

A Study of Certain Demographic and Institutional Factors in relation to Academic Achievement of Senior Secondary School Students

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Abstract

Academic achievement implies the level of proficiency attained in scholastic or academic work over a period of time. Academic achievement holds an important position in the life of an individual as it guides them towards choosing their career and ultimately leads a successful life. The present study was conducted to explore the difference in academic achievement of senior secondary school students in relation to type of school (government and private), locale (rural and urban) and academic stream (science and humanities). A sample of 241 senior secondary school students from various schools of Purulia district of West Bengal was selected. Previous class academic records i.e., class 10th marks were used for measuring the academic achievement of senior secondary school students. The statistical techniques utilized in the present study were mean, standard deviation and t-test. Results revealed a significant difference in the academic achievement of senior secondary school students in relation to type of school. Private senior secondary school students had more academic achievement in comparison to their counterparts. Besides, significant difference was found in the academic achievement of senior secondary school students in relation to their locale. Students studying in urban schools had more academic achievement than students studying in rural schools. Similarly, a significant difference is observed in the academic achievement of senior secondary school students in relation to their academic stream. Students from science stream had more academic achievement than students from humanities stream.

Keywords: *Academic achievement, Academic stream, Type of school, Locale, Senior secondary school students.*

Introduction

Academic achievement denotes academic outcomes that indicate the extent to which a student has achieved his/her learning goals. The importance of academic achievement can be understood more significantly in present socio economic and cultural context. In school,

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great emphasis is placed on achievement right from the beginning of formal education. The school promotes a systematic hierarchy which values academic achievement of the learners more than their qualitative improvement. In fact, the very act of selection and differentiation of students performed by school is done on the basis of student's scholastic attainments which in terms open up myriad avenues of success, again, chiefly in terms of achievement. The students at school are trained to accept the hierarchy based on achievement. Moreover, Academic achievement plays a key role in deciding the students' future in academics. The importance of academic achievement cannot be ignored as it is the key criterion of promotion to higher classes, selection in various examinations, getting recognition (for example, scholarships on the basis of academic achievement). It is the basis on which senior secondary school students get selected in higher education institutes and eventually secure better jobs. Academic achievement is regarded as one of the key indicators of success and effectiveness of teachers (Anticevic et al., 2017).

Understanding its importance, educationists, policy formulators and scholars in India and abroad regularly monitors the levels of academic achievement by conducting achievement tests to explore the issues that are associated with academic achievement and the ways in which learning can be made more interesting and effective. Unfortunately, in the recent years various studies and surveys have shown that India lags behind in the spectrum of academic achievement. According to the Annual Status of Education Report (ASER), 2021, in the states of West Bengal, Chhattisgarh and Karnataka, their condition is very critical and there has been a learning crisis in these states. For West Bengal, the report notes that the proportion of children enrolled in class I in government schools who can read letters of the alphabet and more has decreased by 7 percent points since 2018 and is now below 2014 levels (Rai & Pandey, 2022). Similarly, the results of National Achievement Survey (NAS) 2021 released by the Ministry of Education (MoE) indicates that the learning levels of school students in almost all subjects have dropped significantly as they progress to higher classes. Besides, the survey further reveals that the average performance in schools in rural areas remains 'significantly below' than those of urban areas in same states (Ifikhar, 2022).

In view of its importance and relevance, academic achievement has become a growing concern of many concerned in the process of education. In fact, the importance of academic achievement in the present age of competition has raised several questions for education researchers. What are the major factors that promote achievement in students? How far do the different factors contribute toward academic achievement of a learner? etc.

Academic achievement of students is affected by several factors including institutional, demographical, psychological and sociological factors (Karemera, 2003; El-Shaarawi, 2006). In this study, the researcher has used high school marks of class 11th students as their academic achievement scores as several studies had revealed that high school marks were the best predictor of the success of students in comparison to standardized achievement tests (Hoffman, 2002).

Objectives of the Present Study

1. To study the level of academic achievement of senior secondary school students.
2. To compare the mean scores of academic achievement of government and private senior secondary school students.
3. To compare the mean scores of academic achievement of urban and rural senior secondary school students.
4. To compare the mean scores of academic achievement of senior secondary school students studying in science and humanities stream.

Hypotheses of the Study

- H₀1** There is no statistical significant difference in the mean scores of academic achievement of government and private senior secondary school students.
- H₀2** There is no statistical significant difference in the mean scores of academic achievement of urban and rural senior secondary school students.
- H₀3** There is no statistical significant difference in the mean scores of academic achievement of senior secondary school students studying in science and humanities stream.

Methodology

- **Design:** The present study was a descriptive survey in nature for which senior secondary school students were considered as the population for the study.
- **Sample:** For the present study, the sample consisted of 241 senior secondary school students of Purulia district of West Bengal, India.
- **Research Tool Used:** For data collection, previous year class records, i.e., class 10th (Board Examination) results of class 11th students have been used.
- **Statistical Techniques Used:** For breaking down the data into meaningful results proper statistical techniques were utilized i.e., mean, standard deviation and t-test. Statistical Package for Social Sciences (SPSS) version 26.0 was utilized to analyze the data in the study.

Normality of the Data

Table 1: Descriptive Measures to know the Normal Distribution of Academic Achievement Scores

N	Mean	SD	Std. Error of Mean	Sk	Std. Error of Sk	Z-value of Sk	Ku	Std. Error of Ku	Z-value of Ku
241	74.1	8.2	0.528	0.36	0.157	2.28	-0.088	0.312	0.282

The data were normally distributed as z-value of skewness (Sk) and kurtosis (Ku) of academic achievement of senior secondary school students were 2.28 and 0.282 respectively

which suggest that these values are neither below -2.58 nor the above of +2.58. (Ghasemi & Zahediasl, 2012).

Analysis, Interpretation and Discussion

Appropriate analysis along with its interpretation and discussion is presented as follows:

Objective 1: To study the level of academic achievement of senior secondary school students.

As it is descriptive analysis, null hypothesis is not formed by the researcher. In order to know the level of academic achievement of senior secondary school students, fundamental statistical measures have been assessed.

Table2: Showing Percentage of Senior Secondary School Students falling under Different Levels of Academic Achievement

Total Sample of Senior Secondary School Students	N	High (80 & Above)	Average (79-60)	Low (59 & Below)
	241	55 (22.82%)	179 (74.27)	7 (2.9%)

Table 2 shows majority (74.27%) of the senior secondary school students have average (79-60) academic achievement and a few senior secondary school students (22.82%) have high (80 & above) and low (2.90%) academic achievement.

Objective 2: To compare the mean scores of academic achievement of government and private senior secondary school students.

Null Hypothesis 1: There is no statistical significant difference in the mean scores of academic achievement of government and private senior secondary school students.

Table 3: Showing Difference in Academic Achievement in terms of Type of School

Variable	Groups	N	Mean	SD	SEM	df	t	d	Sig
Academic Achievement t	Govt.	122	68.99	6.08	0.55	239	-12.62	1.63	0.001<0.01
	Private	119	79.34	6.64	0.608				

The result (table 3) indicates that there is a significant difference in the academic achievement of the two groups, $t(239) = -12.624$, $p\text{-value} = 0.001 < 0.01$ is significant at 0.01 level of significance. The present result argues that the private senior secondary school students ($M = 79.34$, $SD = 6.637$) are significantly higher in the academic achievement than the government senior secondary school students ($M = 68.99$, $SD = 6.077$). Here the value of effect size ($d = 1.626$) suggests that the value of d is higher than 1.4 which indicates a large effect size. Thus, type of school has a significantly large effect on academic achievement. Therefore, null hypothesis (H_0) is rejected.

The present finding is in consonance with the findings reported by Cansiz, Ozbaylanli and Colakoglu (2019) who revealed that school type has comparatively large effect on the academic achievement of the learners. Similar results were found by Okon and Archibong (2015) which revealed that students in private secondary schools performed better in social studies than those in public schools.

The cause behind this disparity might be the attitude of government teachers who are teaching in government schools. They may be thinking that no one can expel them even if the results are not good. On the other hand, the teachers in private schools may be thinking that if their results are not good, they may be expelled or they may be thinking that their schools may not work or may not continue to exist if their results are not good. The other reason might be that the maximum posts are vacant in government schools where teachers are being engaged on academic arrangement, getting low salary as compared to their counterparts who are permanent. This might be compelling the teachers to carry their jobs easily and may result in poor academic achievements of students.

Objective 3: To compare the mean scores of academic achievement of urban and rural senior secondary school students.

Null Hypothesis 2: There is no statistical significant difference in the mean scores of academic achievement of urban and rural senior secondary school students.

Table 4: Showing Difference in Academic Achievement in terms of Locale

Variable	Groups	N	Mean	SD	SEM	df	t	d	Sig
Academic Achievement	Urban	119	79.34	6.64	0.608	239	12.62	1.63	0.001<0.01
	Rural	122	68.99	6.08	0.55				

The results (table 4) indicates that there is a significant difference in the academic achievement of the two groups, $t(239) = 12.624$, $p\text{-value} = 0.001 < 0.01$ is significant at 0.01 level of significance. The present result argues that the urban senior secondary school students ($M=79.34$, $SD= 6.637$) are significantly higher in the academic achievement than the rural senior secondary school students ($M=68.99$, $SD=6.077$). Here the value of effect size ($d= 1.626$) suggests that the value of d is higher than 1.4 which indicates a large effect size. Thus, locale has a significantly large effect on academic achievement. Therefore, null hypothesis (H_0) is rejected.

The present study is in consonance with the findings reported by Zhao (2020); Opoku-Asare and Siaw (2015); Faisal, Shinwari and Mateen (2016) and Ajai and Imoko (2013) who revealed that locale has a significantly large effect on academic achievement of the learners.

Results may be justified on the grounds that urban senior secondary school students have educated and aware parents who provide the necessary support towards their education.

In urban households, students get the necessary resources to excel in their studies. In rural households, students are often engaged in household work or in activities that will provide food to their families. Also, the lack of facilities in school and unavailability of teachers affects the education of the rural learners.

Objective 4: To compare the mean scores of academic achievement of senior secondary school students studying in science and humanities stream.

Null Hypothesis 3: There is no statistical significant difference in the mean scores of academic achievement of senior secondary school students studying in science and humanities stream.

Table 5: Showing Difference in Academic Achievement in terms of Academic Stream

Variable	Groups	N	Mean	SD	SEM	df	t	d	Sig
Academic Achievement	Science	114	80.39	6.31	0.591	239	16.44	2.11	0.001<0.01
	Humanities	127	68.46	4.93	0.437				

The result (table 5) indicates that there is a significant difference in the academic achievement of the two groups, $t(239) = 16.435$, $p\text{-value} = 0.001 < 0.01$ is significant at 0.01 level of significance. The present result argues that the senior secondary school students of science stream ($M=80.39$, $SD=6.314$) are significantly higher in academic achievement than the senior secondary school students of humanities stream ($M=68.46$, $SD=4.928$). Here the value of the effect size ($d= 2.106$) suggests that the value of d is higher than 1.4 which indicates a large effect size. Thus, academic stream has a significantly large effect on academic achievement. Therefore, null hypothesis (H_0) is rejected.

The results may be justified on the grounds that students from science stream develop the skills of scientific thinking which includes asking questions, formulating hypotheses, testing hypotheses, making observations, recognizing patterns and making references (Kuhn, 2002), which is lacking among the students of humanities stream as the habit of critical thinking is rarely exercised in humanities subjects. Besides, students from science stream develop skepticism as a process of learning and thus determine the truth value of claims according to the level of evidence. Besides, there are differences in the marking scheme for subjects in science and humanities stream, as students in subjects of science stream get step marking, but in humanities subjects the mark is given on the basis of whether an idea has been properly explained or not.

Findings of the Present Study

1. Out of 241 senior secondary school students selected for the study
 - 22.82% (55) senior secondary school students had high academic achievement.
 - 74.27% (179) senior secondary school students had moderate academic achievement.
 - 2.90% (7) senior secondary school students had low academic achievement.

2. Significant difference was found between government and private senior secondary school students. Private senior secondary school students had more academic achievement than government senior secondary school students.
3. Significant difference was found between urban and rural senior secondary school students. Urban senior secondary school students had more academic achievement than rural senior secondary school students.
4. Significant difference was found between senior secondary school students from science and humanities stream. Senior secondary school students of science stream had more academic achievement than senior secondary school students of humanities stream.

Educational Implications of the Study

This study will be helpful for teachers, school administrators, policymakers, parents, educationists and other stakeholders to understand the various factors related to the academic achievement of senior secondary school students. Necessary actions may be taken up to improve the academic achievement of slow learners. It is crucial that the factors that impact the academic achievement of the learners should be thoroughly studied and necessary changes should be made to improve the academic performance of the learners. Conducive school environment significantly affects the academic performance of the learners and it is the responsibility of the teachers and administrators to provide suitable school environment to the learners so that they can explore their potential to the fullest. Parental support plays an important role in the academic achievement of the learners. Parents can be guided to encourage and appreciate their children's efforts so that they get motivated to perform well in academics. Teachers should be trained to apply suitable teacher techniques so that they can transact the lessons in an interesting way keeping in mind the pace and level of understanding of the learners.

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