



Academic Achievement of High School Students in Relation to Multiple Intelligence

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ABSTRACT

This study aims to discover the academic achievement of high school students in relation to multiple intelligence. This study was conducted on 530 High School Students in Puducherry Region. The Normative survey method has been followed and simple random sampling has been used in administration of the research tools. For Academic Achievement the marks scored by the X standard students in the Annual Examination were used and Multiple Intelligence Test (MIT) Constructed and Validated by the Investigator (2023) in the present study covers the following five dimensions' multiple intelligence (i) Linguistic Intelligence, (ii) Logical-Mathematical Intelligence, (iii) Naturalistic Intelligence, (iv) Interpersonal Intelligence and (v) Intrapersonal Intelligence. Finding revealed that the Academic Achievement is average and also Multiple Intelligence is average. This study also found that there is significant difference in the Academic Achievement of High School Students in respect of Gender, there is significant difference in the Multiple Intelligence of High School Students in respect of Gender, there is significant and positive relationship between Academic Achievement and Multiple Intelligence and its different dimensions of High School Students.

Key Words: *Academic Achievement, Multiple Intelligence, Gender and High School Students*

1. Introduction

Academic achievement is one of the most important aspects of a student entire school life. It shows the overall performance of how well the student has performed or how low the student has performed. Education is an honored right as it is associated with social and economical benefits. It also gives freedom in context to social mobility and transforming their levels of life in the future. The academic achievement dream still exists in all human minds as it grants a life of prosperity and wealth. Academic achievement is the distinctiveness of the capability to acquire knowledge and skills efficiently and effectively. Reiger (2011), states that "Academic achievement is important for the successful development of young people in society. Students who do well in school are better able to make the transition into adulthood and to achieve occupational and economic success."

Multiple Intelligence (MI) was developed by Dr. Howard Gardner, an American developmental Psychologist and Professor of Education at Harvard University in the book 'Frames of Mind' in 1983. He initially proposed eight

different intelligences for a range of human potentials in children and adults. This study endeavors to delve into the multifaceted realm of multiple intelligences among higher secondary school students, aiming to unveil the diverse array of cognitive capacities, talents, and potentials that characterize their intellectual profiles.

2. Significance of The Study

The academic achievement is important from different point of views. It is sometimes used in individual and societal perspective. Academic achievement is also vital for educational and psychological research perspective. From individual point of view, academic achievement is an important predictor of vocational careers and personal prosperity in terms of social, economic and psychological capital. School grades and scores on academic achievement tests are used in admission in schools and colleges as well as in selection parameter for several jobs.

Traditional measures of intelligence often focus solely on academic performance, neglecting the diverse array of cognitive abilities and talents that students possess. By investigating multiple intelligence levels among high school students, this study aims to provide a more holistic understanding of their intellectual profiles, encompassing linguistic, logical-mathematical, interpersonal, intrapersonal, and naturalistic intelligences.

3. Operational Definition of Key Terms

Academic Achievement

Academic achievement refers to the students' capacity to fulfil assignments and meet learning objectives in a variety of subjects. Objective metrics, like final course grades and grade point averages, are commonly used to measure academic achievement. In the present study, the academic achievement refers to marks secured by the high school students in the annual examination marks in school record.

Multiple Intelligence

Multiple Intelligence in this research refers to score obtained by the high school students in the research tool Multiple Intelligence Test.

4. Objectives of the Study

The following objectives have been formulated for the present study:

1. To find out the level of Academic Achievement of High School Students.
2. To find out the level of Multiple Intelligence and its different dimensions of High School Students.
3. To find out, if there is any significant difference in the Academic Achievement of High School Students with regard to the gender.
4. To find out, if there is any significant difference in the Multiple Intelligence and its different dimensions of High School Students with regard to the gender.
5. To find out, if there is any significant relationship between Academic Achievement and Multiple Intelligence and its different dimensions of High School Students.

5. Hypotheses of the Study

1. The level of Academic Achievement of High School Students is low.
2. The level of Multiple Intelligence and its different dimensions of High School Students is low.

3. There is no significant difference in the Academic Achievement of High School Students with regard to the gender.
4. There is no significant difference in the Multiple Intelligence and its different dimensions of High School Students with regard to the gender.
5. There is no significant relationship between Academic Achievement and Multiple Intelligence and its different dimensions of High School Students.

6. Method of the Study

Normative survey method was adopted in the present study.

7. Sample Used

Simple random sampling has been employed to collect the data from 530 High School Students studying in Puducherry Region.

8. Tools Used

In order to collect the required data, For Academic Achievement the marks scored by the X standard students in the Annual Examination were used and Multiple Intelligence Test (MIT) Constructed and Validated by the Investigator (2023) in the present study covers the following five dimensions' multiple intelligence (i) Linguistic Intelligence, (ii) Logical-Mathematical Intelligence, (iii) Naturalistic Intelligence, (iv) Interpersonal Intelligence and (v) Intrapersonal Intelligence.

9. Analysis of Data and Interpretation

The data collected were descriptively analyzed by employing the following statistical techniques:

1. Descriptive Analyses
 - i. Measures of central tendency (Mean)
 - ii. Measures of variability (Standard Deviation)
2. Differential Analyses ('t' test and 'F' test) and
3. Co-relational Analyses (Karl Pearson Product Moment Correlation)

Descriptive Analysis

Hypothesis No.1

The level of Academic Achievement of High School Students is low.

Table 1

Mean and Standard Deviation in respect of Academic Achievement of High School Students

| Variable | N | Mean | SD |
|----------------------|-----|--------|-------|
| Academic Achievement | 530 | 346.36 | 67.90 |

It is evident from the Table-1, the calculated mean score of entire sample is found to be 343.57 and the standard deviation value is 67.90 respectively, which indicates that the mean score lies between the average value

(279-413), so the framed hypothesis (1) is rejected. Hence, it is inferred that the level of Academic Achievement of High School Students is average.

Hypothesis No.2

The level of Multiple Intelligence and its different dimensions of High School Students is low.

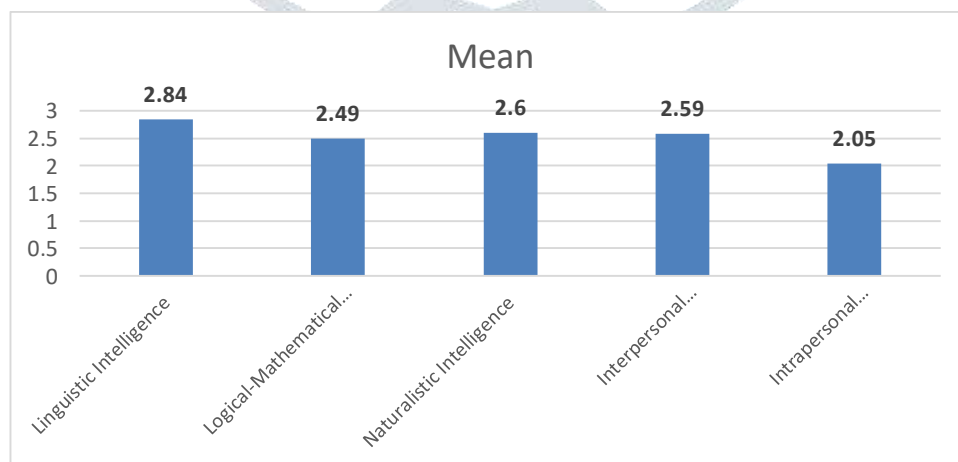
Table 2
Mean and Standard Deviation in respect of Multiple Intelligence and its different dimensions of High School Students

| Dimensions of Multiple Intelligence | N | Mean | SD |
|-------------------------------------|------------|--------------|-------------|
| Linguistic Intelligence | 530 | 2.84 | 0.63 |
| Logical-Mathematical Intelligence | 530 | 2.49 | 0.46 |
| Naturalistic Intelligence | 530 | 2.60 | 0.40 |
| Interpersonal Intelligence | 530 | 2.59 | 0.41 |
| Intrapersonal Intelligence | 530 | 2.05 | 0.34 |
| Multiple Intelligence | 530 | 11.48 | 2.91 |

It is evident from the Table-2, the calculated mean score of entire sample is found to be 11.48 and the standard deviation value is 2.91 respectively, which indicates that the mean score lies between than the average value (11 - 19), so the framed hypothesis (2) is rejected. Hence, it is inferred that the level of Multiple Intelligence of High School Students is average and it is also found that Linguistic Intelligence, Logical-Mathematical Intelligence, Naturalistic Intelligence, Interpersonal Intelligence are average and Intrapersonal Intelligence is low.

Figure 1

Bar Diagram Showing the Mean and Standard Deviation Score of Multiple Intelligence and its different dimensions.



Differential Analysis

Hypothesis No.3

There is no significant difference in the Academic Achievement of High School Students with regard to the gender.

Table-3

Significant Difference among Academic Achievement scores of High School Students with regard to Gender

| Variable | Gender | N | Mean | SD | 't' Value | Level of Significance at 0.05 Level |
|----------------------|--------|-----|--------|-------|-----------|-------------------------------------|
| Academic Achievement | Male | 232 | 341.60 | 68.45 | 4.07 | Significant |
| | Female | 298 | 364.85 | 70.30 | | |

In order to find out whether there is any significant difference between male and female High School Students in respect of their Academic Achievement, 't' value is calculated. The 't' ratio found to be 4.07 at 0.05 level and it is represented in table-3. The 't' value is higher than the table value. Hence the stated hypothesis is rejected. It is inferred that there is significant difference between male and female High School Students in respect of their Academic Achievement.

Hypothesis No.4

There is no significant difference in the Multiple Intelligence and its different dimensions of High School Students with regard to the gender.

Table-4

Significant Difference among Multiple Intelligence and its different dimensions scores of High School Students with regard to Gender

| Dimensions of Multiple Intelligence | Gender | N | Mean | SD | 't' Value | Level of Significance at 0.05 Level |
|-------------------------------------|--------|-----|-------|------|-----------|-------------------------------------|
| Linguistic Intelligence | Male | 232 | 3.16 | 0.76 | 2.02 | Significant |
| | Female | 298 | 2.44 | 0.50 | | |
| Logical-Mathematical Intelligence | Male | 232 | 2.15 | 0.45 | 2.56 | Significant |
| | Female | 298 | 2.98 | 0.52 | | |
| Naturalistic Intelligence | Male | 232 | 2.52 | 0.40 | 2.38 | Significant |
| | Female | 298 | 3.09 | 0.41 | | |
| Interpersonal Intelligence | Male | 232 | 2.52 | 0.40 | 2.76 | Significant |
| | Female | 298 | 3.06 | 0.51 | | |
| Intrapersonal Intelligence | Male | 232 | 1.94 | 0.34 | 2.26 | Significant |
| | Female | 298 | 2.34 | 0.37 | | |
| Multiple Intelligence | Male | 232 | 10.14 | 2.95 | 2.03 | Significant |
| | Female | 298 | 12.45 | 3.84 | | |

In order to find out whether there is any significant difference between male and female High School Students in respect of their Multiple Intelligence, 't' value is calculated. The 't' ratio found to be 2.03 at 0.05 level and it is

represented in table-4. The 't' value is higher than the table value. Hence the stated hypothesis is rejected. It is inferred that there is significant difference between male and female High School Students in respect of their Multiple Intelligence and also found that all dimensions is significant.

Correlation Analysis

Hypothesis No.5

There is no significant relationship between Academic Achievement and Multiple Intelligence and its different dimensions of High School Students.

Table – 5

Showing the correlation values between Academic Achievement and different dimensions of Multiple Intelligence of High School Students

| Dimensions of Multiple Intelligence | N | 'r' value | Level of Significance |
|-------------------------------------|------------|----------------|-----------------------|
| Linguistic | 530 | 0.221** | Significant |
| Logical-Mathematical | 530 | 0.238** | Significant |
| Naturalistic | 530 | 0.241** | Significant |
| Interpersonal | 530 | 0.162* | Significant |
| Intrapersonal | 530 | 0.173** | Significant |
| Multiple Intelligence | 530 | 0.395** | Significant |

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table-5 shows that, the co-efficient of correlation between Academic Achievement and Multiple Intelligence of High School Students is found to be [N=530, r=0.395 at 0.01 level] which indicates that there is a positive correlation between Academic Achievement and Multiple Intelligence scores. Therefore stated hypothesis is rejected and it is concluded that there is a positive and significant relationship between Academic Achievement and Multiple Intelligence of High School Students.

10. Findings of the Study

- The level of Academic Achievement of High School Students is average.
- The level of Multiple Intelligence of High School Students is average and it is also found that Linguistic Intelligence, Logical-Mathematical Intelligence, Naturalistic Intelligence, Interpersonal Intelligence are average and Intrapersonal Intelligence is low.
- There is significant difference between male and female High School Students in respect of their Academic Achievement.
- There is significant difference between male and female High School Students in respect of their Multiple Intelligence and also found that all dimensions is significant.

- There is a positive and significant relationship between Academic Achievement and Multiple Intelligence of High School Students.

11. Conclusion

There are different types of students, and a corresponding instructional approach is necessary to motivate students to learn effectively. These multiple intelligence can enhance through creative strategies, appropriate instructional materials, and a stimulating and nurturing environment. The levels of academic achievement of the high school students is average. There is significant and positive relationship between the high school students' multiple intelligences and its different dimensions and their academic achievement.

12. References

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