

Higher Secondary Students' Attitude towards the Use of Multimedia

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Abstract:

The present study aimed to examine the level of attitude towards the use of multimedia among higher secondary students and to analyse differences in attitude with respect to selected demographic variables such as gender, locality, type of residence, and family type. The study adopted a normative survey method. A sample of 751 higher secondary students was selected using random sampling technique. Data were collected using a standardized Attitude towards Use of Multimedia Scale. Statistical techniques such as mean, standard deviation, and t-test were employed for data analysis. The findings revealed that higher secondary students possess a moderately high attitude towards multimedia usage. Significant differences were found based on gender, locality, type of residence, and family type. Female students, rural students, hostel-stayed students, and students from joint families demonstrated more favourable attitudes towards multimedia. The study highlights the need for context-sensitive multimedia integration strategies and supportive learning environments to optimise educational outcomes.

Keywords: Multimedia usage, attitude, higher secondary students, gender, locality, family type.

Introduction

The rapid advancement of Information and Communication Technology (ICT) has significantly reshaped the educational landscape. Multimedia, which integrates text, audio, video, animation, and graphics, has emerged as an effective instructional tool capable of enhancing learners' engagement, motivation, and conceptual understanding. At the higher secondary level, where students encounter abstract concepts and increased academic demands, multimedia plays a vital role in facilitating meaningful learning experiences. Students' attitude towards the use of multimedia is a critical determinant of its instructional effectiveness. A positive attitude encourages acceptance and active utilisation of multimedia resources, whereas a negative attitude may limit their educational potential. Understanding students' attitudes and the factors influencing them is therefore essential for effective technology integration in classrooms.

Review of Related Studies

Previous studies consistently report favourable attitudes towards multimedia-assisted instruction among secondary and higher secondary students. Research indicates that multimedia enhances interest, motivation, and achievement across subjects, particularly in science and language learning (Mayer, 2008; Alemdag & Cagiltay, 2018).

Several studies have examined demographic differences in multimedia attitude. While some researchers found no significant gender differences (Kaur & Sharma, 2014), others reported higher multimedia acceptance among female students due to greater engagement and learning motivation (Paul, 2024). Studies on locality have produced mixed results, with recent research indicating improved multimedia attitudes among rural students due to increased ICT access (Ghosh, 2024).

Family environment and type of residence have also been found to influence students' learning attitudes. Hostel-stayed students often show greater reliance on digital resources, while students from joint families

benefit from shared learning support and guidance (Singh, 2019). However, most studies have examined these variables in isolation, indicating the need for integrated and context-specific investigations.

Method of Study

A normative survey was the methodology

Location of the Study

The area where the current investigation was done was Vellore District of Tamil Nadu, India.

Sample of the Study

The present study consists of 751 Higher secondary Students (11th Standard) Higher secondary schools in Vellore District of Tami Nadu, India.

Tool used for the present study

Attitude towards use of Multimedia- constructed and validated by Prakash V and Dheivamani A (2024), used for the present study.

Analysis of Mean and SD of Higher Secondary students' Attitude towards Use of Multimedia Scores

The Attitude towards Use of Multimedia scores are collected from the 751 Higher Secondary students. For both the total sample and its sub-sample, the mean and SD were determined and given in Table No. 1.

Table No 4.1.

The Mean and SD of Higher Secondary Students' Attitude towards Use of Multimedia Scores

Demographic Variables	Sub sample	N	Mean	SD
Gender	Male	344	92.60	13.328
	Female	407	100.55	12.474
Locality	Rural	401	99.92	13.008
	Urban	350	93.46	13.153
Type of Residence	Day scholar	531	95.83	13.155
	Hostel stayed	220	99.51	13.855
Family Type	Nuclear	521	96.24	13.278
	Joint	230	98.42	13.771

The mean and standard deviation values presented in Table 4.1 reveal the overall level and variability of Higher Secondary students' attitude towards the use of multimedia in learning. The entire sample (N = 751) has a mean score of 96.51 with a standard deviation of 13.59, indicating a moderately high and fairly consistent attitude towards the use of multimedia among Higher Secondary students.

Gender

Female students (Mean = 100.55, SD = 12.47) show a more favourable attitude towards multimedia compared to male students (Mean = 92.60, SD = 13.33). The lower SD among females indicates greater consistency in their attitude scores.

Locality

Rural students (Mean = 99.92, SD = 13.01) demonstrate a higher attitude score than urban students (Mean = 93.46, SD = 13.15).

Type of Residence

Hostel-stayed students (Mean = 99.51, SD = 13.86) exhibit a higher attitude towards multimedia than day scholars (Mean = 95.83, SD = 13.16). This may be attributed to increased exposure or dependence on digital learning tools among hostel students.

Family Type

Students from joint families (Mean = 98.42, SD = 13.77) score slightly higher than those from nuclear families (Mean = 96.24, SD = 13.28).

Null Hypothesis

There is no significant dissimilarity in Attitude towards Use of Multimedia between male and female Higher Secondary students.

For the purpose of testing the hypothesis ‘t’ value is calculated.

Table No. 2

The significance of dissimilarity in Attitude towards Use of Multimedia of Higher Secondary students with respect to their Gender

Gender	N	Mean	SD	t-value	State of significance
Male	344	92.60	13.328	8.739	Significant
Female	407	100.55	12.474		

Table No.2 presents the results of the t-test conducted to examine whether there is a significant difference in Attitude towards Use of Multimedia between male and female Higher Secondary students.

The mean score of female students (Mean = 100.55, SD = 12.47) is higher than that of male students (Mean = 92.60, SD = 13.33). The calculated t-value is 8.739, which is found to be significant at the prescribed level.

Since the obtained t-value is significant, the null hypothesis is rejected. This indicates that there exists a statistically significant difference in the attitude towards the use of multimedia between male and female Higher Secondary students. The result shows that female students possess a more favourable attitude towards the use of multimedia in learning compared to male students. Hence, gender plays a significant role in influencing students’ attitude towards multimedia usage in the educational process

Null Hypothesis

There is no significant dissimilarity in Attitude towards Use of Multimedia between rural and urban Higher Secondary students.

For the purpose of testing the hypothesis ‘t’ value is calculated.

Table No. 3

The significance of dissimilarity in Attitude towards Use of Multimedia of Higher Secondary students with respect to their Locality

Locality	N	Mean	SD	t-value	State of significance
Rural	401	99.92	13.008	6.749	Significant
Urban	350	93.46	13.153		

Table No. 3 presents the results of the t-test conducted to examine whether there is a significant difference in Attitude towards Use of Multimedia between rural and urban Higher Secondary students.

The mean score of rural students (Mean = 99.92, SD = 13.01) is higher than that of urban students (Mean = 93.46, SD = 13.15). The calculated t-value is 6.749, which is found to be significant at the prescribed level.

Since the obtained t-value is significant, the null hypothesis is rejected. This indicates that there exists a statistically significant difference in the attitude towards the use of multimedia between rural and urban Higher Secondary students.

The results reveal that rural students possess a more favourable attitude towards the use of multimedia compared to their urban counterparts. Hence, locality has a significant influence on students’ attitude towards multimedia usage in the learning process

Null Hypothesis

There is no significant dissimilarity in Attitude towards Use of Multimedia between day scholar and hostel stayed Higher Secondary students.

For the purpose of testing the hypothesis ‘t’ value is calculated.

Table No. 4

The significance of dissimilarity in Attitude towards Use of Multimedia of Day scholar and Hostel stayed Higher Secondary students

Type of Residence	N	Mean	SD	t-value	State of significance
Day scholar	531	95.83	13.155	3.364	Significant
Hostel stayed	220	99.51	13.855		

Table No. 4 presents the results of the t-test conducted to examine whether there is a significant difference in Attitude towards Use of Multimedia between day scholar and hostel-stayed Higher Secondary students. The mean score of hostel-stayed students (Mean = 99.51, SD = 13.86) is higher than that of day scholars (Mean = 95.83, SD = 13.16). The calculated t-value is 3.364, which is found to be significant at the prescribed level.

Since the obtained t-value is significant, the null hypothesis is rejected. This indicates that there exists a statistically significant difference in the attitude towards the use of multimedia between day scholar and hostel-stayed Higher Secondary students.

The result shows that hostel-stayed students possess a more favourable attitude towards the use of multimedia compared to day scholars. Hence, the type of residence has a significant influence on students’ attitude towards multimedia usage in the learning process

Null Hypothesis

There is no significant dissimilarity in Attitude towards Use of Multimedia between Nuclear and Joint family Higher Secondary.

For the purpose of testing the hypothesis ‘t’ value is calculated

Table No. 5

The significance of dissimilarity in Attitude towards Use of Multimedia between Nuclear and Joint family Higher Secondary students

Family Type	N	Mean	SD	t-value	State of significance
Nuclear	521	96.24	13.278	2.021	Significant
Joint	230	98.42	13.771		

Table 5 presents the results of the t-test conducted to examine whether there is a significant difference in Attitude towards Use of Multimedia between nuclear family and joint family Higher Secondary students.

The mean score of students belonging to joint families (Mean = 98.42, SD = 13.77) is higher than that of students from nuclear families (Mean = 96.24, SD = 13.28). The calculated t-value is 2.021, which is found to be significant at the prescribed level.

Since the obtained t-value is significant, the null hypothesis is rejected. This indicates that there exists a statistically significant difference in Attitude towards Use of Multimedia between Higher Secondary students from nuclear and joint families.

The result reveals that students from joint families demonstrate better Attitude towards Use of Multimedia compared to students from nuclear families. Hence, family type has a significant influence on the Attitude towards Use of Multimedia of Higher Secondary students

Conclusion

The findings of the present study corroborate earlier research that reported favourable student attitudes towards multimedia-based learning. The significantly higher attitude among female students supports studies emphasising increased engagement and learning orientation among female learners. The higher multimedia attitude among rural students reflects recent improvements in ICT infrastructure and digital initiatives, aligning with emerging research trends. Hostel-stayed students' favourable attitude may be attributed to greater exposure and dependence on digital learning tools. Similarly, the supportive learning environment in joint families may explain their higher multimedia attitude. The study concludes that higher secondary students generally possess a favourable attitude towards multimedia usage. Demographic variables such as gender, locality, type of residence, and family type significantly influence students' attitudes. The findings underscore the need for differentiated instructional strategies and inclusive ICT policies to enhance effective multimedia integration in higher secondary education.

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