



## Scholastic achievement among adolescents: Role of unique aspects of home and school conditions

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### Abstract

Students generally consider scholastic achievement to be the grade they receive after a period of specific instruction. Researchers evaluate a person's scholastic achievement based on the knowledge and skills they have developed in the academic domain, as well as the test results they have obtained. Scholastic achievement is one of the critical parameters to measure affluence; therefore, researchers are keen to investigate the various dimensions that are going to affect it directly or indirectly. The present study focuses on analyzing the distinct dimensions of the home and school environment that show a direct association with adolescents' scholastic achievement. The study uses a correlational research design. This study has selected a sample of 154 individuals from the Delhi region of India. The results obtained through correlation and regression analysis clearly indicate that control and rejection in school settings, along with a permissive home environment, significantly predict the scholastic achievement of female adolescents. The results also revealed that a permissive, protective, and punishing home environment, as well as restrictions imposed in a school setting, are significant predictors of male adolescents' scholastic achievement. From this, it can be concluded that the home environment and school environment dimensions play a pivotal role in the attainment of scholastic achievement among adolescents.

**Keywords:** Adolescents, Family, Home environment, Parents, Scholastic achievement, School environment, Teachers.

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### Contribution of this paper to the literature

This study sheds light on the impact of specific home and school environment-related conditions on the attainment of scholastic excellence among Indian adolescent students

## 1. Introduction

Rapid physical and mental growth and development characterize adolescence, a transitional phase of the human life span. It's a period between 11 and 19 years of age that connects the childhood and adulthood stages of life. The adolescent phase is characterized by the extensive development of reasoning, logic, and rational thinking, enabling individuals to effectively navigate real-life scenarios. Education and learning during the adolescent stage play a pivotal role in inculcating these abstract abilities in children in order to make objective decisions. Education aids children in effectively understanding the social and societal structure, nurtures their personalities, and opens up various career opportunities; hence, it is widely considered a crucial factor in evaluating a child's accomplishments and success in life. Therefore, the school educational system currently places a significant emphasis on children's academic achievement.

Scholastic achievement is considered to be the amount of knowledge and skills attained by the child in school subjects, which is measured on the basis of grades obtained after the tests. Scholastic achievement is also an indicator of the quality and quantity of excellence acquired by the learner after providing a specific set of instructions over a definite period of time. Crow and Crow (1969) define scholastic achievement as "the extent to which skill and knowledge have been imparted to the learner." It is also an index to measure the effectiveness of teaching methodology, curriculum, and educational policies. Scholastic achievement is a multidimensional phenomenon, and factors such as biological, personal, and social factors play a significant role. Social factors such as the environment of Home and School are critical components that closely correlate with the Scholastic achievement of adolescents.

Home is the fundamental, informal, but effective institution for education & learning, with a prime focus on cultural and moral coaching. Home is the primary institution responsible for providing an empathic, encouraging, affective, and warm environment for children's effective growth and development. Moos and Moos (1986) defined the family environment as "the degree of commitment, help, and support family members provide for one another." The family, living together, forms a social unit or center. A home environment that is sensitive to a child's needs is accountable for the appropriate physical, psychological, social, and emotional growth of children, which motivates them to attain academic excellence. In contrast, a home environment that is insensitive to a child's demands is responsible for deficit growth and development, which results in poor academic excellence. A study conducted by Naik and Dubey (2018) among secondary school students in the tribal area concluded that the home environment significantly influences achievement parameters. Studies also concluded that a positive association exists between the home environment and the academic accomplishment of adolescent students (Jain & Mohta, 2019; Oommen, 2015). Younas, Javaid, Liu, Khalid, and Bakar (2020) suggested that children reared in a caring and dependable home environment have a higher tendency to attain better educational success.

The school environment is also a significant factor in explaining adolescents' academic achievement. The school environment is a complex and multi-dimensional construct that includes metal infrastructure, teacher-student relationships, peer relations, teaching methodology, and curriculum. The school environment, which provides opportunities for cognitive stimulation, nurture, and support, plays a pivotal role in the effective social, emotional, and cognitive development of students, resulting in a high likelihood of academic success. In contrast, a maleficent school environment is responsible for students' substandard cognitive and scholastic achievement. Usaini, Abubakar, and Bichi (2015) suggested that schools with an adequate learning environment and appropriate instruction methodology encourage students to achieve higher scholastic performance. Studies also summarized that a notable positive association exists between the school environment and the academic attainment of students (Harinarayanan & Pazhanivelu, 2018; Khan & Khan, 2017). Baafi (2020) conducted a study among senior high school students in Ghana, concluding that adequate school facilities nurture students' learning attitudes.

The extant literature has illustrated that students' home and school climates have a significant impact on students' scholastic outcomes. But there are gaps with regard to the specific dimensions/aspects of the home and school environment that are closely associated with the scholastic achievement of adolescents.

## 2. Theoretical Framework

The present study is articulated by Maslow (1943). According to Maslow's model, basic needs lie at the bottom level, whereas higher-order needs lie at the top level (physiological, safety, belongingness, esteem, cognitive, aesthetic, self-actualization, and transcendence needs). The key concept is that individuals have to satisfy their needs in a systematic manner, starting with their basic physiological needs and then moving up in the hierarchy. For example, a child who feels unsafe, insecure, and isolated is unable to achieve great academic performance unless safety and belongingness needs are met.

## 3. Objective of the Study

The prime objective of the current study is to examine the contribution of distinct dimensions of Home and School Environment to the attainment of Scholastic excellence among adolescents.

## 4. Method

The study uses a correlational research design. The sample was comprised of 165 students (class 11<sup>th</sup> and 12<sup>th</sup>) from Government schools in Delhi by using convenience sampling procedures. Out of the 165 respondents, 154 have shared their responses properly; therefore, they have been considered for the analysis. Approvals have been obtained from the Institutional Ethics Committee as well as from the heads of different schools before data collection. Informed consent has been obtained from respondents before data collection. The tools used in the research study are as follows:

1. Home Environment Inventory (HEI) by Misra (2012a): The instrument is designed to measure the psychosocial environment of home as perceived by children with high split-half reliability. The HEI consists of 100 items that fall into ten distinct dimensions: control, protectiveness, punishment, conformity, social isolation, reward, deprivation of privileges, nurturance, rejection, and permissiveness.

2. School Environment Scale (SEI) by Misra (2012b): The instrument is designed to measure the social psychology of the classroom with high split-half reliability. SEI is comprised of 70 items belonging to six different dimensions, which are: creative stimulation, cognitive encouragement, acceptance, permissiveness, rejection, and control.

3. Scholastic achievement was assessed on the basis of marks obtained in the 10<sup>th</sup> Class C.B.S.E. (Central Board of Secondary Education) Board exam.

After the collection of data for different parameters, the obtained scores were quantified for analysis. Pearson's product moment correlation and Stepwise regression analysis were used to analyze the obtained scores.

Table 1 introduces the list of variables and abbreviations included in the study.

**Table 1.** List of the variables and abbreviations included in the study.

Sr. number	Name of variable	Symbol	Scale
1	Control	A	Home environment scale
2	Protectiveness	B	
3	Punishment	C	
4	Conformity	D	
5	Social isolation	E	
6	Reward	F	
7	Deprivation of privileges	G	
8	Nurturance	H	
9	Rejection	I	
10	Permissiveness	J	
11	Creative stimulation	AS	School environment scale
12	Cognitive encouragement	BS	
13	Acceptance	CS	
14	Permissiveness	DS	
15	Rejection	ES	
16	Control	FS	Scholastic achievement
17	Scholastic achievement	SA	

## 5. Results

Out of 154 respondents, 88 respondents (57.14%) are male and 66 respondents (42.86%) are female. The descriptive indices corresponding to each Dimension are given in Table 2 and Table 3.

**Table 2.** Means, standard deviation, Skewness, and Kurtosis of females (N=66) on all the measured variables.

Variables	Mean	Std. deviation	Skewness	Kurtosis
A	3.62	1.356	-0.379	-0.537
B	4.68	1.279	-0.693	-0.322
C	3.23	1.423	0.047	-0.615
D	3.79	1.669	-0.185	-1.071
E	3.39	1.080	0.283	-1.175
F	4.05	1.364	-0.197	-0.717
G	3.26	1.127	0.266	-1.336
H	3.97	1.414	-0.484	-0.413
I	3.50	1.481	0.103	-0.844
J	4.67	1.340	-0.784	-0.216
AS	7.41	1.529	-1.048	0.446
BS	6.55	1.647	-1.041	0.375
CS	6.95	1.352	-0.878	0.170
DS	7.23	1.606	-0.544	-1.022
ES	3.76	1.674	1.250	1.963
FS	6.55	2.328	-1.017	0.151
Scholastic achievement	81.74	10.797	-0.979	0.223

**Table 3.** Means, standard deviation, Skewness, and Kurtosis of males (N=88) on all the measured variables.

Variables	Mean	Std. deviation	Skewness	Kurtosis
A	3.94	1.216	-0.595	-0.351
B	4.28	1.485	-0.462	-0.829
C	3.40	1.572	-0.324	-0.976
D	3.76	1.531	0.020	-1.007
E	3.38	1.065	0.131	-1.209
F	3.98	1.330	-0.377	-0.453
G	3.39	1.108	0.061	-1.348
H	3.63	1.511	0.072	-1.147
I	3.76	1.406	-0.045	-0.763
J	4.40	1.410	-0.491	-0.895
AS	6.67	1.514	-0.538	-0.686
BS	6.56	1.787	-0.615	-0.307
CS	6.82	1.505	-0.324	-1.070
DS	6.82	1.752	-0.529	-0.544
ES	4.33	1.753	0.016	-0.719
FS	5.84	2.133	-0.319	-0.698
Scholastic achievement	77.10	12.169	-0.554	-0.850

The obtained values of descriptive statistics such as mean, standard deviation, skewness, and kurtosis are represented in Table 2 and 3. Perusal of Table 2 and 3 clearly indicate that the obtained Skewness values for all the variables lie in the range (0.016 to 1.250), and the value of Kurtosis lies in the range (0.151 to 1.963), which falls within the acceptable range. Researchers Field (2009), Tabachnick and Fidell (2007), and Trochim and Donnelly (2006) mentioned that if the obtained values of skewness and kurtosis lie between -2 to +2, then the gathered data may be considered to have a normal distribution.

**Table 4.** Correlation between Scholastic achievement and sub-dimensions of Home and School environment among female and male adolescents.

Variables	Scholastic achievement among females	Scholastic achievement among males
A	-0.263*	-0.047
B	0.645**	0.774**
C	-0.414**	-0.204
D	0.538**	0.533**
E	-0.390**	-0.189
F	0.443**	0.525**
G	-0.429**	-0.351**
H	0.421**	0.620**
I	-0.443**	-0.168
J	0.706**	0.793**
AS	0.753**	0.701**
BS	0.657**	0.680**
CS	0.669**	0.624**
DS	0.603**	0.580**
ES	-0.534**	-0.640**
FS	0.827**	0.752**

**Note:** \*\* Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

Perusal of gathered results from Table 4, distinctly expressed that home environment dimensions (Protectiveness (B), Conformity (D), Reward (F), Nurturance (H), and Permissiveness (J)) are significantly positively correlated with the scholastic achievement of adolescent females. The value of correlations ranges from 0.421 to 0.645, which is highly significant. It can be suggested that adolescent females who receive a caring and supportive environment, follow the directions of their parents, are rewarded, have an unconditional and emotional attachment to their parents, and get the opportunity to express their views freely have better Scholastic achievement. Home environment dimensions (control (A), punishment (C), social isolation (E), deprivation of privileges (G), and rejection (I)) are significantly negatively associated with the scholastic achievement of female adolescents. The obtained correlation values range from -0.263 to -0.443, which is significant. On the basis of the obtained results, it can be encapsulated that an autocratic atmosphere, punishment, social isolation, depriving adolescents of their rights, and rejection act as obstacles to the flourishing of the scholastic attainment of female adolescents. The reported values of correlation in Table 4 evidently indicated that home environment dimensions ((Protectiveness (B), Conformity (D), Reward (F), Nurturance (H), and Permissiveness (J)) are significantly positively correlated with the scholastic achievement of male adolescents. The value of correlations ranges from 0.525 to 0.793, which is highly significant. It can be expressed that male adolescents who get a caring and supportive environment, are obedient to their parents, are being rewarded, have an unconditional and emotional attachment to their parents, and get the opportunity to express their views freely enhance their Scholastic Achievement. The results also reveal a significant negative correlation between the deprivation of privileges (G) dimension of the home environment and the scholastic achievement of male adolescents ( $r = -0.351$ ). This indicates that depriving the rights of male adolescents at home acts as a barrier to the maintenance of Scholastic achievement. The dimensions of the home environment (control (A), punishment (C), social isolation (E), and rejection (I)) have no significant association with male adolescents' scholastic achievement. Perusal of obtained results from Table 4 clearly indicated that school environment dimensions (creative stimulation (AS), cognitive encouragement (BS), acceptance (CS), permissiveness (DS), and control (FS)) are significantly and positively correlated with the scholastic achievement of male and female adolescents. According to acquired values, giving teenage boys and girls chances to think and learn new things, letting them freely express their thoughts and feelings, and putting limits on behavior to keep order in school are all essentials for their academic success. The values of correlation also expressed that significant negative correlations exist between Scholastic Achievement and Rejection (ES) dimensions of the school environment. This indicates that schools that do not respect students' rights will be held accountable for the impoverished scholastic achievement of male and female adolescents.

### 5.1. Predictors of Scholastic Achievement among Female Adolescents

On the basis of the obtained results from Table 5, it can be concluded that out of all the independent variables considered in the study, Control (FS: dimension of School Environment) ( $\beta = 0.564$ ,  $p < 0.001$ ),  $R^2 = 0.684$ , Permissiveness (J: dimension of Home environment) ( $\beta = 0.336$ ,  $p < 0.001$ ),  $R^2 = 0.771$  and Rejection (ES: dimension of School Environment) ( $\beta = -0.168$ ,  $p < 0.012$ ),  $R^2 = 0.793$  are the significant predictors of Scholastic Achievement ( $F(3,62) = 79.212$ ,  $p < 0.01$ ) among female adolescent students. All these predictors are collectively responsible for the 79.3% variance in the Scholastic Achievement of adolescent female students. Results also indicated that control in the school environment is the most crucial predictor of Scholastic Achievement among female adolescent students, as it accounts for 68.4% of the variance in Scholastic Achievement.

$$\text{Scholastic Achievement} = 56.054 + \text{FS} \times 2.617 + \text{J} \times 2.705 + \text{ES} \times (-1.081).$$

**Table 5.** Stepwise regression analysis showing predictor of Scholastic achievement among females adolescents.

Predictor variables	R square	Adjusted R square	R square change	F value	B	Beta	t-value	Significance level
FS	0.684	0.679		138.550*	2.617	0.564	7.629	0.000
J	0.771	0.764	0.087	106.029*	2.705	0.336	4.795	0.000
ES	0.793	0.783	0.022	79.212*	-1.081	-0.168	-2.575	0.012

Note: \*Significant at 0.01.

Control (FS) ( $\beta = 0.564$ ,  $p < 0.001$ ) is the most crucial predictor of Scholastic achievement among adolescent female students, and these results are in line with the outcome of the research study by Dkhar and Kharbirybai (2017). Permissiveness (J) ( $\beta = 0.336$ ,  $p < 0.001$ ) is another pivotal predictor of Scholastic achievement among adolescent females, which indicates that a liberal and permissive home environment leads to superior scholastic achievement among adolescent female students. Rejection (ES) ( $\beta = -0.168$ ,  $p < 0.012$ ) is another crucial predictor of Scholastic achievement among female adolescents, which indicates that rejection in school settings will act as a barrier to the maintenance of Scholastic attainment among adolescent females. Findings have clearly expressed that appropriate control in school settings, a permissive home environment, and rejection of students in school play a critical role in nurturing the scholastic attainment of female adolescents. Hence, we can partially accept the hypothesis that unique dimensions of the home and school environment play a crucial role in the development of scholastic achievement among female adolescents.

### 5.2. Predictors of Scholastic Achievement among Male Adolescents

On the basis of the obtained results from Table 6, it can be concluded that out of all the independent variables considered in the study, Permissiveness (J: dimension of Home environment) ( $\beta = 0.287$ ,  $p < 0.001$ ),  $R^2 = 0.629$ , Protectiveness (B: dimension of Home environment) ( $\beta = 0.442$ ,  $p < 0.001$ ),  $R^2 = 0.731$ , Control (FS : dimension of School Environment) ( $\beta = 0.245$ ,  $p < 0.002$ ),  $R^2 = 0.765$ , and Punishment (C: dimension of Home environment) ( $\beta = -0.148$ ,  $p < 0.009$ ),  $R^2 = 0.784$  are the significant predictors of Scholastic Achievement ( $F(4,83) = 75.273$ ,  $p < 0.01$ ) among male adolescent students. All these predictors are collectively responsible for the 78.4% variance in the scholastic achievement of adolescent male students. Results also indicated that permissiveness in the home environment is the most crucial predictor of scholastic achievement among male adolescent students, as it accounts for 62.9% of the variance in scholastic achievement.

$$\text{Scholastic Achievement} = 46.430 + J \times 2.475 + B \times 3.621 + FS \times 1.398 + C \times (-1.146).$$

**Table 6.** Stepwise regression analysis showing predictor of Scholastic achievement among males adolescents.

Predictor variables	R square	Adjusted R square	R square change	F value	B	Beta	t-value	Significance level
J	0.629	0.624		145.601*	2.475	0.287	3.396	0.001
B	0.731	0.724	0.102	115.220*	3.621	0.442	5.822	0.000
FS	0.765	0.757	0.035	91.213*	1.398	0.245	3.156	0.002
C	0.784	0.773	0.019	75.273*	-1.146	-0.148	-2.686	0.009

Note: \*Significant at 0.01.

Permissiveness (J) ( $\beta = 0.287$ ,  $p < 0.001$ ) is the notable predictor of Scholastic achievement among adolescent males, which represents that a non-restrictive, liberal, and permissive home environment leads to outstanding Scholastic achievement in adolescent male students. Protectiveness (B) ( $\beta = 0.442$ ,  $p < 0.001$ ) is another significant predictor of Scholastic achievement, indicating that a protective home environment is responsible for the higher-order Scholastic performance of adolescent males. Control (FS) ( $\beta = 0.245$ ,  $p < 0.001$ ) is an important predictor of Scholastic achievement among adolescent male students, and these results are in accordance with the findings of Bala (2018). Punishment (C) ( $\beta = -0.148$ ,  $p < 0.009$ ) is the crucial parameter of Scholastic achievement of male adolescents, which represents that physical or any kind of affective punishment will act as a barrier for nurturance of Scholastic achievement among adolescent male students. Findings have clearly expressed that a liberal, protective, and punishing home environment and control in school settings play a prime role in the attainment of Scholastic success among male adolescents. Hence, we can partially accept the hypothesis that unique dimensions of Home and School environment play a crucial role in the development of Scholastic achievement among male adolescents.

## 6. Discussion

The primary goal of the present study is to determine the likelihood of predicting adolescents' scholastic achievement based on distinct dimensions of the home and school environment. The findings clearly inferred that different parameters of the home and school environments play a pivotal role in the attainment of scholastic affluence among male and female adolescents. The obtained correlation values demonstrated that home environment dimensions (Protectiveness (B), Conformity (D), Reward (F), Nurturance (H), and Permissiveness (J)) are significantly positively correlated with the Scholastic achievement of male and female adolescents. Results indicated that a supportive, protective, caring, and nurturing home environment will help children achieve age-appropriate growth and development, ultimately leading to a better academic outcome. The results were consistent with Doley (2018) findings that students who live in an encouraging and supportive home environment achieve higher academic success. Parents, guardians, and family members will have to make an effort to provide children with a sense of security, opportunities for advancement, and appropriate facilities in order to achieve academic excellence.

Female adolescents' scholastic achievement significantly negatively correlates with home environment dimensions such as control (A), punishment (C), social isolation (E), deprivation of privileges (G), and rejection (I). Home environment aspect Deprivation of privileges (G) is significantly negatively associated with male adolescents' academic achievement. Restrictions, physical and affective punishment, social isolation, and a lack of appropriate privileges at home can significantly impact a child's survival, leading to the development of poor physiological and psychological health outcomes. Such children have a higher tendency for aggressive, violent, and defiant behaviors,

which results in poor academic attainment. The obtained findings summarized that school environment dimensions (creative stimulation, cognitive encouragement, permissiveness, acceptance, and control) are positively associated with the attainment of scholastic success among male and female adolescents. The outcome of the study clearly inferred that the school environment, which is inspiring, motivating, and provides opportunities for cognitive stimulation, plays a significant role in the attainment of higher academic success among adolescents. The results are in line with the findings of Okafor, Maina, Stephen, and Ohambele (2016), that a conducive and accommodating school environment results in improved academic performance in students. The school environment dimension "rejection" is negatively associated with adolescents' scholastic achievement, indicating that a lack of recognition at school is responsible for substandard scholastic performance. Findings yielded from regression analysis represent that appropriate control in school settings, a permissive home environment, and rejection of students within the school setting play pivotal roles in nourishing the scholastic achievement of female adolescents. The results also elaborated that a liberal, protective, and punishing home environment, as well as restrictions imposed in a school setting, play a significant role in male adolescents' scholastic achievement. Hence, we can establish that for higher-order scholastic attainment among adolescents, conducive, protective, & appreciative home and school environments uphold principal importance.

## 7. Conclusion

It is of prime importance to note the findings of the present research study, which indicated that different aspects of Home and School environment are significantly influencing the scholastic performance of adolescents. As per the research findings, adolescents who were reared in a protective and nurturing home environment have a higher likelihood of performing well in academics and the educational domain, whereas adolescents who belong to an isolating, punishing, & deprived home environment have a higher tendency toward substandard academic performance. This clearly demonstrates that the quality of the home environment has a notable influence on the future accomplishments of children. The outcome of the present study strongly conveys that students from schools with an encouraging, responsive, and stimulating environment have a greater likelihood of becoming high achievers in the field of academics, whereas students from schools with a rejecting and opposing school environment have a higher probability of mediocre academic attainment. This clearly indicates that the quality of the school environment plays a critical role in influencing the future educational attainment of children. Hence, it can be concluded that different aspects of Home and School environment do play an influential role in the scholastic performance of adolescents.

## 8. Recommendations

1. Parents and family members should actively participate in their children's academic regime to analyze their progress and develop a sense of warmth and worthiness.
2. Teachers have to make an effort to build effective relationships with students that encourage learning.

## 9. Limitation

The study has a relatively small sample size.

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