
A STUDY OF ACADEMIC ACHIEVEMENT IN SCIENCE AMONG HIGHER SECONDARY STUDENTS IN RELATION TO HOME ENVIRONMENT

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Abstract:

The present study tried to investigate the relationship between academic achievement in Science and home environment of Higher Secondary students in East Singhbhum district. The researcher adopted descriptive survey method and a sample of 500 students was taken by stratified random sampling method. Tools for data collection were the Science Achievement test by R. D. Singh and Home Environment Scale by Aaliya Akhtar and Shailbala Saxena. Data was analyzed by Mean Standard Deviation and Pearson Correlation Coefficient. It was found that there was a significant relationship between the academic achievement in Science and home environment. Similarly there was a significant relationship between the academic achievement in Science and home environment of male higher secondary students. Significant correlation was found between the academic achievement in Science and home environment of female higher secondary students. Significant correlation was found between the academic achievement in Science and home environment of rural higher secondary students. But there was no significant relationship between the academic achievement in Science and home environment of urban higher secondary students.

Keywords:

Academic achievement in Science, Home environment:

Similar learning experiences are provided in educational institutions for all students but their achievements may differ substantially from each other. Academic achievement does not solely depend upon school experience but it may be affected by several factors. These factors can be categorized into individual factors, peer factors, social factors, and environmental factors. All these factors have a huge impact on academic achievement directly or indirectly. The home environment is one of the strong factors which influence the overall achievement of students. Home is the physical place where the family resides and provides a physical, social and psychological, and emotional environment for the proper growth and development of the child. A family is the strongest agency of socialization and affects all aspects of the development of a child. The home environment is the environment where the parents and child coexist and provide physical, affective, emotional, social and cognitive support to their children within the home. It refers to all the objects, forces, and conditions in the home which influence the child. The different home environment varies in many ways such as the socioeconomic status, level of education of the parents,

occupational status, values, interest, beliefs, religious background, parent's expectations of their children, parent-rearing style, parental approval and affection towards the child, mother-child relationship and parental behaviors (Muola2010). It refers mainly to the psychosocial climate of the home as perceived by the child in the home.

Academic achievement refers to a pupil's knowledge attainment and the skills acquired in the school subjects which are assessed by the authorities with the help of achievement tests in the different forms of examinations. According to Oxford Advance Learners Dictionary (2000) Achievement is a thing that somebody has done successfully especially using his or her efforts and skills. Academic achievement in this sense will mean learning the content of books taught in the schools.

Many studies showed that there is a positive correlation between academic achievement and home environment. As early as 1966 the well-known Coleman report revealed that family socioeconomic status explained most variance in academic achievement. Agrawal Kusum (1986) found that parental encouragement have a pervasive effect on educational performance. Eagle Eva (1989) found that parental attention and family factors affected the student's post-secondary attainments. Klebanov et.al. (1994) found that both mother's education and family income were important predictors of physical environment and learning experiences at home. Studies have shown that parental education is important in predicting children achievement (Haveman and Wolfe 1995). Corwyn and Bradly (2002) also found that maternal education had the most consistent direct influence on children cognitive and behavioral outcomes with some indirect influence through a cognitively stimulating home environment. J. M. Muola (2010) found a positive correlation between academic achievement motivation and different dimensions of the home environment. M. S. Farooq et. al. (2011) found that overall achievement and achievement in Math and English were significantly correlated with the socioeconomic status and education of the parents. Y. S. Deswal et. al. (2014) concluded that academic achievement and home environment are positively correlated and there was a significant difference between the home environment of rural and urban students. Ramandeep (2015) found a positive correlation between achievement motivation and the home environment of secondary school students. Rao and Reddy(2016) also found a significant relationship between home environment and academic motivation. Menu Dev (2017) also found a positive correlation between academic achievement and home environment. Shashikala S. A. (2020) found a positive and significant correlation between academic achievement and personality adjustment and the home environment of high and low-socio-economic status girls. Gaurav Kumar Paswan and Subodh Kumar(2020) studied the correlation between academic achievement and different dimensions of the home environment, they found that control of parents, protectiveness, punishment, social isolation, deprivation of privileges rejection, and permissiveness are negatively correlated with the academic achievement of S. C. students While reward, nurturance, conformity had no significant relationship with academic achievement of S. C. students. Similarly, Ibahunrina(2012) also found a low correlation between academic achievement and control, social isolation, protectiveness, reward, deprivation of privileges, nurturance, rejection, and permissiveness dimensions of the home environment. Kumar (2014) found students experiencing a healthy environment have higher academic achievement in comparison to students from a low-family environment.

Although many studies have been conducted on the academic achievement and home environment of the students less research has addressed the academic achievement in Science subjects in relation to Home Environment. Hence researcher tried to investigate the academic achievement in Science among Higher secondary students in relation to Home Environment.

Objectives of the study:

The main objectives of the study were as follows:

- a. To find out the relationship between academic achievement in Science and the home environment of higher secondary students
- b. To Find out the relationship between academic achievement in Science and the home environment of male higher secondary students
- c. To find out the relationship between academic achievement in Science and the home environment of female higher secondary students
- d. To find out the relationship between academic achievement in Science and the home environment of urban higher secondary students
- e. To find out the relationship between academic achievement in Science and the home environment of rural higher secondary students

Hypotheses of the study:

The null hypotheses of the study were as follows:

- a. There is no significant relationship between the academic achievement and home environment of higher secondary students (Total sample)
- b. There is no significant relationship between academic achievement in Science and the home environment of male higher-secondary students
- c. There is no significant relationship between academic achievement in Science and the home environment of female higher-secondary students
- d. There is no significant relationship between academic achievement in Science and the home environment of urban higher secondary students
- e. There is no significant relationship between academic achievement in Science and the home environment of rural higher secondary students

Method of the study:

The study adopted the descriptive survey method and was carried out in the East Singhbhum district of Jharkhand

Variables of the study:

The home environment was the independent variable and academic achievement was the dependent variable.

Population and Sample:

The population of the study was all the students of higher secondary level of East Singhbhum district. A sample of 500 higher secondary students was taken by a simple stratified random sampling method.

Tools for the collection of data:

Data was collected with the help of the following standardized and validated tools:

A. Science achievement test by R. D. Singh:

This test consists of a total of eighty-six items. Out of which forty-two questions were from Physics and forty-four questions from chemistry subjects. The reliability of the test is 0.97 and content validity is satisfactory.

B, Home Environment Scale by Aaliya Akhtar and Shailbala Saxena:

This scale consists of fifty items divided into ten dimensions the home environment-Protectiveness, Parental involvement, Academic stimulations, Reward, Parental Warmth, Participation in home affairs, Control, Permissiveness, and Parental Expectations. The reliability coefficient of the test is 0.69 while concurrent validity is 0.67

Data Analysis and Findings:

Data was collected with the help of these standardized tools and systematically organized and then analyzed with the help of mean, standard deviation, and Pearson correlation coefficient.

The first objective of the study was to find out the relationship between academic achievement in Science and the home environment of higher secondary students (Total sample). To test the hypothesis Pearson correlation was computed.

Table 1: Showing the relationship between Academic Achievement in the Science and home environment of higher secondary students (Total sample)

Variables	r-value	df	Table value of r	Significance level
Academic Achievement And Home Environment	0.215	498	0.088	0.05

Here Pearson Correlation coefficient is 0.125 for the degree of freedom 498. From the table of Pearson r, it is 0.088 at the 0.05 significance level. Obtained Pearson r value is more than the table value so the null hypothesis is rejected and there is a significant correlation between the academic achievement in Science and the home environment of higher secondary students

The second objective of the study was to find out the relation between academic achievement in Science and the home environment of male higher secondary students. To test the hypothesis Pearson correlation was computed

Table 2: Showing the relationship between the Academic Achievement in Science home Environment of male higher secondary students

Variables	r-value	Df	Table value of r	Significance level
Academic Achievement in Science and Home environment	0.150	230	0.138	0.05

Here Pearson Correlation Coefficient is 0.150 for the degree of freedom 230. From the Pearson r table, this value is 0.138 at the 0.05 significance level. Obtained r-value is greater than the table value So the null hypothesis is rejected and there is a significant correlation between Academic Achievement in Science and the home environment of the male higher secondary students.

The third objective of the study was to find out the relation between academic achievement in Science and the home environment of female higher secondary students. To test the hypothesis Pearson correlation is computed.

Table 3: Showing the relationship between academic achievement in Science and the home environment of female higher secondary students.

Variables	r-value	Df	Table value of r	Significance level
Academic achievement in Science and home environment	0.269	266	0.138	0.05

Here Pearson's r-value is 0.269 for the degree of freedom 266. The table value of Pearson r is 0.138. The obtained value of Pearson r is greater than the table value so the null hypothesis is rejected and there is a significant correlation between the academic achievement in Science and the home environment of female higher secondary students.

The fourth objective of the study was to find out the relation between academic achievement in Science and the home environment of rural higher secondary students. To find out the correlation Pearson correlation was computed.

Table 4: Showing the relationship between academic achievement in Science and the home environment of rural higher secondary students

Variables	r-value	df	Table value of r	Level of significance
Academic achievement in Science and home environment	0.235	190	0.159	0.05

Here obtained Pearson r-value for the degree of freedom 190 is 0.235 table value for which is 0.159. The obtained value is greater than the table value so the null hypothesis is rejected and there is a significant relationship between academic achievement in Science and the home environment of higher secondary students.

The fifth objective of the study is to find out the relationship between academic achievement in Science and the home environment of urban students. To find out the relation Pearson correlation was computed.

Table 5: Showing the relationship between academic achievement in Science and the home environment of urban higher secondary students

Variables	r-value	df	Table value of r	Level of significance
Academic achievement in Science and home environment	0.100	306	0.113	0.05

Here obtained r-value for the degree of freedom 306 is 0.100 which is less than the table value of r which is 0.113 so the null hypothesis is accepted and there is no significant correlation between the academic achievement in Science and home environment of the higher secondary students.

Conclusion:

Based on the analyzed data the following conclusions were drawn

- a. It was found that there is a significant correlation between academic achievement in Science and the home environment of higher secondary students (total sample

- b. There is a significant correlation between academic achievement in Science and the home environment of male higher-secondary students.
- c. There is a significant correlation between academic achievement in Science and the home environment of female higher secondary students.
- d. There is a significant relationship between academic achievement in Science and the home environment of rural higher secondary students.
- e. There is no significant correlation between academic achievement in Science and the home environment of urban higher secondary students.

Educational implications:

The present study attempted to study the academic achievement in Science of higher secondary students in relation to their home environment. Findings might be useful for educational planners, teachers, psychologists, administrators, and parents as important stakeholders of the educational system.

Suggestions for the further study:

Further study may be carried out on academic achievement in other subjects and its relation to the home environment. A comparative study may be carried out on the academic achievement of students of Government and Private schools. A similar study can be done in different cities at the Higher education level. Other studies can be carried out on the academic achievement of students of teacher education.

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