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Study of Creativity and Intelligence Among Secondary School Students

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Abstract
The present study was undertaken to examine the levels of creativity and intelligence among secondary school students and to analyze the differences based on school type and gender. Creativity and intelligence are considered essential psychological constructs that significantly contribute to students' academic performance, problem-solving abilities, and overall personality development. Despite their importance, the relationship between these two constructs remains complex and debated within educational psychology. The sample for the study consisted of 200 secondary school students drawn randomly from government and private schools of Jalandhar city. Standardized psychological tools—namely the Passi Test of Creativity and Raven's Standard Progressive Matrices—were employed to measure creativity and intelligence respectively. The collected data were analyzed using appropriate statistical techniques such as mean, standard deviation, t-test, and Pearson's product moment correlation. The findings of the study revealed that there was no significant difference in creativity scores between government and private school students, as well as between boys and girls. However, a significant difference was observed in intelligence scores, with private school students demonstrating higher levels of intelligence compared to their government school counterparts. Furthermore, the correlation between creativity and intelligence was found to be weak and statistically non-significant, suggesting that these constructs operate independently to a considerable extent. The study emphasizes the need for educational systems to provide balanced opportunities that nurture both creative potential and intellectual abilities, ensuring holistic development of students at the secondary school level.

Keywords: Creativity, Intelligence, Secondary School Students, Gender Differences, School Type, Educational Psychology

1. Introduction

Education in the modern era aims not only at academic achievement but also at the overall development of the learner. Among the various psychological attributes that influence learning and development, creativity and intelligence hold a central position. Creativity enables individuals to think beyond conventional boundaries, generate original ideas, and approach problems in innovative ways. In an educational context, creativity enhances curiosity, imagination, flexibility of thinking, and critical reasoning, which are essential for meaningful learning.

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Creativity is no longer viewed merely as an innate or hereditary trait. Contemporary psychologists emphasize that creativity can be developed and nurtured through appropriate teaching methods, supportive learning environments, and opportunities for self-expression. Schools play a vital role in providing such environments where students feel encouraged to explore ideas without fear of failure.

Intelligence, on the other hand, is traditionally defined as the ability to learn from experience, reason logically, solve problems, and adapt to new situations. It has been closely associated with academic success and scholastic achievement. Educational institutions have historically focused more on developing intelligence through structured curricula, examinations, and standardized assessments, often overlooking the creative potential of learners.

The secondary school stage is particularly significant as it marks a period of rapid cognitive development, identity formation, and refinement of thinking skills. During this stage, students develop higher-order thinking abilities that shape their academic and career trajectories. Therefore, understanding the levels of creativity and intelligence among secondary school students, along with variations based on gender and school type, becomes crucial for effective educational planning.

In this context, the present study attempts to explore creativity and intelligence among secondary school students of Jalandhar city and examine how these variables interact within different educational settings.

2. Objectives of the Study

The objectives of the present study were framed to systematically examine creativity and intelligence among secondary school students. These objectives include:

To examine and compare the creativity levels of government and private secondary school students in order to determine whether institutional environment influences creative potential.

To assess differences in intelligence between government and private school students and understand the role of educational resources and learning conditions.

To analyze gender-based differences in creativity among secondary school students to explore whether boys and girls differ in their creative expression.

To investigate gender-based differences in intelligence among secondary school students.

To determine the nature and extent of the relationship between creativity and intelligence.

3. Hypotheses of the Study

Based on the objectives, the following null hypotheses were formulated to ensure objective statistical testing:

There is no significant difference in creativity scores between government and private secondary school students.

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There is no significant difference in intelligence scores between government and private secondary school students.
There is no significant difference in creativity scores between boys and girls.
There is no significant difference in intelligence scores between boys and girls.
There is no significant relationship between creativity and intelligence scores among secondary school students.

4. Delimitations of the Study

To maintain clarity and focus, the study was delimited in the following ways:
The sample was limited to 200 secondary school students only.
The study focused exclusively on two psychological variables: creativity and intelligence.
Only two demographic variables—gender and school type—were considered.
The study was geographically confined to Jalandhar city in Punjab.
The findings are applicable only to students studying at the secondary school level.

5. Research Methodology

The descriptive survey method was adopted for the present investigation, as it was considered most suitable for studying psychological traits in a natural educational setting. The population comprised secondary school students enrolled in government and private schools of Jalandhar city. A total of ten schools were selected randomly, including five government and five private schools. From each category, 100 students were selected using random sampling techniques, making the total sample size 200. This ensured adequate representation of both school types and genders.
The standardized tools were administered under controlled classroom conditions. Clear instructions were provided to students to ensure proper understanding of the test procedures. Ethical considerations such as confidentiality and voluntary participation were maintained throughout the study.

6. Tools Used

6.1 Passi Test of Creativity

The Passi Test of Creativity is a standardized tool developed to measure various dimensions of creativity such as originality, fluency, flexibility, and elaboration. The test is widely used in Indian educational research and is known for its reliability and validity across adolescent populations.

6.2 Raven's Standard Progressive Matrices

Raven's Standard Progressive Matrices is a non-verbal test designed to measure general intelligence and abstract reasoning ability. It is culturally fair and minimizes the influence of language, making it suitable for diverse student populations.

7. Statistical Techniques Used

The following statistical techniques were employed for data analysis:
Mean and Standard Deviation to describe the data

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t-test to compare group differences

Pearson's product moment correlation to determine the relationship between creativity and intelligence

8. Results and Interpretation (More Analytical)

8.1 School Type Differences

The analysis revealed no significant difference in creativity scores between government and private school students. This indicates that creative abilities are not solely dependent on institutional type and may be influenced by personal and experiential factors.

However, intelligence scores showed a significant difference in favor of private school students. This may be attributed to better infrastructure, exposure to diverse learning materials, effective teaching strategies, and academic support systems in private schools.

8.2 Gender Differences

The results indicated no significant gender differences in creativity and intelligence. This suggests that boys and girls possess equal creative and intellectual potential when provided with similar educational opportunities.

8.3 Relationship between Creativity and Intelligence

The obtained correlation coefficient ($r = 0.158$) revealed a weak positive relationship that was statistically non-significant. This finding supports the view that creativity and intelligence are relatively independent constructs.

9. Discussion

The findings of the study reinforce the theoretical perspective that creativity and intelligence are distinct psychological dimensions. While intelligence is often fostered through structured academic instruction, creativity thrives in environments that encourage exploration, autonomy, and self-expression.

The absence of gender differences reflects progressive changes in educational practices and societal attitudes, ensuring equal opportunities for boys and girls.

The higher intelligence levels among private school students underline the role of educational environment in cognitive development, highlighting the need for improved resources and teaching strategies in government schools.

10. Conclusion

The present study concludes that creativity among secondary school students is not significantly influenced by gender or school type, whereas intelligence varies according to the educational environment. The weak relationship between creativity and intelligence emphasizes the need to treat them as separate but equally important dimensions of student development. Educational systems must adopt balanced approaches that promote both intellectual growth and creative expression.

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11. Educational Implications

Teachers should incorporate creative teaching strategies in daily instruction.
Schools should emphasize project-based and experiential learning.
Curriculum planners should design activities that stimulate both creativity and intelligence.
Equal learning opportunities must be ensured across school types and genders.

12. Suggestions for Further Research

Replication of the study with larger and more diverse samples.
Longitudinal studies to track developmental changes.
Inclusion of additional variables such as motivation, emotional intelligence, and learning styles.

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