

# A STUDY ON SCIENCE ACHIEVEMENT OF 9TH STANDARD STUDENTS IN RELATION TO ATTITUDE TOWARDS TALP ON SCIENCE LEARNING

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**Abstract:** The purpose of this investigation is to examine the Science Achievement of 9th Standard Students in relation to attitude towards TALP (Technology Assisted Learning Programme) on Science Learning. The present research was followed by a descriptive survey method. The sample of 100 9th standard students from ten government schools situated at Bengaluru South Districts selected as sample. Science Achievement of students was taken from the office records of their respective schools and 'Attitude Towards TALP' (Technology Assisted Learning Programme) on Science Learning developed by Dr. Vanishree (2018) was used to assess the attitude towards Technology Assisted Learning Programme on science learning of the 9th standard students. The collected data was analyzed through correlation and independent 't' test and in all cases the level of significance was fixed at 0.05 and 0.01 level of confidence. The correlation result shows positive significant relationship between attitude towards TALP on science learning and science achievement of 9th standard students. The same has shown from 't' test analysis that there was a significant difference in the Science Achievement of 9th standard boys and girls and also shows that, there was a significant difference in the Science Achievement of 9th standard students having varied attitude levels towards TALP on science learning. This may be due to lack of encouraging students involvement. Involve students in the process of selecting and implementing technology-assisted learning programs. This helps build ownership and enthusiasm. Make learning interactive and engaging by incorporating game elements such as points, rewards, and competition.

**Index Terms** – Attitude, Technology Assisted Learning Programme (TALP), Achievement, Science, 9th Std. Students.

## INTRODUCTION

Technology is very important in the present scenario because it is being used in all the fields of life including education. The system of education which happens to be the most important factor of development is under increasing pressure to use new technologies to prepare the future generations for the knowledge and skills they will need in future years. Technology is continuing to affect the academic transactions involving teaching, learning, research, extension activities in the universities, colleges, and other institutions. Use of mobile phones, televisions, computers, internet and machines, all are included in our day to day life. Technology has the potential to make education more accessible, personalized, and interactive for students, but it is important to use it in a way that supports their learning goals and needs.

TALP refers to Technology-Assisted Learning Programme. In Karnataka, technology-assisted learning has been widely adopted in the education sector. Technology Assisted Learning Programme (TALP) from 2016-17 with an objective to complement normal classroom teaching with ICT enabled Teaching and Learning in all subjects as well as to ensure digital literacy for all Secondary School students for enhancing learning achievement.

Government of Karnataka has redesigned ICT programme in school education and has implemented Technology Assisted Learning Programme (TALP) with an objective to complement normal classroom teaching with ICT enabled teaching and learning in all subjects as well as to ensure digital literacy for all secondary school students for enhancing learning achievement. TALP is an integration of the existing technology assisted programmes of the department such as EDUSAT, Computer based learning under SSA, Tele-Education, Mahiti Sindhu and IT@Schools. Use of digital contents in the form of e-content is promoted under TALP to engage the interest of students and enhance their understanding.

The impact of Technology-Assisted Learning Programme (TALP) on students' science learning can be both positive and negative. Some of the potential benefits include:

- Increased engagement and motivation: Technology-assisted learning programs can make science more interactive and engaging for students, which can increase their motivation to learn.
- Personalized learning: TALP can provide students with customized content and feedback, which can help them learn at their own pace and in a way that best suits their learning style.
- Improved accessibility: Technology-assisted learning programs can make science education more accessible to students who live in remote or underserved areas.
- Enhanced collaboration and communication: TALP can provide students with opportunities to collaborate and communicate with classmates and teachers, which can deepen their understanding of science concepts.

However, there are also potential drawbacks to consider. Some of these include:

- Technical barriers: Technical issues can arise when using technology in the classroom, such as network connectivity problems or software compatibility issues.
- Limited hands-on experiences: TALP may limit students' opportunities to engage in hands-on learning experiences, which are essential for developing science skills and knowledge.

The attitudes of students towards Technology Assisted Learning Programme (TALP) in science learning can vary. Some students may embrace TALP as a convenient and effective way to learn, while others may resist it. Advantages of TALP in science learning like accessibility to online resources and materials at any time, flexibility in terms of pace and schedule, the ability to learn at their own pace. The disadvantages of TALP in science learning may include lack of interaction with teachers and peers, difficulty in retaining information without hands-on experiences, dependence on technology, which can be unreliable or unavailable at times. Ultimately, the effectiveness of TALP in science learning will depend on various factors, including the quality of the materials and instruction, student's learning style, and the availability of support and resources. Overall, the impact of TALP on students' science learning will depend on how well the technology is integrated into the curriculum and how effectively it supports student learning goals and needs.

## **NEED AND IMPORTANCE OF THE STUDY**

The Karnataka government has taken various initiatives to promote the use of technology in education, such as E-learning portals, digital classrooms, training programmes, mobile and tablet distribution etc. The government has launched e-learning portals to provide students with online resources and digital content for various subjects. The government has set up digital classrooms equipped with technology such as projectors, interactive boards, and computers in many schools. The government has conducted training programs for teachers on the effective use of technology in classroom. The government has distributed mobile phones and tablets to students in many rural and tribal areas to support their learning. These initiatives are aimed at improving the quality of education and making it more accessible to students in Karnataka. However, there are still challenges to overcome, such as ensuring equitable access to technology, addressing the digital divide, and providing adequate training and support to teachers. TALP can play a significant role in science learning by making it more engaging, personalized, and accessible to students, and by fostering the development of essential skills for the 21st century.

## **STATEMENT OF THE PROBLEM**

The aim of the researcher is to examine the Science Achievement of 9th Standard Students in relation to their attitude towards Technology Assisted Learning Programme (TALP). The topic identified for the current investigation is: "A Study on Science Achievement of 9th Standard Students in relation to their Attitude towards Technology Assisted Learning Programme (TALP)."

## **OBJECTIVES OF THE STUDY**

1. To find out the relationship between Science Achievement of 9th standard students and their Attitude towards Technology Assisted Learning Programme (TALP) for science learning.

2. To find out the significant differences in the Science Achievement of 9th standard boys and girls.
3. To find out the significant differences in the Science Achievement of 9th standard students having different levels of Attitude towards Technology Assisted Learning Programme (TALP) for science learning.

## RESEARCH HYPOTHESES

The following hypotheses guided the study:

1. There is no significant relationship between Science Achievement of 9th standard students and their attitude towards TALP for Science learning.
2. There is no significant difference in the Science Achievement of 9th standard boys and girls.
3. There is no significant difference in the Science Achievement of 9th standard students having low and moderate levels of attitude towards TALP for science learning.
4. There is no significant difference in the Science Achievement of 9th standard students having moderate and high levels of attitude towards TALP for science learning.
5. There is no significant difference in the Science Achievement of 9th standard students having low and high levels of attitude towards TALP for science learning.

## METHODOLOGY

The purpose of this investigation is to examine the Science Achievement of 9th Standard Students in relation to their attitude towards TALP on Science learning. The present research was followed by a descriptive survey method. The sample of 100 subjects of 9th standard students from ten government schools situated at Bengaluru South District selected as sample. Science Achievement of students was taken from the office records of their respective schools and Attitude towards TALP (Technology Assisted Learning Programme) on Science Learning developed by Dr. Vanishree Koppad (2018) was used to assess the attitude towards TALP among the students. The collected data was analyzed through coefficient of correlation and independent 't' test and in all cases the level of significance was fixed at 0.05 and 0.01 level of confidence.

## ANALYSIS AND INTERPRETATION OF DATA

**Table-1:** Shows 'r' value results related to Science Achievement and Attitude towards TALP on Science learning (N=100; df=98).

Independent and Dependent Variables	Mean	Standard Deviation	'r' value	Sig.
Attitude towards TALP on Science Learning	111.520	32.041	0.684	**
Science Achievement	81.200	12.042		

\*\*Significant at 0.01 level.

The above table-1 demonstrates correlation ('r') results related to Science Achievement and Attitude towards TALP on Science Learning of 9th standard students. The obtained 'r' value 0.684 which shows a significant positive relationship at 0.01 level ('r' critical value 0.254) between Science Achievement and Attitude towards TALP on Science learning of 9th standard students. Hence, the stated null hypothesis is **rejected** and an alternative hypothesis has been formulated that "there is positive significant relationship between Science Achievement and Attitude towards TALP on Science Learning of 9th standard students." It concludes that students who had favourable attitudes towards TALP on science learning had higher achievement in science subject and vice versa.

**Table 2:** Showing 't' value results related to Science Achievement of 9th standard boys and girls.

Variable	Groups	No.	Mean Scores	Standard Deviation	't' value and sig. level	Level of Sig.
Sex	Boys	50	76.600	11.668	4.12	**
	Girls	50	85.800	10.659		

\*\*Significant at 0.01 level

The above table-2 shows the number, mean scores, standard deviation, 't' value and level of significance of Science Achievement of 9th standard boys and girls. Also the table shows that the obtained 't' value 4.12 which is greater than the table value of 2.63 (df=98) at 0.01 level and thus it is significant at 0.01 level. Hence, the null hypothesis is **rejected** and an alternative hypothesis has been formulated that "there is a significant difference in the Science Achievement of 9th standard boys and girls." The science achievement mean scores of girls (M=85.800) had more than the mean scores of boys (M=76.600). It was concluded that the 9th standard girls had better achievement in science than boys. The comparison of Science Achievement of 9th standard boys and girls are graphically presented in Fig.1.

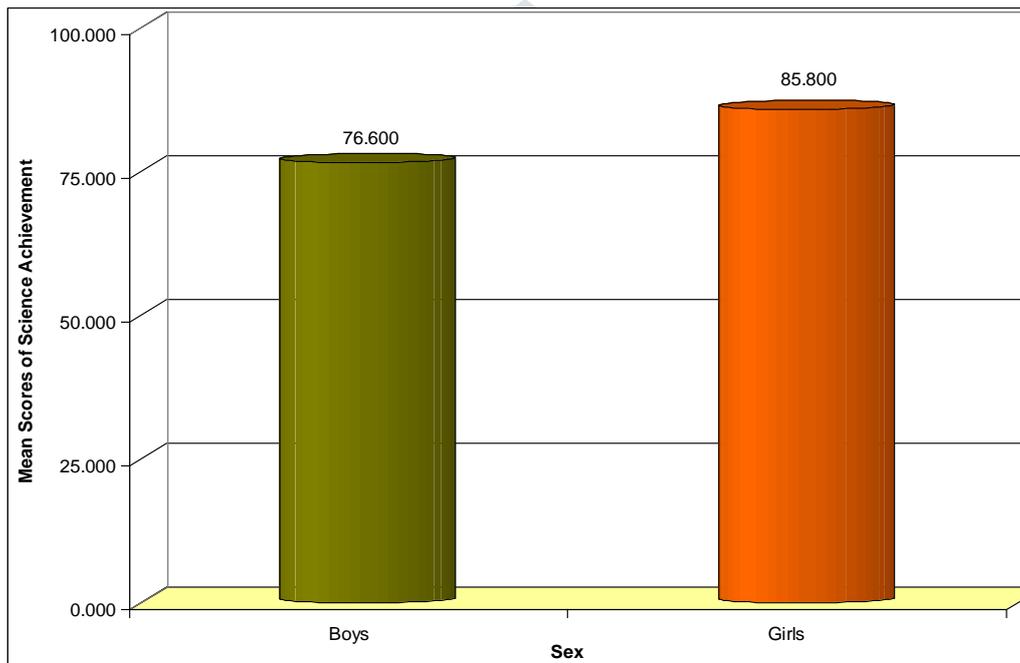


Fig.1: Bar Graph Showing Comparison Of Science Achievement Of 9th Standard Boys And Girls.

Table 3: Showing 't' test results related to Science Achievement of 9th standard students having varied attitude levels towards TALP on science learning.

Variable	Groups	No.	Mean Scores	Standard Deviation	't' value and sig. level	Level of Sig.
Students' attitude levels towards TALP	Low	15	67.000	7.745	6.50	**
	Moderate	73	82.534	11.153		
	Moderate	73	82.534	11.153	4.19	**
	High	12	90.833	5.149		
	Low	15	67.000	7.745	9.56	**
	High	12	90.833	5.149		

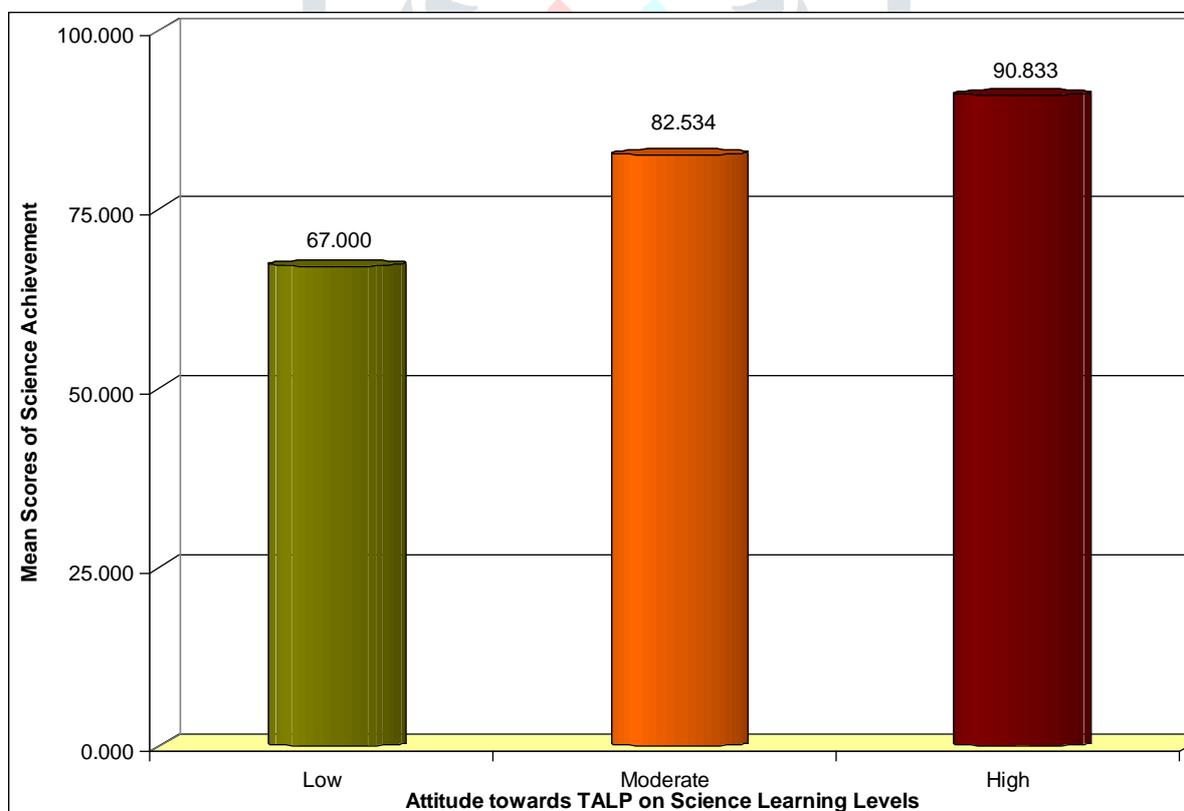
\*\*Significant at 0.01 level

The above table-3 shows the number, mean scores, standard deviation, 't' value and level of significance of Science Achievement of 9th standard students having low, moderate and high attitude levels towards TALP on science learning. According to the said table, it was observed that the obtained 't' value 6.50 which is greater than the table value of 2.64 (df=86) at

0.01 level and thus it is significant at 0.01 level. Hence, the null hypothesis is **rejected** and an alternative hypothesis has been formulated that “there is a significant difference in the Science Achievement of 9th standard students having low and moderate attitude levels towards TALP on science learning.” The students having moderate attitude level towards TALP on science learning ( $M=82.534$ ) had higher science achievement than students having low attitude level towards TALP on science learning ( $M=67.000$ ).

It also shows that, the obtained ‘t’ value 4.19 which is greater than the table value of 2.64 ( $df=83$ ) at 0.01 level and thus it is significant at 0.01 level. Hence, the null hypothesis is **rejected** and an alternative hypothesis has been formulated that “there is a significant difference in the Science Achievement of 9th standard students having moderate and high attitude levels towards TALP on science learning.” The students having high attitude level towards TALP on science learning ( $M=90.833$ ) had higher science achievement than students having moderate attitude level towards TALP on science learning ( $M=82.534$ ).

Further also shows that, the obtained ‘t’ value 9.56 which is greater than the table value of 2.79 ( $df=25$ ) at 0.01 level and thus it is significant at 0.01 level. Hence, the null hypothesis is **rejected** and an alternative hypothesis has been formulated that “there is a significant difference in the Science Achievement of 9th standard students having low and high attitude levels towards TALP on science learning.” The students having high attitude level towards TALP on science learning ( $M=90.833$ ) had higher science achievement than students having low attitude level towards TALP on science learning ( $M=67.000$ ). It concludes that students who had high level ( $M=90.833$ ) of attitude towards TALP on science learning had higher science achievement than students who had moderate ( $M=82.534$ ) and low ( $M=67.000$ ) levels of attitudes towards TALP on science learning. The comparison of Science Achievement of 9th standard students having different levels of attitude towards TALP on science learning are graphically presented in Fig.2.



**Fig.2:** Bar graph showing comparison of Science Achievement of 9th standard students having different levels of attitude towards TALP on science learning.

## RESULTS

1. There was a positive significant relationship between Science Achievement and Attitude towards TALP on Science Learning of 9th standard students.
2. There was a significant difference in the Science Achievement of 9th standard boys and girls.

3. There was a significant difference in the Science Achievement of 9th standard students having low and moderate attitude levels towards TALP on science learning.
4. There was a significant difference in the Science Achievement of 9th standard students having moderate and high attitude levels towards TALP on science learning.
5. There was a significant difference in the Science Achievement of 9th standard students having low and high attitude levels towards TALP on science learning.

## CONCLUSION

The correlation result shows a positive significant relationship between attitude towards TALP on science learning and science achievement of 9th standard students. The same has been proved from 't' test analysis that there was a significant difference in the Science Achievement of 9th standard students having varied attitude levels towards TALP on science learning. It confirmed that students who had high level of attitude towards TALP on science learning had better science achievement than students who had moderate and low level of attitudes. This may be due to lack of student involvement. Involving students in the process of selecting and implementing technology-assisted learning programs must be encouraged. This helps build ownership and enthusiasm. Make learning interactive and engaging by incorporating game elements such as points, rewards, and competition. Incorporate technology-assisted learning into regular lessons so that it becomes a normal part of the students' learning experience. Therefore, teachers and teacher educators need to inculcate the science attitude among students as it is very much essential for the present-day scientific and technological world. Highlight the benefits of technology-assisted learning, such as increased access to resources and personalized learning experiences.

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