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⊕ www.ijirset.com ⊠ ijirset@gmail.com 🖄 +91-9940572462 🕓 +91 63819 07438



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A Comparative Study of Scholastic Achievement among Arts and Science Stream Students in Relation to their Academic Buoyancy

Prof.Vandana Goswami, Mrs.Pragati Sharma,

Department of Education, Banstali Vidyapith, Jaipur, Rajasthan, India Research Scholar, Banstali Vidyapith, Jaipur, Rajasthan, India

ABSTRACT: The goal of this study is to find out how well students from the Arts and Science streams do in school compared to their level of academic buoyancy. Academic buoyancy is the ability of students to handle academic challenges and everyday problems well. It is a very important factor in determining academic outcomes. The study used a descriptive survey method and included a sample of senior secondary students from both streams that was representative. Standardized tests were used to measure academic buoyancy, and students' academic records were used to measure their academic success. The results showed that Arts and Science students had very different levels of academic buoyancy and scholastic achievement. Also, there was a positive relationship between academic buoyancy and academic academic buoyancy and academic academic buoyancy and academic academic academic academic buoyancy and academic performance in both streams. Science students had higher levels of buoyancy and academic achievement. The study underscores the importance of fostering academic buoyancy as a means to enhance educational performance and suggests targeted interventions to support students across diverse academic disciplines.

KEYWORDS: Academic Buoyancy, Scholastic Achievement, Arts Stream, Science Stream, Comparative Study, Senior Secondary Students, Educational Performance, Student Resilience, Academic Streams,

I. INTRODUCTION

In today's increasingly competitive and complex academic environment, student success is influenced not only by cognitive abilities but also by their capacity to cope with academic challenges and setbacks. Academic buoyancy, a construct introduced by **Martin and Marsh (2008)**, refers to students' ability to effectively deal with the routine academic adversities such as poor grades, exam pressures, or negative feedback. Unlike academic resilience, which addresses more chronic or severe adversities, academic buoyancy focuses on everyday academic demands that can impede learning and achievement (Martin, 2013).

Scholastic achievement, traditionally measured through students' academic performance in examinations or assessments, remains a core indicator of educational effectiveness. However, it is increasingly acknowledged that psychological factors such as motivation, self-efficacy, and emotional regulation significantly influence academic outcomes (Bandura, 1997; Zimmerman, 2000). Among these, academic buoyancy has emerged as a key psychological variable that empowers students to maintain performance and engagement amidst academic stressors.

In the Indian education system, students typically specialize in particular academic streams—Arts, Science, or Commerce—during their senior secondary education. Each stream presents unique cognitive and emotional demands. While Science stream students often face pressure related to rigorous coursework and competitive exams, Arts stream students may struggle with societal perceptions and academic self-concept. These varying experiences may influence both academic buoyancy and scholastic achievement differently across the streams (**Rani & Bhatnagar, 2017**).

The present study is an attempt to explore and compare the scholastic achievement of Arts and Science stream students in relation to their academic buoyancy. Understanding this relationship will help educators, counselors, and policymakers tailor interventions that enhance academic performance by-effectiveness. However, it is increasingly acknowledged that psychological factors such as motivation, self-efficacy, and emotional regulation significantly influence academic outcomes (**Bandura, 1997; Zimmerman, 2000**). Among these, academic buoyancy has emerged



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The present study is an attempt to explore and compare the scholastic achievement of Arts and Science stream students in relation to their academic buoyancy. Understanding this relationship will help educators, counselors, and policymakers tailor interventions that enhance academic performance by This framework assumes a mediating role of academic buoyancy in the relationship between the stream of study and academic achievement. Differences in academic demands, learning styles, and student perceptions across Arts and Science streams are hypothesized to affect students' buoyancy levels, which in turn influence their scholastic outcomes.

Objectives of the Study:

To assess the level of academic buoyancy among Arts and Science stream students.

To compare the scholastic achievement of Arts and Science stream students.

To examine the relationship between academic buoyancy and scholastic achievement among students of both streams.

To determine whether academic buoyancy significantly predicts scholastic achievement in Arts and Science streams

II. HYPOTHESES OF THE STUDY

1. There is no significant difference in academic buoyancy between Arts and Science stream students

2. There is no significant difference in scholastic achievement between Arts and Science stream students.

3. There is no significant relationship between academic buoyancy and scholastic .achievement of Arts stream students. 4. There is no significant relationship between academic buoyancy and scholastic achievement of Science stream students.

III. RESEARCH METHOD AND METHODOLOGY USED FOR THE PRESENT STUDY

The present research adopted a **descriptive method of the causal-comparative and correlational types**. The **c**ausal-comparative method was employed to identify and analyze differences in scholastic achievement and academic buoyancy between students of the **Arts** and **Science** streams.

The **correlational metho**d was used to examine the **relationship** between academic buoyancy and scholastic achievement within each stream.

Tools Used for the Present Study

Academic Buoyancy Scale-Developed by the researcher.

Scholastic Achievement Record

Collected from **school examination results** (recent term-end or annual academic scores). Standardized across all selected schools under the same board.

Hypothesis 1(a):

There is no significant difference in academic buoyancy of students on the basis of their stream (Arts and Science).

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Table 1: Comparison of Academic Buoyancy by Stream

Stream	Ν	Mean	SD	t- value	p-value	Significance
Arts	50	57.75	9.34	-4.11	0.00008	Significant (p < 0.001)
Science	50	65.18	8.74			

Null hypothesis is rejected. There is a significant difference in academic buoyancy between Arts and Science students.

Hypothesis 1(b):

There is no significant difference in scholastic achievement of students on the basis of their stream (Arts and Science).

Table 2: Comparison of Scholastic Achievement by Stream

Stream	Ν	Mean	SD	t-value	p-value	Significance
Arts	50	54.53	12.1 8	-7.63	0.00000000015	Significant (p < 0.001)
Science	50	70.84	8.94			

Null hypothesis is **rejected**. There is a significant difference in scholastic achievement between Arts and Science students.

Hypothesis 2:

There is no significant relationship between academic buoyancy and scholastic achievement among secondary school students.

Table 3: Correlation between Academic Buoyancy and Scholastic Achievement

Stream	Ν	Correlation Coefficient (r)	p-value	Significance	
Arts	50	-0.13	0.385	Not Significant	
Science	50	-0.17	0.230	Not Significant	

Null hypothesis is **retained**. No significant relationship was found between academic buoyancy and scholastic achievement in either stream.

Hypothesis	Result	Interpretation					
H1(a) – Buoyancy by Stream	Rejected	Science students have significantly higher academ buoyancy than Arts students.					academic
H1(b) – Achievement by Stream	Rejected	Science achievem	students ent than A	have rts stud	significantly ents.	higher	scholastic

H2 – Buoyancy vs. Achievement **Retained** No significant correlation between buoyancy and achievement within either stream.



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IV. INTERPRETATION OF RESULTS

Descriptive Analysis:

Science stream students showed higher average scores in both **academic buoyancy** and **scholastic achievement** than Arts stream students.

Standard deviations suggest slightly more variability in Arts students' performance.

t-test Results:

There is a **statistically significant difference** in both academic buoyancy and scholastic achievement between Arts and Science students.

Science students outperformed Arts students significantly in both variables.

Correlation Analysis:

There is **no significant correlation** between academic buoyancy and scholastic achievement within either stream. This indicates that while Science students scored higher overall, academic buoyancy alone may not directly predict achievement.

V. IMPLICATIONS OF THE STUDY

For Educators and School Leaders:

There is a clear need to support Arts stream students in enhancing their academic buoyancy to bridge performance gaps.

Curriculum and Pedagogy:

Tailored interventions focusing on coping strategies, time management, and academic motivation could help Arts students improve their performance

Student Counseling:

Emphasis should be placed on emotional and psychological support for students, especially in the Arts stream, to deal with academic pressures effectively.

VI. CONCLUSION

The present study aimed to compare the **scholastic achievement** of Arts and Science stream students in relation to their **academic buoyancy**. Based on a sample of 100 secondary school students (50 from each stream), the following conclusions were drawn:

Academic Buoyancy and Stream-There exists a significant difference in academic buoyancy between Arts and Science students. Science stream students exhibited higher levels of academic buoyancy (M = 65.18) than Arts stream students (M = 57.75). This indicates that Science students are better able to cope with everyday academic challenges such as examination stress, deadlines, and school workload.

Scholastic Achievement and Stream

A highly significant difference was observed in scholastic achievement between the two streams. Science students (M = 70.84) significantly outperformed their Arts counterparts (M = 54.53). This finding underscores a consistent trend of higher academic performance among students from the Science stream.

Relationship Between Academic Buoyancy and Scholastic Achievement

The correlation between academic buoyancy and scholastic achievement was found to be **statistically non-significant** in both Arts (r = -0.13, p > 0.05) and Science streams (r = -0.17, p > 0.05). This suggests that while buoyancy contributes to coping skills and resilience, it does not directly predict academic performance in either stream within this sample.



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REFERENCES

- Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. Journal of School Psychology, 44(5), 427–445. <u>https://doi.org/10.1016/j.jsp.2006.04.002</u>
- Martin, A. J., & Marsh, H. W. (2008). Academic buoyancy: Towards an understanding of students' everyday academic resilience. Journal of School Psychology, 46(1), 53–83. https://doi.org/10.1016/j.jsp.2007.01.002
- 3. Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W.H. Freeman.
- 4. Creswell, J. W. (2014). Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed.). Pearson Education.
- Martin, A. J., & Marsh, H. W. (2008). Academic buoyancy: Towards an understanding of students' everyday academic resilience. Journal of School Psychology, 46(1), 53–83. <u>https://doi.org/10.1016/j.jsp.2007.01.002</u>
- 6. .**Martin, A. J. (2013)**. Academic buoyancy and academic resilience: Exploring 'everyday' and 'classic' resilience in the face of academic adversity. School Psychology International, 34(5), 488–500.
- 7. Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. Contemporary Educational Psychology, 25(1), 82–91.
- 8. Rani, S., & Bhatnagar, D. (2017). Stream-wise differences in academic stress among senior secondary school students. International Journal of Education and Psychological Research, 6(4), 58–61.









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