

Analysis on Science Achievement of IX Standard Students in relation to Interest in Science Learning

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Abstract: The purpose of this investigation is to examine the Science Achievement of IX standard students in relation to their sex and interest in science learning. The present research was followed by a descriptive survey method. The sample of 300 IX standard students studying in varied type of schools in Bengaluru District selected as sample. Science Achievement of students was taken from the office records of their respective schools and self developed Interest in Science Learning (2018) was used to assess the interest in science of IX standard students. The collected data was analyzed by correlation and independent 't' test and in all cases the level of significance was fixed at 0.05 & 0.01 levels of confidence. The correlation result shows a positive significant relationship between interest in science learning and science achievement of IX standard students. The same has proved from 't' test analysis that there was a significant difference in the Science Achievement of IX standard boys and girls. This is confirmed that students who had more interest in science had higher achievement in science than students who had low interest in science learning. Learning helps individuals to acquire new knowledge and skills, which can lead to increased personal and professional opportunities. Improving academic achievement can lead to higher grades and a better understanding of the material, which can result in greater confidence and self-esteem.

Index Terms – Interest in Science, Achievement, IX Standard, Students.

I. INTRODUCTION

Science has played a crucial role in the advancement of humanity, influencing the way we think, act, and perceive the world. Several outstanding scientific discoveries have transformed our way of life and how we tackle problems. Students are first exposed to the wonders of science and how it has impacted society in secondary education. The development of technology has been one of recent science's most important accomplishments. As the internet has grown, so too have our methods of communication, information access, and commerce. In addition to bringing people closer together, the internet has also fostered a worldwide community where information can be instantaneously exchanged. Also, people may now stay connected wherever they are because to the development of mobile technology. Tablets, computers, and mobile phones are becoming necessary instruments for communication and information access.

In the area of medicine, significant scientific advancements have also been made. New cures for diseases and disorders that were previously thought to be incurable have been developed as a result of advancements in medical science. For instance, the invention of vaccines has aided in the eradication of illnesses like smallpox, and the discovery of antibiotics has altered the way we treat bacterial infections. We can now identify and treat diseases with higher accuracy thanks to medical science, which improves patient outcomes. Due to its strong relationship to the growth of a society's economy, science education is a crucial subject for students to learn. In addition to students' success in learning science, educators are also worried about the emotional consequences of science learning. The relationship between a person's interest in science and their success in learning it has long been of interest to science education educators and scholars (e.g., Abu-Hilal et al., 2014; Darmawan, 2020).

Science has made enormous strides in the search for new, sustainable energy sources. As we explore for ways to lessen our reliance on fossil fuels, the usage of renewable energy sources like solar, wind, and hydro power has grown in popularity. Our carbon footprint has been decreased and transportation has become more environmentally friendly thanks to the introduction of electric vehicles. Significant advancements have also been made in the field of space exploration in recent years. A new era in space exploration began in 1957 with the launch of the first item manufactured by humans into space. Since then, we've sent men to the moon, spacecraft to study other planets, and we've made the International Space Station our permanent home. These accomplishments have improved our knowledge of the universe as a whole and the possibility of life existing somewhere other than Earth.

Interest is a Latin word that means 'it concerns' or 'it matters.' A item that concerns spontaneous activity is simply anything that piques curiosity. Interest is a Latin word that means 'it concerns' or 'it matters.' A item that concerns spontaneous activity is simply anything that piques curiosity. Students recognise the usefulness of science in describing daily life and see it as a vital part of their education when it comes to its applicability. Yet, they emphasise science's practical value more so than its inherent appeal (such as for pursuing a job) (Osborne & Collins, 2001).

The future of science and technical progress depend on secondary school students' interest in the subject. The next generation of scientists and engineers will require the knowledge and abilities to address the problems facing society, hence it is important to foster kids' interest in science. Offering kids practical experiences and hands-on demonstrations is one approach to spark their interest in science. For instance, laboratory exercises, outings, and projects that let students apply what they have learned to actual circumstances could be included in scientific classrooms.

Emphasizing how science has impacted society is another technique to inspire pupils to take an interest in the subject. Students could learn about how science has helped us overcome environmental problems, create new technology, and improve our health, for instance. Students may be more inclined to appreciate science and think about jobs in science-related disciplines if you demonstrate how science has improved society.

Also, it's critical to foster an atmosphere that supports science education. This includes giving teachers the tools and instruction they need to teach science well as well as ensuring that students have access to the most recent tools and technologies. Giving students the chance to take part in science competitions, internships, and other initiatives can also assist to boost their interest in the subject and give them useful experience. According to J.E. Merlin Sasikal's (2014) research, a person's family environment has no beneficial influence on their ability to succeed in science. Ram Mehar and Vipin Kumar (2013) discovered that students who were taught using audiovisual aids had significantly greater achievement levels in physics than those who were taught using traditional techniques. Academic success can be enhanced by fostering an interest in science. Science is a discipline that gives people a basis for understanding the world around them and fosters critical thinking and problem-solving skills. Also, learning science can help you build crucial abilities like data analysis, laboratory proficiency, and hypothesis testing, which are useful in a variety of professions. Also, a passion for science may inspire the pursuit of additional training and research opportunities, which may result in a more satisfying and lucrative profession. Also, understanding science is necessary for making wise decisions and for comprehending pressing topics like climate change, energy policy, and public health. Consequently, having a passion for science can enhance academic performance as well as result in a happier and more satisfying life.

II. NEED AND IMPORTANCE OF THE STUDY

Science education is essential for helping children develop critical abilities and information as they get ready for the future. It is impossible to exaggerate the value of science accomplishments and enthusiasm at the secondary education level. In order to prepare students for the future, foster innovation and creativity, and help them understand the world and the problems facing society, science education is crucial. We can contribute to ensuring a bright future for science and technology as well as for the entire globe by encouraging kids to take an interest in the subject. Positive and reciprocal relationships exist between scientific achievement and scientific interest. Those who are interested in science are more likely to partake in activities that are connected to it, such as reading about scientific discoveries, taking part in science experiments, and looking for experiences that are connected to it. Higher science achievement and better knowledge of scientific topics may result from this enhanced participation. On the other hand, when people succeed and do things in science, it might inspire them more and pique their curiosity. This starts a positive feedback loop where success promotes interest in science, which in turn fuels interest in science. Generally, there is a strong and positive reciprocal relationship between interest in science and scientific achievement, with both feeding the other to produce a successful conclusion.

III. STATEMENT OF THE PROBLEM

The purpose of this investigation is to examine the Science Achievement of IX standard boys and girls in relation to Interest in Science learning. The topic identified for the current investigation is: 'A Study on Achievement in Science of IX standard students in relation to Interest in Science Learning.'

IV. OBJECTIVES OF THE STUDY

1. To find out the relationship between Science Achievement of IX standard students and their Interest in Science Learning.
2. To find out the significant differences in the Science Achievement of IX standard with regard to gender.

V. RESEARCH HYPOTHESES

1. There is no significant relationship between Science Achievement of IX standard students and their Interest in Science learning.
2. There is no significant difference in the Science Achievement of IX standard boys and girls.

VI. METHODOLOGY

The purpose of this investigation is to examine the Science Achievement of IX standard students in relation to their sex and interest in science learning. The present research was followed by a descriptive survey method. The sample of 300 IX standard students studying in varied type of schools in Bengaluru District selected as sample. Science Achievement of students was taken from the office records of their respective schools and self developed Interest in Science Learning (2018) was used to assess the interest in science of IX standard students. The collected data was analyzed by correlation and independent 't' test and in all cases the level of significance was fixed at 0.05 & 0.01 levels of confidence

VII. ANALYSIS AND INTERPRETATION OF DATA

Table-1: Table shows correlation ('r') results pertaining to Science Achievement and Interest in Science Learning (N=300; df=298) of IX standard students.

Independent and Dependent Variables	Number	df	'r' value	Sig.
Interest in Science Learning and Science Achievement	300	298	0.408	**

**Significant at 0.01 level.

From the above table-1 demonstrates correlation ('r') results related to Science Achievement and Interest in Science of IX standard students. The obtained 'r' value 0.408 which shows a significant positive relationship at 0.01 level ('r' critical value 0.181) between Science Achievement and Interest in Science of IX standard students. Hence, the stated null hypothesis is **rejected** and an alternative hypothesis has been formulated that 'there is significant positive relationship between Science Achievement and Interest in Science of IX standard students.' It's inferred that students with more interest in science had higher achievement in science and vice versa.

Table 2: Table showing 't' test results pertaining to Science Achievement scores of IX standard boys and girls.

Variable	Groups	No.	Mean Scores	Standard Deviation	't' value	Sig. P value
Gender	Boys	152	58.078	17.129	3.42	**
	Girls	148	64.473	15.217		

**Significant at 0.01 level (Table Value=2.59)

From the above table-2 presents the variable, groups, number(No.), mean scores, standard deviation, 't' value and significance level of Science Achievement of secondary school boys and girls. It was observed that the obtained 't' value 3.42 which is higher than the table value of 2.59 (df=298) at 0.01 level and thus it is significant. Hence, the null hypothesis is **rejected** and an alternative hypothesis has been formulated that 'there is a significant difference in the Science Achievement of IX standard boys and girls students.' It was inferred that, the IX standard girls had better achievement in science when compared to boys. The comparison of Science Achievement of IX standard boys and girls are graphically presented in Fig.1.

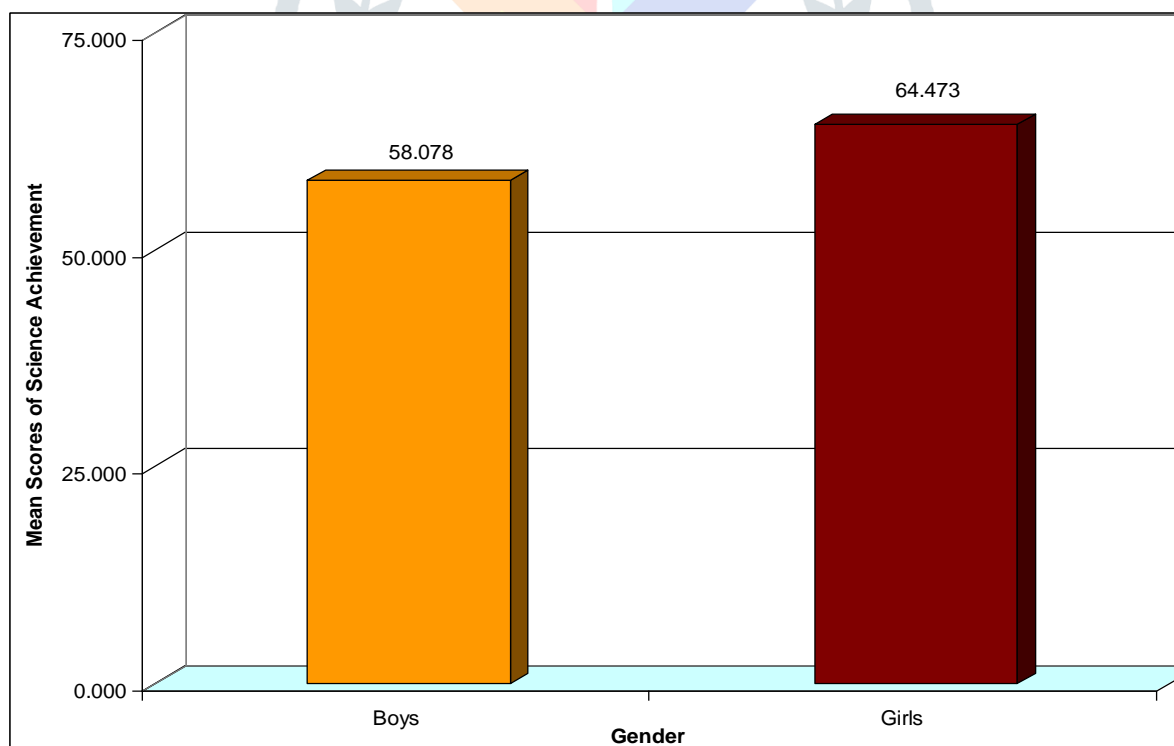


Fig.1: Bar graph showing comparison of Science Achievement of IX standard boys and girls.

VIII. RESULTS

1. There was significant positive relationship between Science Achievement and Interest in Science of IX standard students.
2. There was a significant difference in the Science Achievement of IX standard boys and girls.

IX. CONCLUSION

The correlation result shows a positive significant relationship between interest in science learning and science achievement of IX standard students. The same has proved from 't' test analysis that there was a significant difference in the Science Achievement of IX standard boys and girls. Hence, a positive interest towards science needs to be developed among students and the initiation should start from the beginning of the school education. Therefore, teachers and teacher educators need to make the students more interested in science as it is very much essential for the present-day scientific and technological world. They must use new educational tools like videos, game-like rewards and mobile apps to capture the interest of students towards science.

X. EDUCATIONAL IMPLICATIONS

- To improve science achievement and attitudes towards science at secondary education level, some potential implications are:
- Hands-on and Inquiry-based Learning: Encourage hands-on, inquiry-based learning activities that allow students to engage with science concepts and develop critical thinking skills.
- Integration of Technology: Integrate technology into science education to provide students with a dynamic and interactive learning experience.
- Collaborative Learning: Encourage students to work in groups on science projects, which can foster teamwork, communication skills, and a positive attitude towards science.
- Relevance to Real-world Applications: Connect science concepts to real-world applications, to help students understand the practical relevance of science and develop a positive attitude towards it.
- Quality Teacher Training: Provide science teachers with ongoing professional development opportunities to enhance their content knowledge and teaching skills.
- Encouragement of Innovation and Creativity: Encourage students to think creatively and innovatively in their scientific work, and provide opportunities for them to showcase their achievements.
- Adequate Resources and Support: Ensure that science teachers have access to the resources and support they need to be effective in the classroom, including instructional materials, technology, and administrative support.
- Assessment and Feedback: Regularly assess students' understanding of science concepts and provide them with constructive feedback to help them improve their understanding and skills.

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