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Study of Anxiety and Self-Efficacy among Science and Arts Stream Higher Secondary Level Students

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Abstract:

The present qualitative study explores the relationship between anxiety and self-efficacy among higher secondary students of Science and Arts streams. Anxiety is a crucial psychological factor influencing academic performance, while self-efficacy reflects students' belief in their capabilities. The study aims to understand differences between streams and the interrelationship of these variables. Data were collected through interviews, observation, and document analysis from selected students. Thematic analysis revealed that Science students experience higher academic anxiety due to performance pressure, whereas Arts students exhibit relatively lower anxiety but varying levels of self-confidence. A strong inverse relationship between anxiety and self-efficacy was observed, indicating that higher self-efficacy reduces anxiety levels. The study highlights the importance of psychological support and pedagogical interventions to enhance student well-being and academic success.

Keywords: *Anxiety, Self-efficacy, Higher Secondary Students, Science Stream, Arts Stream, Academic Stress.*

Introduction:

Anxiety is a natural human emotion that is expressed through fear, worry, or uneasiness about a future event or situation. It is a state of physical and mental discomfort that reduces concentration on tasks and can have a negative impact on daily life. It can be more intense than ordinary worry. The theory of self-efficacy was developed by Albert Bandura in 1986. The author of the theory considered self-efficacy as a type of cognitive evaluation that every individual makes about their own competence. Therefore, self-efficacy refers to an individual's judgment of their own ability to organize and structure their activities in order to achieve a particular outcome.

Education at the higher secondary level is a critical phase that shapes students' academic and professional trajectories. During this stage, students often experience heightened anxiety due to academic pressure, career expectations, and social comparison. Anxiety can negatively influence concentration, performance, and overall mental health.Self-efficacy, as conceptualized by Bandura, refers to an individual's belief in their ability to perform tasks successfully. It plays a vital role in motivation, persistence, and emotional regulation. Research indicates that self-efficacy significantly influences students' ability to cope with academic

challenges and reduces anxiety levels. The distinction between Science and Arts streams often leads to differential academic stress. Science students face intense competition and performance expectations, while Arts students encounter different types of academic and social pressures. Therefore, examining anxiety and self-efficacy in these groups is essential.

Significance of the Study

The present study holds considerable significance in the field of educational psychology as it focuses on two crucial psychological constructs—anxiety and self-efficacy—among higher secondary students. Adolescence is a sensitive developmental stage where academic pressure, career expectations, and social influences often lead to heightened emotional stress, which can adversely affect students' academic performance and mental well-being. In this context, understanding anxiety becomes essential, as it directly influences students' concentration, motivation, and learning outcomes. At the same time, self-efficacy, conceptualized within Self-Efficacy Theory by Albert Bandura, plays a pivotal role in shaping students' confidence, persistence, and ability to cope with academic challenges. The study is particularly significant as it compares Science and Arts stream students, thereby highlighting how different academic environments influence psychological experiences. It also contributes to the existing body of knowledge by providing qualitative insights into the inverse relationship between anxiety and self-efficacy. Furthermore, the findings of this study can assist educators, counselors, and policymakers in designing effective interventions, such as stress management programs and confidence-building strategies, to promote students' mental health and academic success. Thus, the study not only enriches theoretical understanding but also offers practical implications for improving educational practices and student well-being (Bandura, 1997; Pajares, 2002).

Review of Literature

A substantial body of research has examined the relationship between anxiety and self-efficacy in educational settings, consistently indicating a significant negative correlation between these two variables. Early theoretical foundations laid by Albert Bandura in his Social Cognitive Theory suggest that self-efficacy influences how individuals perceive and respond to challenging situations, including academic stress. Students with high self-efficacy are more likely to approach difficult tasks with confidence and resilience, whereas those with low self-efficacy tend to experience heightened anxiety and avoidance behavior (Bandura, 1997). Empirical studies further support this relationship. For instance, Pajares (2002) found that self-efficacy beliefs significantly predict academic performance and emotional responses, including anxiety. Similarly, Schunk (1991) emphasized that students with strong self-efficacy demonstrate greater motivation and persistence, which in turn reduces stress levels.Jafar, HamdanMolla, et al (2016) conducted a study on the effectiveness of group Training of CBT – based stress management on anxiety psychological hardiness and General self efficacy among university students. The objective of the study was Aimed at investigating the effectiveness of stress management training in anxiety, Psychological hardiness and General self efficacy among university students. The Method of the study was a quasi experimental intervention including a control group, It was fundamental applied study. The finding of the study there is a significant Difference between the two groups in terms of anxiety hardiness and General selfEfficacy

Research focusing on academic anxiety, particularly based on the work of Charles D. Spielberger, indicates that anxiety arises from perceived threats in evaluative situations such as examinations. Putwain (2007) reported that test anxiety is prevalent among secondary school students and is negatively associated with academic achievement. Further studies by Morales and Pérez-Mármol (2019) revealed that self-efficacy acts as a protective factor against anxiety, enabling students to regulate their emotions effectively. In addition, Chemers, Hu, and Garcia (2001) demonstrated that students with higher self-efficacy exhibit better adjustment to academic challenges and lower stress levels.

Recent research also highlights that self-efficacy mediates the relationship between academic engagement and anxiety, suggesting that enhancing students' confidence can significantly reduce their stress levels (Han & Wang, 2023). Moreover, comparative studies across academic streams indicate that students in highly competitive fields, such as Science, tend to experience greater anxiety due to performance pressure, whereas students in less competitive streams, such as Arts, report relatively lower stress levels (Ahmed et al., 2023). Collectively, these studies establish that anxiety and self-efficacy are closely interconnected and significantly influenced by academic environments, thereby justifying the need for further qualitative exploration at the higher secondary level.

Objectives of the Study

1. To study the level of anxiety among Science and Arts stream students.
2. To examine the level of self-efficacy among Science and Arts stream students.
3. To analyze the relationship between anxiety and self-efficacy.
4. To compare the psychological differences between Science and Arts students.

Methodology

Research Design: Qualitative research design

Sample: 20 higher secondary students (10 Science, 10 Arts) selected through purposive sampling in PaschimMedinipur district of West Bengal.

Tools Used:

- Semi-structured interviews
- Observation
- Case study method

Technique of Data Analysis: Thematic analysis

Analysis and Interpretation

Objective 1: To study the level of anxiety among Science and Arts stream students

The analysis reveals that Science stream students experience a significantly higher level of academic anxiety compared to Arts students. This heightened anxiety is primarily associated with intense academic pressure, frequent evaluations, competitive entrance examinations, and high parental expectations. Science students often expressed fear of failure, examination stress, and concern over future career prospects, which collectively contribute to elevated anxiety levels. In contrast, Arts students reported relatively moderate anxiety, mostly linked to uncertainty about career opportunities rather than immediate academic demands. This variation can be interpreted through Test Anxiety Theory, which suggests that anxiety increases when students perceive academic demands as exceeding their coping abilities. Moreover, the theoretical perspective of Charles D. Spielberger emphasizes that situational stressors, particularly high-stakes examinations, significantly influence students' anxiety levels (Putwain, 2007). Therefore, the academic structure and performance expectations in the Science stream play a crucial role in intensifying anxiety among students.

Objective 2: To examine the level of self-efficacy among Science and Arts stream students

The findings indicate that self-efficacy levels differ both between and within the Science and Arts streams. Science students demonstrate a dual pattern of self-efficacy: high-performing students exhibit strong confidence in their abilities due to repeated success and mastery experiences, whereas average or low-performing students often display low self-efficacy, accompanied by self-doubt and fear of failure. On the other hand, Arts students generally show moderate but more stable levels of self-efficacy, as their academic environment allows greater flexibility and less rigid evaluation. This pattern can be explained through Self-Efficacy Theory developed by Albert Bandura, which highlights that self-efficacy is shaped by mastery experiences, social influences, and emotional states. Students who consistently experience success tend to develop stronger self-beliefs, while repeated academic challenges without adequate support can weaken self-efficacy (Schunk, 1991; Zimmerman, 2000). Hence, the nature of academic engagement and feedback mechanisms significantly influences students' self-efficacy across different streams.

Objective 3: To analyze the relationship between anxiety and self-efficacy

The study clearly demonstrates a strong inverse relationship between anxiety and self-efficacy among higher secondary students. Students possessing high self-efficacy tend to exhibit lower levels of anxiety, as they are more confident in their ability to handle academic challenges and stress. They approach difficult tasks with resilience and view them as opportunities for growth rather than threats. Conversely, students with low self-efficacy experience higher anxiety, often characterized by fear, avoidance behavior, and lack of confidence. This relationship is effectively explained by Social Cognitive Theory, which posits that individuals' beliefs about their capabilities influence their emotional responses and coping strategies. According to Bandura (1997), strong self-efficacy enables individuals to regulate stress and remain composed under pressure, whereas low self-efficacy amplifies perceived threats and anxiety. Empirical research (Pajares, 2002; Morales & Pérez-Mármol, 2019) further supports this finding by establishing that self-efficacy negatively predicts anxiety. Thus, self-efficacy functions as a crucial psychological buffer that mitigates anxiety among students.

Objective 4: To compare the psychological differences between Science and Arts stream students

The comparative analysis highlights distinct psychological characteristics between Science and Arts students, shaped largely by their academic environments. Science students tend to exhibit high achievement motivation, intense academic pressure, elevated anxiety, and fluctuating self-efficacy levels due to continuous evaluation and competition. In contrast, Arts students generally display moderate achievement motivation, lower anxiety levels, and relatively stable self-efficacy, as their learning environment is less competitive and more flexible. These differences can be understood through Achievement Motivation Theory, which explains that individuals in high-performance settings often experience increased stress due to goal-oriented pressures. Additionally, from a cognitive appraisal perspective, Science students are more likely to perceive academic tasks as demanding and high-risk, leading to greater stress, whereas Arts students perceive them as manageable, resulting in lower anxiety. Supporting this interpretation, Chemers et al. (2001) found that students with higher self-efficacy are better able to adapt to academic challenges and maintain emotional stability. Therefore, stream selection significantly influences students' psychological experiences, including their levels of anxiety, motivation, and self-belief.

Discussion of the Study

The findings of the present study provide important insights into the psychological dynamics of anxiety and self-efficacy among higher secondary students, while also contributing to existing theoretical and empirical literature. The higher levels of anxiety observed among Science students reinforce earlier research indicating that academic pressure, competitive environments, and high parental expectations significantly contribute to

student stress (Putwain, 2007). The findings also extend the applicability of Test Anxiety Theory by demonstrating how structural features of academic streams influence students' perception of stress and their emotional responses.

The role of self-efficacy as a protective psychological factor is strongly supported in this study, aligning with the foundational principles of Self-Efficacy Theory. Students with higher self-efficacy not only showed lower anxiety levels but also demonstrated better coping strategies, resilience, and persistence in the face of academic challenges. This finding is consistent with previous studies (Pajares, 2002; Zimmerman, 2000), which highlight self-efficacy as a key determinant of academic success and emotional well-being. The study further emphasizes that self-efficacy is not static but evolves through experiences, feedback, and environmental influences.

The inverse relationship between anxiety and self-efficacy observed in this study also supports the assumptions of Social Cognitive Theory, which explains that cognitive beliefs significantly shape emotional responses. The findings suggest that interventions aimed at enhancing self-efficacy can effectively reduce anxiety among students. For example, providing mastery experiences, positive reinforcement, and supportive learning environments can strengthen students' confidence and reduce their stress levels.

Moreover, the study highlights the importance of considering academic stream as a contextual factor influencing students' psychological experiences. Science students, due to their exposure to high-stakes academic environments, are more vulnerable to stress and anxiety, whereas Arts students benefit from relatively flexible and less competitive conditions. This observation calls for a re-evaluation of educational practices, particularly in Science education, to create a more balanced and supportive learning environment.

The study also has significant implications for educational policy and practice. It suggests the need for integrating psychological support systems, such as counseling services and stress management programs, within schools. Teachers should adopt student-centered pedagogies that emphasize encouragement, constructive feedback, and emotional support. Additionally, reducing excessive examination pressure and promoting holistic development can help in addressing the psychological challenges faced by students.

In conclusion, the discussion underscores that anxiety and self-efficacy are deeply interconnected constructs shaped by academic environments and individual experiences. Enhancing self-efficacy emerges as a key strategy for reducing anxiety and improving students' overall well-being and academic performance. Therefore, educational institutions must prioritize both cognitive and emotional development to ensure holistic student growth

Limitations of the Study

- Small sample size
- Limited geographical area
- Subjectivity in qualitative analysis
- Lack of standardized tools

Conclusion

The study concludes that anxiety and self-efficacy are crucial psychological variables influencing student performance. Science students experience higher anxiety due to academic demands, whereas Arts students show relatively balanced emotional states. A strong negative relationship exists between anxiety and self-efficacy, emphasizing the need to enhance students' confidence to reduce anxiety. Educational institutions must focus on psychological well-being alongside academic development.

Policy Suggestions

- Introduce school counseling services
- Conduct stress management workshops
- Promote student-centered teaching methods
- Encourage positive feedback and motivation
- Integrate life skills education in curriculum
- Reduce excessive examination pressure

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