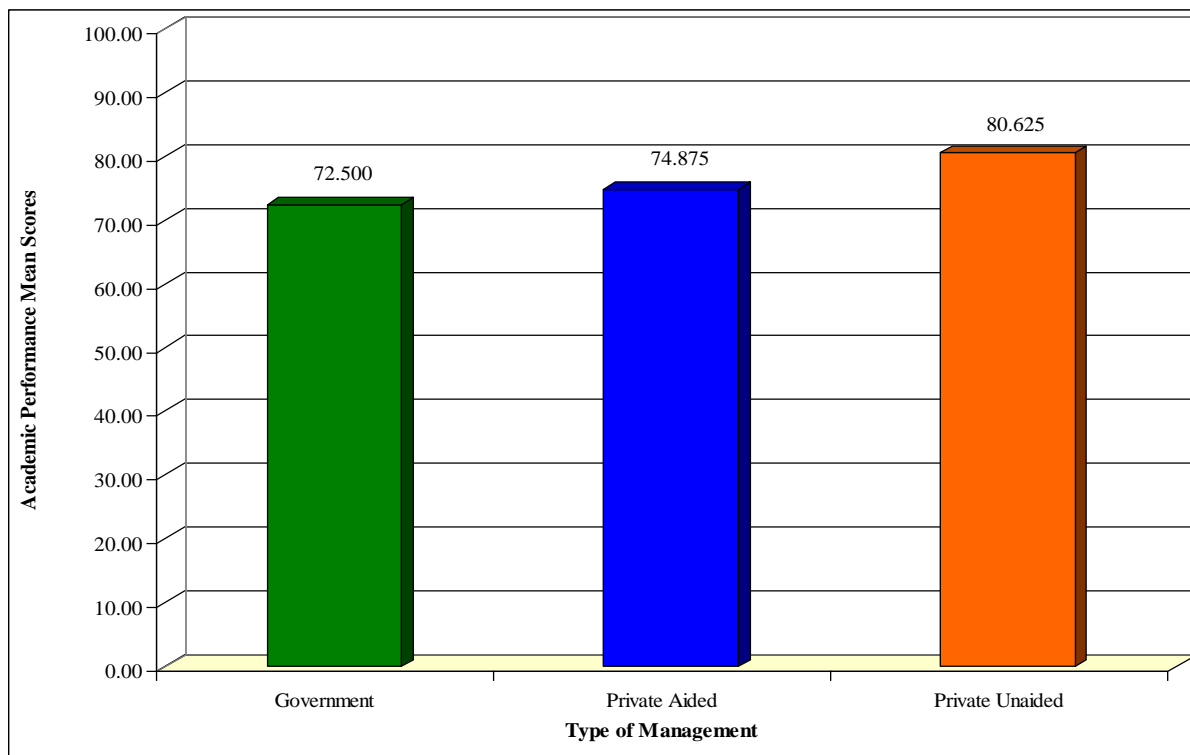
\*Significant at 0.05 level (N=80; df=78, 0.05=1.99; 0.01=2.64)

The above table-2 reveals the variables along with groups, number of samples, mean scores, standard deviation, 't' value and level of significance pertaining to Academic Performance of secondary school students due to variations in the type of school management. The obtained 't' value (t=2.04) related to Academic Performance of private aided and private unaided secondary school students is higher than the tabulated value (1.99) at 0.05 level of confidence. Hence, the stated hypothesis is **rejected** and in its place an alternate hypothesis has been formulated that is 'there is a significant difference in the Academic Performance of private aided and private unaided secondary school students.'

Also the obtained 't' value (t=2.63) related to Academic Performance of government and private unaided secondary school students is higher than the tabulated value (1.99) at 0.05 level of confidence. Hence, the stated hypothesis is **rejected** and in its place an alternate hypothesis has been formulated that is 'there is a significant difference in the Academic Performance of government and private unaided secondary school students.'

Further, The obtained 't' value (t=0.71) related to Academic Performance of government and private aided secondary school students is less than the tabulated value (1.99) at 0.05 level of confidence. Hence, the stated hypothesis is **accepted** that 'there is no significant difference in the Academic Performance of government and private aided secondary school students.'

Overall it can be concluded that, the private unaided school students' academic performance is better when compared with private aided and government school students.



**Fig.2:** Comparison of mean Academic Performance scores of government, private aided and private unaided secondary school students.

## RESULTS

1. Found significant relationship between secondary school students' attitude towards mobile learning and their academic performance.
2. Significant difference in the Academic Performance of secondary school boys and girls.
3. No significant difference in the Academic Performance of secondary school students studying in government and private aided schools.
4. Significant difference in the Academic Performance of secondary school students studying in private aided and private unaided schools.
5. Significant difference in the Academic Performance of secondary school students studying in government and private unaided schools.

## DISCUSSION OF FINDINGS WITH PREVIOUS STUDIES

The findings are consistent with prior research indicating that mobile learning improves students' attitudes and academic performance. For example, Demir and Akpınar (2018) discovered that mobile learning could boost academic performance and motivation. Similarly, Timotheou et al. (2023) stated that digital tools, including mobile learning, can improve not just academic achievement but also engagement with learning. The study's finding that girls perform better academically and that private unaided schools perform better may be explained by the resources and opportunities available in those settings, which have been identified in previous research as contributing factors to educational success (Oliveira et al., 2021).

## CONCLUSION

The study found that secondary school students' views toward mobile learning are positively related to their academic achievement. Schools that properly adopt mobile learning can increase student learning experiences, overcome educational gaps and boost academic achievements.

## EDUCATIONAL IMPLICATIONS

The findings have various implications for schooling. To guarantee effective utilization, schools should integrate mobile learning into the curriculum and establish clear norms. Teachers must be educated to exploit the benefits of mobile learning technologies in the classroom. Furthermore, efforts should be made to create affordable and accessible mobile learning resources, particularly for children in government schools, to ensure equal educational opportunities for all.

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