

Research Paper

Relationship between Intelligence, Academic Motivation and Academic Achievement among Higher Secondary School Students: A Study

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ABSTRACT

From the study, an attempt was made to examine the relationship between intelligence, academic motivation and academic achievement among the higher secondary school students. The researcher took a sample of 190 students in the present investigation. Cross sectional descriptive method was employed in the study. To determine the relationship between students' academic motivation and academic achievement, students' academic performance and academic motivation scale were analyzed by employing pearson coefficient of correlation. It was found a high correlation between academic achievement and academic motivation. Higher secondary school students have better academic achievement if they have high achievement motivation. Higher secondary school students have better academic achievement if they have a high intelligence quotient. It can be interpreted that the higher the intelligence quotient, the higher the academic achievement of higher secondary school students. It can be concluded that if students have a good environment at school and home, where their intelligence is constantly developed and achievement motivation is sustained, then undoubtedly their academic achievement will also be better.

Keywords: *Intelligence, Academic Motivation, Academic achievement, Intelligence Quotient, Correlation*

Education plays an important role in the development of an individual and society. Education is the fulcrum of progress and development (Seema & Pradeep, 2016). Education is the main means of acquiring knowledge, in this context it can be said that the school plays the most important role as an agency of education. Ultimate aim of education anywhere is to develop a complex human being (Chaaya & Devraj, 2015).

School education is formally provided by the school to the children. Therefore, it is fair to say that the role of the teacher is important in building the personality of the child, who guides the students and develops the inner talent within them.

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Received: July 13, 2023; Revision Received: July 20, 2023; Accepted: July 23, 2023

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The guidance and motivation given by the teachers provide new dimensions to the future of the children, due to which there are immense possibilities for their future to be bright. It would also be fair to say that parental and family background and environment also affect the motivation level. In the field of education, motivation for learning provides an important role. Because a person inspired without any inspiration cannot do any work. Motivation is an art of attraction and seduction, as a result of which the desire and curiosity to do some work arises within the person. Intelligence has been defined as higher level abilities such as abstract thinking, mental ability, problem solving, and decision making, the ability to learn, emotional intelligence, creativity and adjustment to meet the demands of the new environment and society effectively. Intelligence has been defined in several ways. Psychologists are yet to agree on a single definition of intelligence. However, a commonly accepted definition of intelligence refers to the ability to learn from one's experiences, acquire knowledge, and use resources effectively in adapting to new surroundings or solving problems (Sternberg & Kaufman).

More generally, it can be described as the ability to perceive or infer information, and to retain it as knowledge to be applied towards adaptive behaviors within an environment or context. Intelligence is a general capacity of an individual consciously to adjust his thinking to new requirements. 'It is general mental adaptability to new problems and conditions of life (Stern).'

Academic achievement is the result of educational process. It indicates the performance of the students, teachers and an institution in the process of education. The school contributes to various forms of achievement in pupil's lives i.e., social, emotional and physical aspects. It is the concern of both the teachers and parents why some children succeed in school and while others fail to do. It is very essential to take measures to increase the number of children to achieve at a higher level. The effectiveness of any educational system is gauged by the achievement of students whether it is cognitive, affective or psycho-motor domains. It has been indicated that many variables like emotional intelligence, motivation, creativity, interests and aspiration level of the learners and family environment are a few influences of academic achievement.

Motivation is the process responsible for the initiation, intensity and persistence of behaviour. While academic motivation refers to the cause of behaviour that is in a way related to academic functioning and success. Motivation may be regarded as which prompts an individual to act in a particular manner for attaining some specific goal (Mangal, 2018). In the present research researcher intended to investigate the role of Intelligence and Academic Motivation in academic achievement.

Operational definition of variables-

- **Academic Achievement-** Educational achievement refers to the quantitative representation of abilities acquired by the students such as knowledge, understanding, skills, application, etc.
- **Achievement Motivation-** The basic goal of achievement motivation is achievement, those who do any work for achievement are considered motivated by achievement motivation. Motivators can be divided into different categories, if a student wants to be the monitor of the class, it means that gaining power is his motivator.

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- **Intelligence Quotient-IQ** can be represented as a ratio of mental age to chronological age $\times 100$. IQ is a type of standard score that indicates an individual stands in mental ability.
- **Justification of the study-** Researcher tried to investigate the effect of academic motivation and intelligence on academic achievement. Keeping in mind the need of the study, the researcher delimited the research problem.

REVIEW OF RELATED LITERATURE

Ninama (2018) observed that higher achievement motivation level among tribal boys as compared to girls from non-tribal community. Besides, non-tribal commerce stream students show higher level of achievement motivation in comparison to arts stream students of tribal community. Lal (2016) analyzed in his comparative study that both male and female students belonged to non- schedule caste group show indicate achievement motivation as compared to schedule caste students. Anchal Aruna (2013) conducted a study on impact of parenting style on adolescent's academic achievement. In this study 400 boys and 400 girls were taken as a sample. It was found that good parenting influences the academic achievement in a positive way. Gautam, Mohanlal (1991) investigated the impact of socio-economic condition and study habits on academic achievement. It was found that study habits have a high influence on academic achievement.

Objectives of the study

1. To study the relationship between academic motivation and academic achievement among higher secondary students.
2. To study the relationship between intelligence quotient and academic achievement among higher secondary students.
3. To compare high and low Intelligence quotient and academic achievement among higher secondary students.

Hypothesis of the study

- Ho1. There is no significant relationship between Achievement Motivation and Academic Achievement among higher secondary school students.
- Ho2. There is no significant relationship between Intelligence Quotient and Academic Achievement among higher secondary school students.
- Ho3. There is no significant difference between high and low Intelligence quotient and Academic Achievement among higher secondary school students.

Population and Sample

This study was carried out with 190 students (Boys and Girls) studying in higher secondary schools from Dehradun District. Academic achievement scores were obtained from their schools. Intelligence Quotient was measured using I.Q. level table. In the present study cross sectional descriptive method was employed.

Table-1 Sample Distribution

| Boys | Girls | Total |
|------|-------|-------|
| 92 | 98 | 190 |

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Research tools for study

The following instruments have been used for the collection of data in the present research.

1. Collective Mental Ability Test by Dr. S. Jalota (72)
2. Sharma TR Constructed Motivation Test (Revised 2006)

Statistical techniques used in the research: -

1. Median
2. Standard Deviation
3. Standard error deviation
4. T test

Analysis and Interpretation of data

Objective-1

To study the relationship between academic motivation and academic achievement among higher secondary students.

Ho1. There is no significant relationship between Achievement Motivation and Academic Achievement among higher secondary school student.

Table-2 Coefficient of Correlation between Achievement Motivation and Academic Achievement among Higher Secondary School Students

| Variable | Number of Students | Mean | Correlation (r) | Significant level (0.01) |
|------------------------|---------------------------|-------------|------------------------|---------------------------------|
| Academic Achievement | 190 | 423.20 | +0.65 | (Significant) |
| Achievement Motivation | 190 | 29.80 | | |

**** Significant at 0.01 level**

Table 2 depicts that co-efficient of correlation between academic achievement and achievement motivation of higher secondary school students is 0.65 which is highly significant at 0.01 level of significance. So, the null hypothesis, i.e., “There is no significant relationship between academic achievement and achievement motivation of higher secondary school students” is rejected. Hence, there exists a significant positive correlation between these variables.

It indicates that academic achievement and achievement motivation of higher secondary school students are positively correlated with each other. So, it could be concluded that higher secondary school students have better academic achievement if they have more achievement motivation. It can be interpreted that higher the achievement motivation higher the academic achievement of higher secondary school students and vice-versa.

Objective-2

To study the relationship between intelligence quotient and academic achievement among higher secondary students.

Ho2. There is no significant relationship between Intelligence Quotient and Academic Achievement among higher secondary school students.

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Table-3 Coefficient of Correlation between Intelligence Quotient and Academic Achievement among Higher Secondary School Students

| Variable | Number of Students | Mean | Correlation (r) | Significant level (0.01) |
|-----------------------|--------------------|--------|-----------------|--------------------------|
| Academic Achievement | 190 | 423.20 | +0.71 | (Significant) |
| Intelligence Quotient | 190 | 267.80 | | |

**** Significant at 0.01 level**

Table 3 demonstrates that co-efficient of correlation between academic achievement and achievement motivation of higher secondary school students is 0.71 which is highly significant at 0.01 level. So, the null hypothesis, i.e., “There is no significant relationship between academic achievement and intelligence quotient of higher secondary school students” is rejected. Hence, there exists a significant positive correlation between these variables. It shows that academic achievement and intelligence quotient of higher secondary school students are positively correlated with each other. So, it could be concluded that higher secondary school students have better academic achievement if they have high intelligence quotient. It can be interpreted that higher the intelligence quotient higher the academic achievement of higher secondary school students.

Objective-3

To compare high and low Intelligence quotient and academic achievement among higher secondary students.

Ho3. There is no significant difference between high and low Intelligence quotient and Academic Achievement among higher secondary school students.

Table-4 Comparison of High and Low Intelligence Quotient with Academic Achievement

| Variable | Number of Students | Mean | Standard Deviation | t-value | Significant level (0.01) |
|----------------------------|--------------------|--------|--------------------|---------|--------------------------|
| High Intelligence Quotient | 89 | 269.20 | 5.83 | 3.14 | (Significant) |
| Low Intelligence Quotient | 101 | 267.80 | 4.23 | | |

**** Significant at 0.01 level**

Table 4 reveals that ‘t’ value of the academic achievement of higher secondary school students having high and low I.Q. (‘t’ = 3.14) is significant at 0.01 level. Hence, the null hypothesis framed earlier, “There is no significant difference in academic achievement of higher secondary school students having high and low I.Q.” is rejected. This indicates that the students having high I.Q. have better academic achievement than the students having low I.Q. In terms of mean, it can be seen that mean score of higher senior secondary school students having high I.Q. i.e., 269.20 is higher than mean scores of higher secondary school students having low I.Q. i.e., 267.80. This shows that high I.Q. affects the student’s mental, emotional development and academic performance.

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Findings

1. High correlation was found between academic achievement and academic motivation. Higher secondary school students have better academic achievement if they have high achievement motivation.
2. Higher secondary school students have better academic achievement if they have high intelligence quotient. It can be interpreted that higher the intelligence quotient higher the academic achievement of higher secondary school students.
3. The students having high I.Q. have better academic achievement than the students having low I.Q.

CONCLUSION

Psychologists recognize that educational achievement is paramount in educational psychology. The assessment of educational achievement becomes a remarkable process in psychology. So, psychologists have focused on identifying the interrelationship between academic achievement and various psychological variables. Educational achievement is directly or indirectly affected by intelligence, achievement motivation level, etc. If students have a good environment at school and home, where their intelligence is constantly enhanced and achievement motivation is sustained, thus undoubtedly their academic achievement will also be better.

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Acknowledgement

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Pokhriyal, A.K. & Pangtey, U.M. (2023). Relationship between Intelligence, Academic Motivation and Academic Achievement among Higher Secondary School Students: A Study. *International Journal of Indian Psychology*, 11(3), 1049-1054. DIP:18.01.100.20231103, DOI:10.25215/1103.100