



Academic Achievement of Higher Secondary Science Students in Mizoram in Relation to Gender and School Management Type

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ABSTRACT

This study examines the academic achievement of higher secondary science students in Mizoram, focusing on overall performance levels and variations within gender and school management types (government, private and deficit). Using a descriptive survey method, data were collected from students' final examination results on the Higher Secondary School Leaving Certificate (HSSLC) examination. Findings revealed that most students fall within the average range, with minimal gender differences where male and female students both shared common levels i.e. average level where very little numbers of students achieving high and low levels among both groups. However, there existed different levels of academic achievement when analysis was done on different school types; deficit schools showed the highest proportion of students who achieved high level, government schools ranked second and private schools had the largest proportion of students who achieved low level of academic achievement. The results suggested that quality teaching, adequate infrastructure, favorable student-teacher ratios and regular co-curricular activities contributed significantly to academic success.

Keywords: *Academic achievement, Science students, Gender, School management type.*

1. Introduction

Academic achievement is the extent to which a student, teacher or institution has attained their short or long-term educational goals (Tadese et al., 2022). Lent et al. (2000) states that academic achievement refers to a person's performance in completing learning task successfully. Academic achievement is one of the most important markers of students' learning outcomes and is used to assess effectiveness of educational system. In the context of higher secondary scientific education, performance reflects not only the learning of daily lesson and syllabus but also the development of analytical and problem-solving skills required for further study and future employment. Understanding the distribution of success levels among children gives useful information for curriculum design, teaching methods and policy initiatives. This study examined the academic achievement of higher secondary science students in Mizoram, with specific focus on the overall achievement levels, gender differences and variations across different types of school management (government, private and deficit).

2. Rationale of the study

Science education is critical for the students in developing inquiry based thinking, creativity and the ability to apply knowledge in real world circumstances. Science as a subject forms the backbone of modern technological advancement and is integral to the development of 21st century skills such as critical thinking, innovation and scientific literacy. For students at the higher secondary level, achievement in science is not only an academic milestone but also a determinant of access to future educational and career pathways. While Mizoram has witnessed encouraging growth in science enrolment, academic achievement remains a central concern. The persistent decline in students' performance continues to be a matter of serious concern. This study intends to discover patterns in the accomplishment levels of science students across different groups in order to suggest targeted interventions. It also aims to expose potential differences across genders and school management types, in hoping to provide evidence based suggestions for improving educational methods and closing achievement gaps.

3. Review of related literature

Ong et al. (2010) examined factors associated with poor academic achievement among urban primary school children in Malaysia and found that 14% of eligible children had poor academic achievement. The result also showed that cognitive ability, gender, prematurity and social factors were found to be associated with students' academic achievement.

Beena and Bhogle (2013) investigated academic achievement and gender differences on learning and study strategies and found that there was no significant gender difference on academic achievement of students.

Subramanian (2016) assessed time management and academic achievement of higher secondary school students and found no significant difference between male and female students in academic achievement. There was significant difference in the academic achievement of government, government-aided and private school students where private school students have better academic achievement than government and aided school students.

Owan et al. (2018) did a research on the problems of school management and students' academic performance in secondary schools students and the findings revealed that the academic performance was high. The disciplinary control, classroom management, and teachers' motivation were found to significantly influence academic performance of the students.

Panda (2018) studies the relationship between academic achievement and school intervention of class X school student where the marks scored by the students in the last annual examination were employed as academic achievement. The findings revealed that all categories of schools differ significantly from one another with regards to academic achievement of students. The academic achievement of non-government school students is higher than students of government schools and schools managed by ST & SC development department.

Sharma (2021) conducted a study on the academic achievement of senior secondary school students in relation to different variables. The findings revealed that there was no significant difference between male and female students but significant difference was found in the academic achievement of students in relation to stream of study.

Raj & Tamizhselvan (2022) examined the academic achievement of high school students and found that the entire sample of students of high schools have moderate academic achievement. It was also found that there is no significant difference between male and female students as well as between government and private school students in their academic achievement.

Kusum (2023) studies the academic performance among senior secondary science and found that significant difference was found among various groups where private school students have better academic performance than government school students and female students did better than male students.

4. Objectives of the study

- To determine the overall level of academic achievement of higher secondary science students in Mizoram.
- To examine the level of academic achievement of higher secondary science students with respect to gender.
- To examine the level of academic achievement of higher secondary science students with respect to type of school management.

5. Methodology

Research Design: The study employed the descriptive survey method to investigate the academic achievement levels of higher secondary science students in Mizoram.

Population and sample: The population comprised all science stream students enrolled in higher secondary schools in Mizoram who appeared for the Higher Secondary School Leaving Certificate (HSSLC) Examination conducted by the Mizoram Board of School Education (MBSE). The sample size was determined using Yamane's formula and a total of 369 students were selected as the sample for the study.

Data Collection: Data were collected from the official HSSLC examination results obtained from the Mizoram Board of School Education (MBSE). The total marks obtained by the students were subsequently categorized into three achievement levels: high, average and low.

Data Analysis: The collected data were analyzed using percentage distribution to determine the proportion of students falling into each academic achievement category.

6. Findings of the study

6.1 Overall level of academic achievement of science students of higher secondary schools in Mizoram.

The overall level of academic achievement of science students of higher secondary schools in Mizoram is presented in the following table.

Table 1

Overall level of academic achievement of science students of higher secondary schools in Mizoram.

Level of academic achievement	No. of students	Percentage
High	37	10.03%
Average	289	78.32%
Low	43	11.65%
Total	369	100%

The above table depicts that out of the 369 students, 10.03% achieved a high level of academic achievement, 78.32% were in the average category and 11.65% had low academic achievement.

6.2 Level of academic achievement of science students of higher secondary schools in Mizoram in relation to gender.

The distribution of academic achievement level of male and female students is presented in the following table.

Table 2

Level of academic achievement of male and female science students of higher secondary schools in Mizoram.

Level of academic achievement	Male	Percentage	Female	Percentage
High	13	10.24%	24	9.92%
Average	97	76.38%	192	79.34%
Low	17	13.39%	26	10.74%
Total	127	100%	242	100%

The above table shows that among male students, 10.24% achieved a high level, 76.38% were average achievers and 13.39% were low achievers. Among female students, 9.92% attained a high level, 79.34% were average achievers and 10.74% were low achievers.

6.3 Level of academic achievement of science students of higher secondary schools in Mizoram in relation to type of school management.

Level of academic achievement	Government	Percentage	Private	Percentage	Deficit	Percentage
High	16	13.11%	5	3.50%	16	15.38%
Average	96	78.69%	108	75.52%	85	81.73%
Low	10	8.20%	30	20.98%	3	2.88%
Total	122	100%	143	100%	104	100%

The above table reveals that among government school students, 13.11% scored high level of academic achievement, 78.69% were in average range and 8.20% achieved low category. Among private school students, 3.50% scored high level of academic achievement, 75.52% were in average category and 20.98% scored low level. Regarding deficit schools, 15.38% scored high level, 81.73% achieved average level and 2.88% fall in the low category.

7. Discussion

The findings show that the majority of science students of higher secondary schools in Mizoram had average academic achievement, with a few numbers obtaining high achievement. Analysis based on gender indicated that male and female students performed almost similarly. However, differences were more visible among school management types, with deficit school students exhibiting somewhat larger proportions of high achievement and private school students having higher proportions of low achievement. This indicates that, although the overall average achievement was similar across different types of school management, the highest proportion of high achievers was observed among deficit school students, the highest proportion of low achievers occurred among private school students and government school students ranked in between.

In Mizoram's higher secondary science education, the stronger results in deficit schools could be due to several factors; they often have well-qualified and experienced teachers, better infrastructure such as laboratories, libraries and spacious classrooms and a regular schedule of co-curricular activities that were included into the daily curriculum. These activities, along with a satisfactory student-teacher ratio, can create a more engaging and supportive learning environment. Government schools also performed reasonably satisfactory, possibly because of stable teaching staff and adequate facilities, though not always at the same level as deficit schools. Private schools, however, may put a lot of emphasis on exam preparation but sometimes lack enough well-trained teachers, adequate facilities and balanced student-teacher ratios. This could limit students' opportunities to learn in a more hands-on

and personalized way that results in overall low performance. Overall, the findings suggest that good teaching, proper infrastructure, healthy student-teacher ratios and enriching daily activities play a big role in student success. Schools that are behind in these areas may benefit from targeted improvements.

8. Conclusion

The present study examined the academic achievement of higher secondary science students in Mizoram, with a focus on differences in relation to gender and school management type. The findings revealed that the majority of students, regardless of gender or the type of school they attend, fall within the average range of academic achievement, with only a few excelling or performing poorly. Notably, deficit school students demonstrated the highest performance, followed by government and private school students. Overall, the results suggest that good teaching, strong infrastructure, healthy student-teacher ratios and engaging regular co-curricular activities can make a big difference in students' success.

9. References

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