



## The Role of School Environment on the Academic Achievement of Science Students

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### ABSTRACT

The purpose of the study was to ascertain the role of school environment on the academic achievement of science students. Objectives of the study were to determine the role of school environment in the academic achievement of sciences students, to find out the impact of school physical facilities on the academic achievements. Null hypotheses were formulated which were tested on the basis of study results. Principal and science teachers of secondary school science students constituted population of the study. A total sample of eighty which includes 40 heads and 46 science teachers constituted sample of the study. Data were collected through two separate questionnaires and was analyzed through chi-Square. Findings of the study were that school environment has a significant role, teachers and students follow school discipline, and teachers are not frequently using teaching aids and science laboratories. School heads and teachers were strongly recommended to make induction to develop and maintain school environment and to provide opportunities to use science laboratories and teaching aids for teaching so that students' achievement could be improved.

**KEY WORDS:** Child physique, academic achievement, science education

### INTRODUCTION

School atmosphere includes all the things, forces and circumstances in the school which influence the child's physique, intellect and emotions. School environment affects all the aspects of school and students such as building, size, location, playgrounds for co-curricular and recreational activities, laboratory and library facilities available in the vicinity of school. Students of different backgrounds affect them differently. Among all these effects school environment may have on the child, academic achievement was of them and will be the main target of the study.

Nazir and Mattoo examined the impact of school environment on academic achievement among young students. Results of the study favour girls students whose performance were outstanding. Particularly the students of private schools have performed better than the public sector students. The study concluded that school environment has close relations with the academic achievement. [1]

The effects of school environment had a close co-relation with students achievement. Study illustrate that beside school environment there are numerous factors that affects students performances which includes home environment, social interactions, friends influences and physical facilities at home and school affects their academic achievement[2].

Surapuramath studied on the mutual relations of school climate and the academic achievement in the subject of mathematics. He found high co-relation between school climate and students achievement [3]. It was further assessed that the performances of female students were better than male students. Barry in his Master research studies on the topic of "the effects of socio-economics on academic achievements" studied school environment. School environment is the strongest factor among all the factors effecting the academic achievements [4]. The composition, structure and climate of school are responsible for the overall development of students. The parameters of school are highly effect the learning of students. The structure of school and the size of class are the most important aspects of school composition. Public sector schools have less funds and less resources as compared to private sector schools. The class size are minimum in private sector schools which increase the time factor of students teachers interactions and guiding of students.

Eaman and Keegan was of the view that school, neighborhood and parenting styles influence the academic achievement of students. Apart from these school environment is the most influential factor which significantly contribute to students performances [5]. Actually school environment is the name of school building, physical facilities and the interpersonal relations of students and teachers. The more the students trust their teachers the more they are motivated to school and learning. In some other words School Environment is the combination of all

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things surrounding. It varies from place to place. It is the most important element of human life. Human life is greatly affected by the environment where the individual lives. There are two aspects of environment one aspect is tangible while the second aspects is intangible. The tangible aspect of environment is made of all things, objects and all those materials that can be seen and touched. While the intangible aspects of environment are the relations of human beings and other things like the climate, the weather, and the attitudes towards each other and to work. The racial similarities has further contribution to the academic achievements of students. The raical case is very strong in the case of minortires. In some other words school polices and plans demonstrates the school atmosphere. There is close and strong relationship between school environment and students' achievements. The administration, physical facilities, and psychological atmosphere affect students' academic achievement.

**Statement of the Problem**

The study focused the role of school environment on the academic achievement of science students. The study also assessed physical facilities and school atmosphere and its different aspect.

**Objectives of the Study**

Important objectives of the study were;

1. To assess the role of school environment in the academic achievement of science students.
2. To find out the impact of school physical facilities on the academic achievements of sciences students.
3. Compare the school the environment and physical facilities of public and private schools.

**Hypotheses**

To investigate the above objectives following hypotheses were made;

1. There is no significant role of school environment in the academic achievement of science students.
2. There is no significant impact of school physical facilities on the academic achievements of sciences students.
3. There is no significant difference between environment and physical facilities of public and private schools.

**METHOD AND PROCEDURES**

The study was descriptive in nature. A survey was carried out for data collection. The center of attention of the study was school environment and science students' academic achievement. Secondary school science teachers and heads were the population of the study.

**Population**

All public and private secondary schools of district Mardan constituted the population of the study. The study includes heads and science teachers of these schools.

**Sample**

Forty Schools were selected through non-probability sampling techniques; all heads of the selected schools were the part of the study, while for science teacher simple random sampling techniques were used.

**Data Collection and Analysis Instruments**

For data collection two separate questionnaires were developed one for Heads while the second one for science teachers of the secondary school. Both questionnaires were on likert scale, the respondents were give five options for each item. These instruments were administered to selected sample group. The collected data were analyzed through chi-Square.

**RESULTS OF THE STUDY**

**A. School Environment**

**Table 1: There is a congenial atmosphere in school.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	1	0	4	28	3	7.912	0.095
Science Teacher	1	6	3	30	10		
Total	2	6	7	58	13		

df = 4 not significant at 0.05 level

Table 1 depicts that calculated value of  $\chi^2$  is less than the tabulated value at 0.05 level and hence not significant. Teachers opined that they need a long duration to complete the course work and the overall environment is pleasant in school in which students take more interest in learning activities.

The results of public and private schools rejected the null hypothesis that there is no significant role of school environment on the academic achievement. Therefore to sum up, there is significant role of school environment on students' academic achievement.

**Table 2: School discipline, Teachers' efforts**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	1	3	0	27	5	45.756*	0.000
Science Teacher	14	26	2	8	0		
Total	15	29	2	35	5		

df = 4 \*significant at 0.05 level

Table 2 depicts that calculated value of  $\chi^2$  is more than the tabulated value at 0.05 level and hence significant. Majority of teachers work hard to achieve the desired result in the sense of students' achievement. The students also work hard to get the better results in the science subjects. Further more teachers and students cares for school discipline.

**B. Students Interest and Availability of Material**

**Table 3: Classrooms are well furnished for maintaining students' interest.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	0	7	0	16	13	6.847*	0.033
Science Teacher	0	8	0	35	7		
Total	0	15	0	51	20		

df = 2, \*significant at 0.05 level

Table 3 show that calculated value of  $\chi^2$  is greater than the tabulated value, depicting that classrooms are conducive to maintained students interests in learning. Further majority of heads and science teachers opined that the class-rooms are well decorated with different charts and models which help in creating conducive environment which in turn enhance and maximize the learning of the students.

**Table 4: Teachers and students feel comfortable in the school furniture.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	2	8	1	17	8	4.039	0.401
Science Teacher	1	6	3	32	8		
Total	3	14	4	49	16		

df = 4, not significant at 0.05 level

Table 4 depicts that the  $\chi^2$  is not significant at 0.05 levels. It shows that teachers and students are not satisfied with school furniture. Furthermore both heads and teachers viewed that furniture is not available and if available, is of poor quality and uncomfortable.

**Table 5: Playground for students' games in school**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	12	9	2	6	7	35.39*	0.000
Science Teacher	0	3	1	35	11		
Total	12	12	3	41	18		

df = 4, \*significant at 0.05 level

Table 5 shows that value of  $\chi^2$  is more than tabulated value and is significant at 0.05 level. Majority of school teachers and supporting staff favors the presence of playground to maintain students' interest in school. Majority of the respondents responds that sufficient space is available for recreational activities and also grounds are present in almost all institutions. In this way majority of Heads and teachers focus on the importance of co-curricular activities.

**Table 6: Science laboratory is rich enough and comfortable for students.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	5	6	0	18	7	9.12	0.058
Science Teacher	1	5	1	22	21		
Total	6	11	1	40	28		

df = 4, not significant at 0.05 level

Table 6 shows that calculated value  $\chi^2$  is less than tabulated value and not significant at 0.05 level. Science laboratories are almost present in all institutions but are not utilized properly. Furthermore these are not comfortable to students and teachers.

**Table 7: Video equipment, tapes, films are readily available accessible but teachers are just killing the time.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	5	23	2	4	2	5.891	0.207
Science Teacher	15	21	1	9	4		
Total	20	44	3	13	6		

df = 4 not significant at 0.05 level

Table 7 depicts that calculated value of  $\chi^2$  is less than the tabulated value at 0.05 level and hence not significant. It shows that either the instructional material such that video film is not available or the teachers are unable to use these helping aids. In this way they cannot take advantage from these during teaching learning process and just use them to kill the time and not avail any advantage from these equipments.

**Table 8: Teaching kits are important for teaching learning process and heads are satisfied from teaching of Science teachers.**

Respondent	SDA	DA	UD	A	SA	$\chi^2$	Sig
HM	0	0	2	21	13	10.046*	0.007
Science Teacher	0	0	0	16	34		
Total	0	0	2	37	47		

df = 2 \* significant at 0.05 level

Table 8 depicts that calculated value of  $\chi^2$  is more than the tabulated value at 0.05 level and hence significant. Teaching kits are important in maximizing the learning of the students especially in science subjects. Teachers make a lot of hard work in developing the scientific attitude of the students and majority of heads are satisfied with the struggle of science teachers and performance of the students in science subjects.

**Results of Public schools**

$$\bar{X} = \frac{\sum x}{n} = \frac{1817}{20}, \frac{1227.08}{20}, \frac{1586.85}{20}$$

$$\bar{X} = 90.85\%, 61.35\%, 79.30\%$$

The above table showed that public school students illustrated 90.85%, 61.35% and 79.30% percent results in 2010, 2011, 2012 respectively. There is flux and reflux in the achievement of public school students.

**Result of Private Schools**

$$\bar{X} = \frac{\sum x}{n} = \frac{1727}{20}, \frac{1860.57}{20}, \frac{1836.31}{20}$$

$$\bar{X} = 86.35\%, 93.12\%, 91.81\%$$

Results of the above table revealed that the students of private schools showed 86.35%, 93.12%, 91.81% in the annual examination of 2010, 2011 and 2012.

**Findings**

Important findings on the basis of the above analysis of the collected data were;

1. School environment has significant role in the academic achievement of students.
2. Majority of the respondents agreed with the statement that teachers work hard to accomplish desired outcomes, they were also of the view that teachers and students follow school discipline.

3. Majority of heads and science teachers opined that the class-rooms are well decorated with different charts and models which help in creating conducive environment which in turn enhance and maximize the learning of the students.
4. Teachers and students are not satisfied with school furniture. Furthermore both heads and teachers viewed that furniture is not available and if available, is of poor quality and uncomfortable.
5. Science laboratories are almost present in all institutions but are not utilized properly. Furthermore these are not comfortable to students and teachers.
6. A shortage of teaching aids was found. Majority of the respondents were agreed that teachers are not using teaching aids.

### **Recommendations**

On the basis of above findings the researcher states following recommendations;

1. School environment has significant role in the academic achievement of students. It motivated or fed up students from education. It provides foundation to the holistic development of students or can stop it completely. It is therefore recommended that students should be provided highly congenial learning atmosphere so that their holistic development could be attained.
2. Teachers' hard work and care for school discipline contribute to students' achievement. They are the role model for students. It is therefore strongly recommended that to maintain school discipline teachers should follow which will help to incline the students for following school discipline.
3. Well decorated and equipped classrooms are the essence of students' interest. These classrooms are the source to enlighten students with high level teaching. Therefore it is recommended that students classrooms particularly science laboratories should be made enough rich and well organized for the purpose to lead the educational process in a harmonized way.
4. Teaching is difficult and bored when the uses of teaching aids are not frequent. These are the teaching use of teaching aids which make the teaching learning process affective and interesting. Teaching of science subjects needs more frequent use of these teaching aids as it is difficult to understand different concepts of science subjects. Therefore it is strongly recommended that schools where laboratory materials are not available should be provide as soon as possible and teachers should frequently used these materials and students should also be allowed to use laboratories frequently, so that their achievement could be improved.

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