

## ACADEMIC ACHIEVEMENT AMONG SENIOR SECONDARY STUDENTS: INFLUENCE OF ANXIETY, LEARNING STYLES, AND HOME ENVIRONMENT

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### Abstract

*Academic achievement, a key indicator of educational success, is shaped by the interaction of psychological and environmental factors. The present study examined the influence of academic anxiety, learning styles, and home environment on the academic achievement of senior secondary school students. A quantitative research design was employed, and data were collected from a randomly selected sample of 100 students from government and private schools. Data were gathered using standardized instruments and academic records, and analyzed using correlation and comparative statistical techniques to examine relationships among variables and group differences. The findings revealed significant relationships between academic achievement and the selected variables, highlighting the negative impact of anxiety, the role of learning approaches, and the importance of a supportive home environment. The study provides practical implications for educators, parents, and policymakers in promoting learner-centered practices and improving student outcomes.*

**Keywords:** academic achievement, anxiety, learning styles, home environment, senior secondary students

### Introduction

Academic achievement is a central indicator of students' educational attainment and future opportunities. While earlier perspectives primarily linked achievement with intelligence and examination performance, recent research emphasizes the role of multiple psychological and environmental factors in shaping students' academic outcomes.

One of the key psychological factors is academic anxiety, which significantly influences students' performance. Although a moderate level of anxiety may facilitate alertness, excessive anxiety tends to impair concentration, memory, and task performance, ultimately leading to lower academic achievement. Therefore, examining the impact of anxiety is essential for understanding variations in student performance.

Another important factor is learning style, which reflects individual differences in how students acquire, process, and retain information. These differences highlight the need for adaptable teaching approaches. Even though learning styles alone may not directly determine achievement, the use of flexible and varied instructional methods can improve engagement and learning effectiveness.

The home environment also plays a crucial role in academic development. A positive and supportive home setting promotes motivation, discipline, and effective study habits, whereas a lack of support may hinder academic progress. This influence becomes more pronounced at the senior secondary level, where students experience greater academic pressure.

Although these factors have been widely studied independently, limited research has explored their combined effect on academic achievement. Hence, the present study aims to examine the influence of academic anxiety, learning styles, and home environment on the academic achievement of senior secondary school students.

### Review of Literature

Academic achievement has been widely studied in relation to academic anxiety, learning styles, and home environment. Academic anxiety is a key predictor of performance, with consistent evidence of a negative relationship—higher anxiety leads to lower achievement (Sababathy, 1986; Alam, 2001; Malhotra, 2003), due to its adverse effects on concentration and cognitive efficiency. However, this relationship is context-dependent and influenced by socio-economic and institutional factors (Yadav, 1989; Joshi et al., 2010), while gender differences remain inconclusive (Khatoon et al., 2010; Kumari, 2010). Recent meta-analyses indicate that anxiety affects achievement both directly and indirectly through motivation, self-concept, and persistence (Brumariu et al., 2023; Jerrim et al., 2023).

The link between learning styles and academic achievement is inconsistent. While some studies report positive associations (Singh et al., 2011; Neetu, 2012), others find weak or no relationship (Gappi, 2013; Thakkar, 2014), indicating limited predictive value. Current research highlights instructional quality, engagement, and self-regulation as more influential factors (Yusoff et al., 2014; Sushma et al., 2015). Moreover, strict alignment of teaching with learning styles shows minimal impact (Clinton-Lisell, 2024), though flexible and multimodal approaches can enhance engagement (Gangadharan et al., 2025).

The home environment remains a critical determinant of academic achievement. Supportive, resource-rich settings are linked to better outcomes (Parveen, 2007; Philip, 2008; Doley, 2018). Parental involvement—especially autonomy-supportive—enhances motivation and learning, with quality outweighing frequency (Kamuti, 2015; Kim, 2022; Heastie, 2001). Socio-economic status and socio-cultural factors further shape access to resources and experiences (Coley et al., 2020; Kaur, 2010). Post-pandemic disparities in digital access and home support have widened achievement gaps (Cortes-Albornoz et al., 2023).

Despite extensive individual research, studies examining the combined influence of these variables—particularly in the Indian senior secondary context, remain limited, highlighting the need to explore their interactive effects on academic achievement.

### Research Objectives

The present study aims to examine the combined influence of academic anxiety, learning styles, and home environment on the academic achievement of senior secondary school students. The specific objectives are:

- To examine the relationship between academic anxiety and academic achievement among senior secondary students.
- To investigate the relationship between learning styles and academic achievement.
- To study the relationship between home environment and academic achievement.

- To examine the combined and individual predictive effects of academic anxiety, learning styles, and home environment on academic achievement.
- To analyze gender differences in academic anxiety, learning styles, home environment, and academic achievement.

### Hypotheses

H<sub>01</sub>: There is no significant relationship between academic anxiety and academic achievement among senior secondary students.

H<sub>02</sub>: There is no significant relationship between learning styles and academic achievement among senior secondary students.

H<sub>03</sub>: There is no significant relationship between home environment and academic achievement among senior secondary students.

H<sub>04</sub>: Academic anxiety, learning styles, and home environment do not significantly predict academic achievement among senior secondary students.

### Research Methodology

The study employed a descriptive (normative survey) design to examine the relationship and predictive effects of academic anxiety, learning styles, and home environment on academic achievement among senior secondary students. The population comprised students of Classes XI and XII from government and private schools in the Faridabad district. A sample of 100 students was selected using random sampling. The sample included both male and female students within the age range of 16-18 years.

Academic achievement was considered the dependent variable, while academic anxiety, learning styles, and home environment were treated as independent variables. Data were collected using standardized instruments, namely the Comprehensive Anxiety Scale developed by Sinha and Sinha, the Learning Style Inventory developed by Mishra, and the Home Environment Inventory developed by Mishra. Academic achievement was measured through aggregate examination scores.

### Data Analysis

The collected data were analysed using appropriate statistical techniques to examine relationships and predictive effects among academic anxiety, learning styles, home environment, and academic achievement. Descriptive statistics, including mean and standard deviation, were computed to summarize the data.

Pearson's Product Moment Correlation was used to assess the direction and strength of relationships between academic achievement and the independent variables. Multiple regression analysis was further employed to determine the combined and individual predictive contributions of academic anxiety, learning styles, and home environment to academic achievement. All analyses were conducted at 0.05 and 0.01 levels of significance to determine statistical significance.

## Results and Interpretation

The present study examined the relationship between academic achievement and academic anxiety, learning styles, and home environment among senior secondary school students. Descriptive analysis indicated that students demonstrated a moderate level of academic achievement ( $M = 72.30$ ,  $SD = 8.10$ ), with a fairly consistent distribution of scores. Gender-wise comparison showed that girls ( $M = 73.50$ ) performed slightly better than boys ( $M = 71.10$ ). The distribution of scores was approximately normal, as indicated by near-zero skewness and kurtosis values.

The mean anxiety score for the total sample was 48.60, with boys ( $M = 49.20$ ) reporting marginally higher anxiety than girls ( $M = 48.00$ ). The distribution of anxiety scores was normal, indicating uniformity across the sample.

Learning styles reflected moderate preference levels ( $M = 61.40$ ), with girls again scoring slightly higher than boys. Similarly, home environment scores ( $M = 62.40$ ) suggested a generally balanced and supportive environment, with girls perceiving slightly more favourable conditions.

Correlation analysis revealed a moderate negative relationship between academic achievement and academic anxiety ( $r = -0.37$ ,  $p < 0.01$ ), indicating that higher anxiety levels are associated with lower academic performance. In contrast, learning styles showed significant positive relationships with academic achievement, particularly enactive ( $r = 0.285$ ,  $p < 0.01$ ) and figural ( $r = 0.268$ ,  $p < 0.01$ ) styles, while verbal learning style showed a weaker but significant association ( $r = 0.182$ ,  $p < 0.01$ ).

Further analysis indicated that all dimensions of home environment were significantly related to academic achievement. Positive dimensions such as nurturance, reward, and control were associated with higher achievement, whereas negative dimensions such as punishment and rejection were linked with lower performance.

The t-test analysis supported these findings, showing that students with low anxiety performed significantly better than those with high anxiety ( $t = 2.26$ ,  $p < 0.05$ ). Significant differences were also observed across levels of learning styles and home environment dimensions, indicating their meaningful contribution to academic achievement.

Overall, the findings suggest that academic achievement is influenced by a combination of psychological (academic anxiety), cognitive (learning styles), and environmental (home environment) factors. Lower anxiety levels, effective learning strategies, particularly experiential and visual approaches, and a supportive home environment contribute significantly to improved academic performance.

## Conclusion

The study concludes that academic achievement among senior secondary students is significantly influenced by psychological, cognitive, and environmental factors. Academic anxiety negatively affects performance, while learning styles, particularly enactive and figural, positively contribute to achievement. The home environment also plays a crucial role, with supportive conditions enhancing performance and negative practices hindering

outcomes. Overall, improved academic outcomes depend on reduced anxiety, effective learning strategies, and a supportive home environment, highlighting the need for an integrated approach to student development.

### Educational Implications

The findings have important implications for educational practice and policy. Schools should implement counselling, stress management, and supportive classroom practices to reduce academic anxiety. While learning styles are not strong independent predictors, adopting flexible and multimodal teaching strategies can enhance engagement and learning outcomes. The significant role of the home environment emphasizes the need for meaningful parental involvement in creating a supportive and resource-rich setting. Strengthening teacher–parent collaboration is essential to develop a holistic support system that promotes both academic success and students’ emotional well-being.

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