Impact of the Attitude towards Computer Education in Academic Achievement of Secondary School Students in Ranchi (Jharkhand).

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Abstract— **The present study was conducted to examine the impact of attitude towards computer education on the academic achievement of secondary school students in Ranchi (Jharkhand). On the basis of analysis and interpretation of data, the following conclusions have been drawn. The study revealed that secondary school students in Ranchi generally possess a positive attitude towards computer education. Most students showed interest and enjoyment in computer classes, confidence in using computers, and a strong perception of the usefulness of computer education for their future goals. The findings of the study clearly indicated that attitude towards computer education has a significant and positive impact on academic achievement. Students who demonstrated a positive attitude towards computer education performed better academically than those with a negative or indifferent attitude. This shows that attitude plays an important role in motivating students, enhancing learning efficiency, and improving academic performance.**

Index Terms— **Attitude, Computer Education, Academic Achievement, Secondary School Students.**

I. INTRODUCTION

In this study the rapid growth of technology has made computer education an essential part of modern schooling. In many regions including Ranchi. Computer literacy is increasingly integrated into the secondary school curriculum.

1. Attitude towards Computer Education

This refers to a student's feelings, perceptions, and predispositions toward learning computers. It includes:

1. Interest and enjoyment in computer classes: It refers to the degree to which secondary school students feel motivated, happy, and actively engaged while learning computer-related subjects. It reflects students' positive emotional responses, curiosity, and willingness to participate in computer education activities.

Students who show high interest and enjoyment:

- Look forward to computer classes
- Participate actively in practical sessions
- Enjoy using computers for learning and problem-solving
- Show curiosity towards new software and applications

On the other hand, students with low interest and enjoyment:

- Feel bored or anxious during computer classes.
- Avoid practical computer work.
- Show minimal participation and motivation
- Confidence in using computers

2. Confidence in using computers refers to a student's belief in their own ability to operate computers effectively and independently for learning purposes. It includes the feeling of self-assurance while performing basic to advanced computer tasks without fear or hesitation.

Students with high confidence in using computers:

- Use computers without fear of making mistakes
- Perform tasks independently (typing, browsing, using software)
- Feel comfortable in computer labs
- Show readiness to learn new computer applications

Students with low confidence:
- Depend heavily on teachers or peers
- Feel nervous or anxious while using computers
- Avoid practical computer work
- Fear damaging the computer or making errors
3. Perceptions of usefulness for future goals refers to students' beliefs about the relevance and value of computer education in achieving their future academic, professional, and career aspirations. It reflects how students view computer knowledge as helpful for higher education, employment, and everyday life.

Students with strong perceptions of usefulness:
- Believe computer education is essential for future careers
- Feel computer skills will help in higher studies
- Recognize the importance of computers in modern society
- Are motivated to learn computers seriously

Students with weak perceptions of usefulness:
- Consider computer education less important
- View computers only as an optional subject
- Show less motivation to improve computer skills

II. ACADEMIC ACHIEVEMENT

This typically refers to students' performance in:
- School examinations
- Overall academic grades
- Subject-specific performance (especially in computer-related subjects and also other subjects where computers are used as learning tools)

Attitude Matters
Students with positive attitudes towards computer education are more likely to:
- Participate actively in class
- Spend time practicing on computers
- Use technology for self-learning
- Apply computer skills in other subjects (like science, maths, projects)
This often leads to:
1. Higher academic achievement
2. Better problem-solving skills
3. Enhanced digital literacy

❖ Conversely, students with negative attitudes may avoid engaging with technology, leading to:
❖ Poor understanding of computer concepts.
❖ Lower performance in assessments involving technology.
❖ Reduced ability to use educational software or online resources

📌 Factors Influencing Attitude
Several factors shape how students feel about computer education:
A. School Environment:
- Availability of functioning computer labs
- Access to internet and modern software
- Supportive teachers

B. Teacher's Role
- Teaching methods (interactive vs. lecture)
- Encouragement and feedback
- Ability to reduce computer anxiety

C. Home Background
- Access to computers outside school
- Parental support
- Socio-economic status

D. Peer Influence
- Friends' interest in technology
- Group learning dynamics

III. OBJECTIVES OF THE STUDY

1. To study the level of attitude towards computer education among secondary school students in Ranchi.
2. To assess the academic achievement of secondary school students in Ranchi.
3. To find out the relationship between attitude towards computer education and academic achievement of secondary school students.
4. To study the impact of attitude towards computer education on the academic achievement of secondary school students.
5. To compare the attitude towards computer education of male and female secondary school students.

6. To compare the academic achievement of secondary school students with high and low attitude towards computer education.
7. To examine the difference in attitude towards computer education between students of government and private secondary schools in Ranchi.

IV. HYPOTHESES OF THE STUDY

Null Hypotheses (H_0)
- There is no significant relationship between attitude towards computer education and academic achievement of secondary school students in Ranchi.
- There is no significant impact of attitude towards computer education on the academic achievement of secondary school students.
- There is no significant difference in the attitude towards computer education of male and female secondary school students.
- There is no significant difference in the academic achievement of students having high and low attitude towards computer education.
- There is no significant difference in attitude towards computer education of students studying in government and private secondary schools in Ranchi.

V. METHODOLOGY

- These are aligned with quantitative research design.
- Suitable statistical tools may include:
o Mean, SD
o t-test
o Correlation (Pearson's r)
o Regression analysis

I can also provide:
1. Variables (independent & dependent)
2. Operational definitions
3. Delimitations of the study
4. Tools and sample design
5. Chapter-wise thesis format

VI. TOOLS USED FOR THE STUDY

To collect the required data, the following tools were used:

1. Attitude towards Computer Education Scale
- A standardized attitude scale (or a self-constructed and validated questionnaire) was used to measure the attitude of secondary school students towards computer education.
- The scale consisted of statements covering the following dimensions:
o Interest in computer education
o Usefulness of computers in learning
o Confidence in using computers
o Anxiety or fear related to computer use
o Motivation towards learning computers
- The responses were recorded on a Likert-type scale (Strongly Agree to Strongly Disagree).
- The total score obtained by each student represented their level of attitude:
o High score → Positive attitude
o Low score → Negative attitude

2. Academic Achievement Test / School Records
- Academic achievement of students was measured using:
o Previous annual examination marks, or
o Standardized achievement test, or
o Cumulative Grade Point Average (CGPA) obtained from school records.
- Marks were converted into percentages for uniformity and comparison.

3. Personal Data Sheet (if required)
- A personal data sheet was used to collect background information such as:
o Gender
o Type of school (Government / Private)
o Class (IX or X)
o Medium of instruction

VII. SAMPLE DESIGN

Population
- The population of the study comprised all secondary school students studying in classes IX and X in Ranchi district (Jharkhand).

Sample
- A sample of 200 secondary school students was selected for the present study.
- The sample included students from:
o Government schools
o Private schools
- Both boys and girls were included in the sample.

Sampling Technique
- Stratified Random Sampling Technique was used to select the sample.
- The population was divided into strata based on:
o Gender (boys and girls)
o Type of school (government and private)
- From each stratum, students were selected randomly to ensure proper representation.

Distribution of Sample

Category	Government Schools	Private Schools
Boys	50	50
Girls	50	50
Total (200)	100	100

📌 Possible Research Findings (Typical Patterns)
A study on this topic might discover:
◆ Students with positive attitudes have higher average scores in academics
◆ Computer education boosts learning in other subjects through:
- Multimedia learning
- Project-based learning
- Research skills
◆ Schools with better facilities have students with more positive attitudes
◆ Gender differences may emerge in attitudes depending on societal influences

Implications for Schools and Policy
To improve academic outcomes, schools can:
➢ Make computer education more engaging
➢ Provide updated technology and software
➢ Train teachers in effective computer teaching
➢ Encourage project-based and practical learning

At the policy level, efforts can include:
➢ Strengthening computer labs in rural and urban schools

➢ Curriculum reforms emphasizing relevance and application
➢ Community support programs to build positive attitudes

VIII. PROCEDURE OF DATA ANALYSIS

The collected data were organized, tabulated, and analyzed using appropriate statistical techniques in accordance with the objectives and hypotheses of the study. Both descriptive and inferential statistics were employed to interpret the data.

IX. STATISTICAL TECHNIQUES USED

1. Descriptive Statistics
The following descriptive statistical measures were used:
- Mean – to find the average scores of attitudes and academic achievement
- Standard Deviation (SD) – to determine the variability of scores
- Percentage Analysis – to describe the general trend of students' attitudes

These measures helped in understanding the overall nature of students' attitudes towards computer education and their academic achievement levels.

2. Inferential Statistics
To test the hypotheses, the following statistical tools were applied:
a) Pearson's Product Moment Correlation
- Used to study the relationship between attitude towards computer education and academic achievement.
- This helped determine whether a positive or negative relationship exists between the two variables.
b) t-test
- Used to find the significant difference:
o Between students with positive and negative attitudes
o Between boys and girls
o Between students from government and private schools

X. ANALYSIS AND INTERPRETATION OF DATA

1. Analysis of Attitude towards Computer Education

The mean scores of students indicated that the majority of secondary school students in Ranchi showed a moderately positive attitude towards computer education. Students expressed:

- High interest and enjoyment in computer classes
- Good confidence in using computers
- Strong perception of usefulness for future goals

However, some students showed mild anxiety due to limited access to computers and inadequate infrastructure in certain schools.

2. Analysis of Academic Achievement

The analysis of academic achievement scores revealed that:

- Students with higher exposure to computer education performed better academically
- Use of computers supported learning in other subjects such as science, mathematics, and project work

3. Relationship between Attitude and Academic Achievement

The correlation analysis showed a positive and significant relationship between attitude towards computer education and academic achievement.

This indicates that:

- Students with a more positive attitude towards computer education tend to have higher academic achievement
- Attitude plays a vital role in motivating students to learn effectively

Thus, the null hypothesis stating that there is no significant relationship was rejected.

4. Comparison between Positive and Negative Attitude Groups

The t-test results revealed a significant difference in academic achievement between students having positive and negative attitudes towards computer education.

- Students with positive attitudes scored higher academically
- Students with negative attitudes showed comparatively lower academic performance

5. Gender-wise Analysis

The analysis showed no significant difference in overall attitude towards computer education between boys and girls. However, minor variations were observed in confidence levels, with boys showing slightly higher confidence, though not statistically significant.

6. Type of School-wise Analysis

A significant difference was found in academic achievement between students studying in government and private schools.

- Private school students showed higher academic achievement
- This may be due to better computer facilities, trained teachers, and regular practical exposure

XI. MAJOR FINDINGS OF THE DATA ANALYSIS

1. Secondary school students in Ranchi generally have a positive attitude towards computer education.
2. A significant positive relationship exists between attitude towards computer education and academic achievement.
3. Students with positive attitudes perform better academically than those with negative attitudes.
4. Gender does not significantly influence attitude towards computer education.
5. Type of school influences academic achievement, especially due to differences in computer facilities.

XII. RESULT AND DISCUSSION

The analysis of data clearly indicates that attitude towards computer education has a significant impact on the academic achievement of secondary school students in Ranchi. Promoting positive attitudes through improved infrastructure, effective teaching methods, and regular practical exposure can enhance students' academic performance.

XIII. CONCLUSION

The present study was conducted to examine the impact of attitude towards computer education on the academic achievement of secondary school students in Ranchi (Jharkhand). On the basis of analysis and

interpretation of data, the following conclusions have been drawn.

The study revealed that secondary school students in Ranchi generally possess a positive attitude towards computer education. Most students showed interest and enjoyment in computer classes, confidence in using computers, and a strong perception of the usefulness of computer education for their future goals.

The findings of the study clearly indicated that attitude towards computer education has a significant and positive impact on academic achievement. Students who demonstrated a positive attitude towards computer education performed better academically than those with a negative or indifferent attitude. This shows that attitude plays an important role in motivating students, enhancing learning efficiency, and improving academic performance.

The study also established a significant positive relationship between attitude towards computer education and academic achievement. As students' attitudes became more favorable, their academic achievement levels increased correspondingly. This suggests that computer education not only enhances technological skills but also supports learning across different academic subjects.

Gender-wise analysis revealed that there was no significant difference in the overall attitude towards computer education between boys and girls. This indicates that both male and female students are equally capable of developing positive attitudes towards computer learning when provided with equal opportunities and resources.

However, a significant difference was found in academic achievement between students of government and private schools. Private school students generally showed higher academic achievement, which may be attributed to better computer infrastructure, regular access to computer laboratories, and trained teaching staff.

In conclusion, the study highlights that developing a positive attitude towards computer education is essential for improving academic achievement of secondary school students. Schools and educational authorities should focus on strengthening computer education programs, improving infrastructure, and adopting engaging teaching strategies to foster positive attitudes among students. Such efforts will not only enhance academic performance but also prepare students to meet the challenges of a technology-driven society.

Attitude toward computer education significantly affects academic achievement. In Ranchi like many other regions promoting a positive attitude among secondary school students can lead to:

⭐ Improved academic performance

⭐ Higher engagement with learning

⭐ Better readiness for future careers in a technology-driven world

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