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A comprehensive study on the relationship between ICT Awareness school climate and academic achievement of senior secondary school Students

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Abstract
This study investigates the impact of ICT awareness and school climate on senior secondary school students' academic performance. The researcher collected a sample of 300 senior secondary school students studying in the Ghazipur district through the random sampling technique for this study. The ICT awareness and school climate scale constructed by the researcher was used to collect the data. Descriptive statistical techniques were used to analyze the data with the help of SPSS. The study's findings reveal that ICT awareness is consistent across various academic streams. Additionally, there is no discernible difference in the perceived school climate based on academic streams. The study also identifies the positive correlation between ICT awareness, school climate, and students' academic performance.

Keywords: ICT awareness, school climate, academic performance, positive learning environment

Introduction
In today's rapidly evolving educational landscape, integrating Information and communication technology ICT and fostering a conducive school climate have emerged as critical factors influencing students' academic achievement. ICT awareness, encompassing the understanding and utilization of digital technologies, has become an integral skill set in modern education. As technology indulges in various aspects of education, equipping students with ICT competence empowers them, prepares them for future career prospects, and shapes their learning experience. The analysis of ICTs in the education sector is closely tied to the objectives of quality, equity, and efficiency. The extent to which students are familiar with ICT and their application can significantly impact their learning style, educational content, school climate, and overall academic achievement. Simultaneously, the school climate is pivotal in shaping students' learning journeys. The school climate encompasses an educational institution's social, emotional, and psychological atmosphere. Halpin and Croft (1963) [2] describe "school climate as the social atmosphere of a setting or a learning environment that gives learners different experiences depending upon the protocols set up by teachers and administrators''. A positive school climate creates an environment characterized by a sense of safety, mutual respect, open communication, and supportive relationships. This climate nurtures students' emotional well-being and influences their motivation, engagement, and attitude toward learning. Adeogun & Olisaemeka (2011) [1] define "school climate as an aggregate measure of school characteristics such as relationship between parent, teachers, and administrators as well as physical facilities on the ground."
In the contemporary educational landscape, the fusion of technology and a conducive learning environment has become a focal point for educators, researchers, and policymakers seeking to enhance student academic performance. So, the researcher investigated the relationship between ICT awareness, school climate, and academic achievement.

Objectives of the study
1. To find the mean difference of ICT awareness of senior secondary school students in relation to stream.
2. To know the mean difference of school climate of senior secondary school students in relation to stream.

3. To know the mean difference of school climate of senior secondary school students in relation to stream.
4. To find the relation between ICT awareness and academic performance of senior secondary school students.
5. To find the relation between school climate and academic performance of senior secondary school students.

Hypotheses of the present study

1. There is no significant difference between the mean scores of ICT awareness of senior secondary school students in relation to the stream.
2. There is no significant difference between the mean scores of school climate of senior secondary school students in relation to the stream.
3. There is no significant correlation between ICT awareness and the academic performance of senior secondary school students.
4. There is no significant correlation between school climate and the academic performance of senior secondary school students.

Methodology

Sample

The researcher employed a simple random technique to gather 300 data from senior secondary school students from the Ghazipur district. The collected data can be analyzed with the help of the SPSS 20 version to draw meaningful insights and conclusions.

Tools to be used in the present study

The researcher used the following questionnaire to collect data:

1. ICT awareness tool developed and standardized by the researcher.
2. School climate scale developed and standardized by the researcher**.**
3. For Academic achievement, Class X results were considered.

Statistical techniques

The researcher utilized SPSS, an array of statistical methodologies including t-test and coefficient correlation employed to evaluate the difference in mean score for ICT awareness and school climate across various academic streams. The coefficient correlation examined the relationship between a dependent variable (academic achievement) and independent variables (ICT awareness and school climate).

Results and interpretations

Objective 1: To find the mean difference of ICT awareness of senior secondary school students in relation to stream.

Table 1: Showing the t-value of ICT awareness of senior secondary school students in relation to stream

Demographic variable	N	M	SD	t-value	Significance level at 0.05
Science	173	121.4	15.69	0.53	Not Rejected
Commerce	127	122.7	16.90		

Interpretation: The calculated t-value of 0.53 is lower than the critical value from a t-table (1.96) at a 0.05 significance level. This concludes that the hypothesis that There is no significant difference between the mean scores of ICT awareness of senior secondary school students in relation to the stream is not rejected.

Objective 2: To know the mean difference of school climate of senior secondary school students in relation to stream.

Table 2: Stream wise t-value of school climate of senior secondary school students

Demographic variable	N	M	SD	t-value	Significance level at 0.05
Science	173	152.7	12.94	1.12	Not Rejected
Commerce	127	150.3	13.48		

Interpretation: The calculated t-value of 1.12 is lower than the critical value from a t-table (1.96) at a 0.05 significance level. This concludes that the hypothesis that there is no significant difference between the mean scores of school climate of senior secondary school students in relation to the stream is not rejected.

Objective 3: To find the relation between ICT awareness and academic performance of senior secondary school students.

Table 3: The correlation coefficient between ICT awareness and academic performance of senior secondary school students.

Variables	R-value	Correlation
ICT Awareness and Academic Performance	0.214	Significant

Interpretation: Based on the information provided in the above table, it can be inferred that r- value 0.214 indicates a positive but relatively weak correlation between ICT awareness and academic performance of senior secondary school students; thus, the null hypothesis that There is no significant correlation between ICT awareness and academic performance of senior secondary school students was rejected.

Objective 4: To find the relation between school climate and academic performance of senior secondary school students

Table 4: The correlation coefficient between school climate and academic performance of senior secondary school students.

Variables	R-value	Correlation
School Climate and Academic Performance	0.180	Significant

Interpretation: Based on the information provided in the above table, it can be inferred that r- value 0.180 indicates a positive but relatively weak correlation between school climate and academic achievement of senior secondary school students; thus, the null hypothesis that There is no significant correlation between school climate and academic performance of senior secondary school students was rejected.

Discussion

The research indicates that science and commerce senior secondary school students have no difference in ICT

awareness. These findings correspond with the conclusion drawn by Mohammad and Prema (2017) [8]. The study also emphasizes that science and commerce students have the same perception about school climate. Furthermore, the investigation reveals a constructive correlation between ICT awareness and academic performance; other studies support this result: Erdogdu and Erdogdu (2015) [7], Das and Kumar (2019) [4], and Dodmani (2019) [5]. Similarly, the current study shows that there is a significant and positive relationship between school climate and academic performance. The outcome resonates with the research conducted by Greenway (2017) [6] and Pobbi, Kor and Opare (2018) [9], showing a positive and significant relationship between school climate and academic achievement.

Findings of the study

1. ICT awareness is similar in senior secondary school students in relation to their different academic streams.
2. There is no difference in the school climate of senior secondary school students in relation to their academic stream.
3. A positive yet modest correlation exists between ICT awareness and academic achievement.
4. A favorable correlation between school climate and academic achievement of senior secondary school students is positive.

The implication of the study

- **For teachers:** This study will make them more concerned about the level of their students' awareness of ICT. The teacher should increase their effort towards encouraging their students to use ICT in their learning and try to maintain a conducive school climate for all the students.
- **For students:** To be aware and use various educational software and ICT tools useful for education to support their learning process.
- **For Administrators:** They start to fulfill the digital resource requirements in their class and laboratory with expert and trained educators and administrative efforts to foster a favorable and supportive atmosphere within the school premises.

Conclusion

In conclusion, the findings suggest that senior secondary school students exhibit comparable levels of ICT awareness regardless of their academic streams. Furthermore, there is no noticeable differentiation in the school climate experienced by the students based on their academic streams. The study also reveals a positive but relatively weak correlation between ICT awareness, School climate, and academic achievement among senior secondary school students. These insights shed light on the interconnectedness of ICT awareness, school climate, and academic performance and highlight areas where further exploration and intervention could benefit educational institutions.

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