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Research Paper

ATTITUDE OF HIGH SCHOOL MATHEMATICS TEACHERS TOWARDS USING SMART BOARD IN TEACHING OF MATHEMATICS

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Abstract

This study aimed at investigating the attitudes of high school mathematics teachers toward using a smart board in teaching mathematics and also to determine the effect of gender, location, type of family of teachers on their attitudes. The sample of this study consisted of 350 high school mathematics teachers from government, government aided and private schools in Salem District. Attitude towards using smart board in teaching of mathematics scale was developed by the investigator. This questionnaire was designed by the researchers themselves, which consisted of 25 statements. Means and standard deviations and t-test were used to analyze the results. The results of the study revealed that the high school mathematics teachers have positive attitudes toward using a smart board in teaching mathematics. Results showed that there is statistically significant difference due to gender, location and type of family variables.

Keywords: *Mathematics Teachers' Attitudes, Smart Board, Teaching Mathematics.*

1. INTRODUCTION

The integration of technology into education has revolutionized the way teachers approach instruction and students engage with learning. Smart boards, interactive whiteboards that combine a projector with a touch-sensitive display, have emerged as a prominent tool in modern classrooms, offering a dynamic and engaging platform for delivering lessons. In the realm of mathematics education, smart boards hold immense potential to enhance the teaching and learning process, fostering deeper conceptual understanding and promoting active student participation. This introduction delves into the attitudes of mathematics teachers towards incorporating smart boards into their teaching practices. It explores the perceived benefits and challenges of using smart boards in mathematics instruction, highlighting the factors that influence teachers' willingness to adopt this technology. Additionally, it examines the impact of smart boards on student engagement, motivation, and achievement in mathematics.

2. PERCEIVED BENEFITS OF USING SMART BOARDS IN MATHEMATICS INSTRUCTION

Mathematics teachers who embrace smart boards recognize a multitude of benefits that enhance their teaching effectiveness and enrich student learning experiences. These benefits include:

- **Visualization and Engagement:** Smart boards provide a dynamic visual platform for presenting mathematical concepts, allowing teachers to create interactive diagrams, graphs, and simulations that capture students' attention and promote deeper understanding.

- **Interactive Learning:** Smart boards facilitate active student participation through interactive activities, games, and simulations. Students can manipulate objects on the screen, solve problems collaboratively, and receive immediate feedback, fostering a more engaging and hands-on learning experience.
- **Adaptive Instruction:** Smart boards enable teachers to tailor instruction to meet the diverse needs of learners. They can differentiate lessons, provide individualized feedback, and cater to different learning styles, ensuring that all students have the opportunity to succeed.
- **Technology Integration:** Smart boards promote the integration of technology into mathematics instruction, preparing students for a world increasingly reliant on digital tools. Students develop technological proficiency while enhancing their mathematical understanding.

3. PURPOSE OF THE STUDY

The purpose of this study is to investigate the attitudes of mathematics teachers toward using a smart board in teaching mathematics and also to determine the effect of gender, location and type of family of teachers on their attitudes.

4. RESEARCH QUESTIONS OF THE STUDY

- Are there statistically significant differences in the attitudes of mathematics teachers due to their gender (male, female)?
- Are there statistically significant differences in the attitudes of mathematics teachers due to their location (rural, urban)?
- Are there statistically significant differences in the attitudes of mathematics teachers due to their type of family (joint family, nuclear family)?

5. OBJECTIVES OF THE STUDY

To find the significant difference between the attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on the select samples

6. HYPOTHESIS OF THE STUDY

There is no significant difference between the attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on the select samples

7. RESEARCH DESIGN OF THE STUDY

Normative survey method was adopted in the study. The population of the present study includes high school mathematics teachers working in government, government aided and private schools. The sample consists of 350 male and female high school mathematics teachers from various Schools located in Salem District. Attitude towards using smart board in teaching of mathematics scale was developed by the investigator. This questionnaire was designed by the researchers themselves, which consisted of 25 statements. Many variables were included, such as the gender of the teachers, location, and type of family. The teacher answers each statement of the questionnaire according to a Likert-type scale The collected data was statically analysed by using ‘t’- test.

8. HYPOTHESIS TESTING

Null hypothesis – 1

There is no significant difference between the attitude of high school mathematics teachers towards using smart board in teaching of mathematics based on their gender

Table-1: Significant difference between attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on gender

Gender	N	Mean	SD	t value	Level of significance
Male	148	57.45	14.876	2.400	Significant
Female	202	53.67	14.098		

From the above table, it is inferred that t- value (2.400) is greater than the table value (1.96) at 0.05 level. The male mean score is (57.45) is better than female mean score (53.67).Hence there is significant difference between the male and female high school mathematics teachers attitude of towards using smart board in teaching of mathematics mean scores. Therefore the above null hypothesis is rejected.

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Null hypothesis – 2

There is no significant difference between the attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on their location

Table-2: Significant difference between attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on location

Location	**N**	Mean	Sd	t value	Level of significance
Rural	160	52.98	14.564	6.495	Significant
Urban	190	42.90	14.342		

From the above table, it is inferred that t- value (6.495) is greater than the table value (1.96) at 0.05 level. The rural area mean score is (52.98) better than urban area mean score (42.90). Hence there is significant difference between the rural and urban area high school mathematics teachers attitude towards using smart board in teaching of mathematics mean scores. Therefore the above null hypothesis is rejected.

Null hypothesis – 3

There is no significant difference between the attitude of high school mathematics teachers towards using smart board in teaching of mathematics based on their type of family

Table-3: Significant difference between the attitudes of high school mathematics teachers towards using smart board in teaching of mathematics based on type of family

Type of family	N	Mean	Sd	t value	Level of significance
Joint	207	51.01	14.023	2.437	Significant
Nuclear	143	54.76	14.239		

From the above table, it is inferred that t- value (2.437) is greater than the table value (1.96) at 0.05 level. The nuclear family mean score is (54.76) is better than joint family mean score (51.01). Hence there is significant difference between joint and nuclear family high school mathematics teachers attitude towards using smart board in teaching of mathematics mean scores. Therefore the above null hypothesis is rejected.

9. EDUCATIONAL IMPLICATIONS OF THE STUDY

The positive attitudes of high school mathematics teachers towards using smart boards in teaching mathematics carry significant educational implications. Embracing smart boards as a preferred instructional tool over traditional boards signals a shift towards technology-enriched learning environments that foster engagement, motivation, and achievement in mathematics. Schools should invest in smart board technology and provide comprehensive training and support to teachers, enabling them to harness the full potential of this tool. By incorporating smart boards into mathematics instruction, teachers can create dynamic and interactive lessons that cater to diverse learning styles, enhance conceptual understanding, and promote active student participation. This shift towards technology-integrated mathematics instruction has the potential to transform the learning experience, leading to improved student outcomes and a deeper appreciation for the subject.

10. CONCLUSION

Results showed that high school mathematics teachers have positive attitudes toward using a smart board in teaching mathematics and they prefer using it instead of a traditional board. In conclusion, the study's findings reveal a positive attitude among high school mathematics teachers towards incorporating smart boards into their teaching practices. They recognize the numerous benefits of this technology, including enhanced visualization, interactive learning opportunities, adaptive instruction, and technology integration. Despite some challenges related to technical expertise, access, time commitment, and individual beliefs, the overall preference for smart boards over traditional boards highlights their perceived value in fostering effective mathematics instruction.

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