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Educational Achievement of Secondary School Students: A Study of Gender, Area, and Intelligence Variables

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Abstract

Education is widely recognized as a crucial instrument for individual empowerment and national development. Academic achievement, a key indicator of educational success, is influenced by multiple psychological, social, and environmental factors. The present study aims to examine the educational achievement of secondary school students with respect to gender, geographical area (urban and rural), and intelligence levels. A sample of 300 students was selected using a stratified random sampling method from secondary schools of Petlad Taluka. Standardized tools, including an intelligence test and academic performance records, were utilized for data collection. Statistical techniques such as mean, standard deviation, and t-test were applied for analysis. The findings revealed no significant difference in academic achievement based on gender, whereas significant differences were observed between urban and rural students. Furthermore, intelligence emerged as a strong predictor of academic success. The study highlights the need for improving rural educational infrastructure and fostering cognitive development among students.

Keywords: Academic Achievement, Intelligence, Gender, Rural-Urban Differences, Secondary Education

1. Introduction

- Education is the cornerstone of societal progress and personal development. It not only equips individuals with knowledge and skills but also fosters critical thinking, creativity, and problem-solving abilities. Academic achievement is one of the most important indicators of educational effectiveness and student success. It reflects the extent to which students have acquired knowledge and competencies in various subjects.
- Various factors influence academic achievement, including personal characteristics such as intelligence, socio-economic background, gender, and environmental conditions like school infrastructure and teaching quality. In recent years, researchers have increasingly focused on understanding how these variables interact and impact students' performance.
- Gender differences in education have been widely debated, with some studies suggesting that boys outperform girls in certain subjects, while others indicate no significant differences. Similarly, disparities between urban and rural education systems often lead to unequal academic outcomes. Intelligence, being a cognitive factor, plays a crucial role in determining how effectively students learn and perform academically.

- The present study attempts to analyze the combined and individual effects of gender, geographical area, and intelligence on the academic achievement of secondary school students.

2. Review of Related Literature

- Previous studies have highlighted that academic achievement is a multifaceted phenomenon influenced by both internal and external factors.
- Studies on gender differences (e.g., Hyde, 2005) suggest that differences in academic performance between boys and girls are minimal and often subject-specific.
- Research on rural–urban disparities indicates that urban students generally have better access to educational resources, leading to higher achievement levels.
- Intelligence has consistently been found to have a strong positive correlation with academic performance (Sternberg, 2012).
- However, there is still a need for region-specific studies to understand how these variables interact in different educational contexts, particularly in semi-urban and rural regions like Petlad Taluka.

3. Objectives of the Study

- The study was conducted with the following objectives:
- To study the level of academic achievement among secondary school students.
- To examine the effect of gender on academic achievement.
- To analyze the impact of geographical area (urban and rural) on academic achievement.
- To study the relationship between intelligence and academic achievement.

4. Hypotheses

- The following null hypotheses were formulated:
- There is no significant difference in academic achievement between male and female students.
- There is no significant difference in academic achievement between urban and rural students.
- There is no significant relationship between intelligence and academic achievement.

5. Methodology

5.1 Research Method

- The study employed a descriptive survey method, which is suitable for analyzing existing conditions and relationships among variables.

5.2 Sample

- A sample of 300 secondary school students was selected from schools in Petlad Taluka using a stratified random sampling technique. The sample included:
- Male and female students
- Students from urban and rural areas

5.3 Tools Used

- Standardized Intelligence Test – to measure the intelligence levels of students.
- Academic Achievement Records – obtained from school records to assess student performance.

5.4 Data Collection

- Data were collected directly from schools with proper permissions. Students were administered the intelligence test under standardized conditions.

5.5 Statistical Techniques

- The following statistical methods were used:
- Mean
- Standard Deviation
- t-test
- Correlation analysis

6. Results and Disscution

6.1 Gender and Academic Achievement

- The analysis revealed no significant difference between male and female students in terms of academic achievement. This suggests that both genders have equal capabilities and opportunities in the current educational context.

6.2 Area and Academic Achievement

- A significant difference was observed between urban and rural students, with urban students performing better academically. This may be attributed to:
- Better infrastructure
- Access to learning resources
- Exposure to technology
- Qualified teaching સ્ટાફ

6.3 Intelligence and Academic Achievement

- The study found a significant positive correlation between intelligence and academic achievement. Students with higher intelligence levels tended to perform better academically, confirming that cognitive ability plays a vital role in learning outcomes.

7. Major finding

- No significant gender difference in academic achievement.
- Urban students outperform rural students academically.
- Intelligence has a strong positive impact on academic achievement.
- Environmental factors play a crucial role in shaping student performance.

8. Educational Implication

- The findings of the study have important implications:
- Equal educational opportunities should be maintained for both genders.
- Special attention should be given to rural education development.
- Schools should adopt strategies to enhance students' cognitive abilities.
- Teachers should use differentiated instruction based on student intelligence levels.

9. Limitations of the Study

- The study was limited to Petlad Taluka only.
- Sample size was restricted to 300 students.
- Only selected variables (gender, area, intelligence) were considered.

10. Suggestions for Further Research

- Similar studies can be conducted on a larger geographical scale.
- Additional variables such as socio-economic status and parental education can be included.
- Longitudinal studies can be undertaken to observe changes over time.

11. conclusion

- The study concludes that academic achievement is influenced more by intelligence and environmental factors than by gender. While gender equality in education appears to be improving, disparities between urban and rural students remain a concern. Therefore, there is an urgent need to enhance the quality of rural education by providing better facilities, trained teachers, and access to modern learning tools. Strengthening these aspects will contribute significantly to improving overall educational outcomes.

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