

To Study the Mathematical Reasoning Ability of High school Boys Students of Different Boards of Ahmadabad City

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Abstract:

India is the largest democracy in the world, the 6th largest country in the world and one of the most ancient and living civilizations. India has an ancient tradition of education. The world's first university was in Takshashila in 700 B.C. Indian mathematicians introduced the zero, the decimal system and the method of multiplication. Education is still highly regarded in India. States have their own boards and national boards as well in the same state. People have freedom to choose any board of their preference.

Human beings are the unique product of their creation and evolution. In contrast to other forms of animal life, their more highly developed nervous system has enabled them to develop sounds and symbols that make possible the communication and recording of their questions, observations, experiences and ideas. This study is focusing on mathematical reasoning ability of boy students of different boards.

Introduction

The development of any nation depends on proper planning of its manpower. In present times it is necessary to measure powers of an individual and to guide him properly. The power of head, hand and heart of an individual should be measured properly. We can have a rough idea of his powers thro' his educational achievements and our own observations. Thus various types of tests are necessary.

“Various types of aptitude tests are used for measuring powers of students. In recent times for making for cast of progress in various professions the aptitude tests are being used. Actually it is not proper. Because in many professions machine power, agility of hands and fingers, power of space and logical power are required in addition to the aptitude ability. Hence different types of tests become necessary.”

K. G. Desai and H. G. Desai.

Types of Reasoning:

- 1-Deductive Reasoning
- 2-Inductive Reasoning
- 3-Analogical Reasoning
- 4-Problem Solving Reasoning

- (1) **Deductive Reasoning:** This deductive method, moving from the general assumption to the specific application, made an important contribution to the development of modern problem solving. But it was not fruitful in arriving at new truths. The acceptance of incomplete or false major premises that were

based on old dogmas or unreliable authority could only lead to error. Semantic difficulties often resulted from shifting definitions of the terms involved.

- (2) **Inductive Reasoning:** The method of inductive reasoning proposed by Bacon, a method new to the field of logic but widely used by the scientists of his time, was not hampered by false premises, by the inadequacies and ambiguities of verbal symbolism, or by the absence of supporting evidence.

Different Approaches of Reasoning:

For measurement of Reasoning there are three main approaches are prevailed.

- Thinking
- Logical
- Trail and Error

.Furthermore, when we speak of a person's reasoning for specified activity, we do not make any assumptions regarding the degree to which it depends upon innateness or acquisition. A Reasoning test is given to an individual in order to obtain a measure of his promise or essential teach ability in a given area. Although they make no assumptions regarding the roles of "nature versus nature" in this matter, clinicians and guidance counselors cannot ignore a person's past experience in evaluating his performance on Reasoning tests.

Some Definition of Reasoning

- "Reasoning is the term applied to highly, purposeful controlled selective thinking."
- "Reasoning is the ability to utilize the past experiences in the drawing of practical and theoretical conclusion and to solve problems."

Gates

Win Sent

Characteristics of Reasoning Ability

- Reasoning is acquired (boys/girls) in heredity by birth.
- Positive attitude and skill and training are necessary for maintaining the Reasoning.
- The level of the Reasoning may be lower of higher and it cannot be increase through training.
- Reasoning and Logical both are different to each other.
- Individual differences can be seen in the Reasoning.
- The level of various Reasoning may differ individual to individual.

Rational of the study:

There were many related such study conducted in the past. But all previous studies were on other subject but no one concerned on girl students of different boards so this study has given idea about different boards and their boy's students Mathematical Reasoning Ability.

Variables:

- **Independent Variables: 1. Boards:** (i) GSEB (ii) CBSE (iii) ICSE **2. Gender:** (i) Girls (ii) Boys and **3. Standard :** Xth
- **Depends Variables :** Mathematical Reasoning Ability Test Scores (MRA)

Aim and Objectives

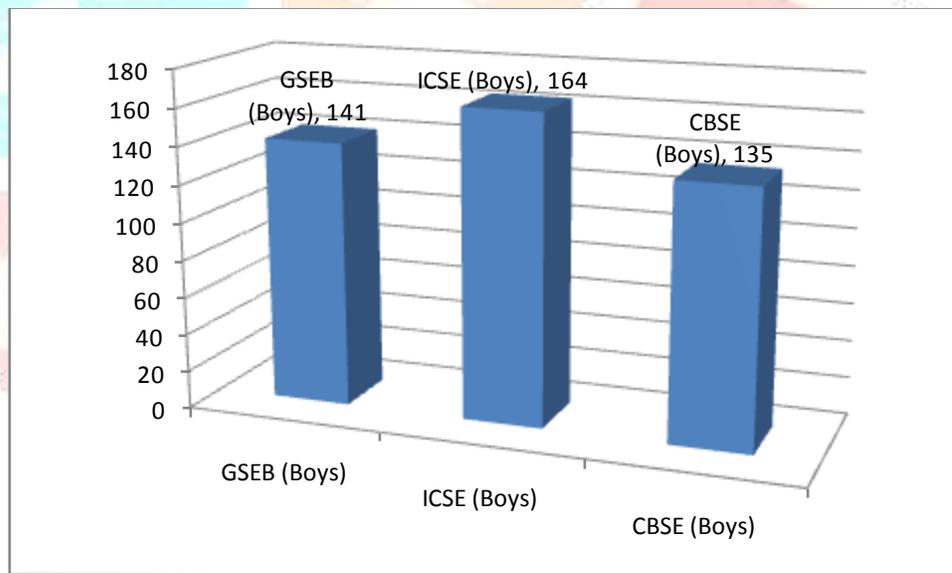
- ❖ To study the effect of board on mathematical reasoning ability (MRA) of the high school Boys students.
- ❖ To study the effect of interaction between different boards on mathematical reasoning ability (MRA) of the high school Boys students.
- ❖ To study the effect of interaction among independent variables on mathematical reasoning ability (MRA) of different boards students.

Hypothesis of the study

- ▶ H_{01} : There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of GSEB and Boys students of CBSE.
- ▶ H_{02} : There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of GSEB and Boys students of ICSE.
- ▶ H_{03} : There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of ICSE and Boys students of CBSE.

Population and Sample of the Study

The inquiry based on a small fraction of units from the population is called a sample. In the present research, 651 students of standard Xth were the sample of Ahmedabad city of Gujarat State.



Tool of the Study:

Any instrument used to collect data consistent with the objectives of the study is known as tool. In the research, the researcher will use the following tools to collect the data.

Tool :

Self prepared Mathematical Reasoning Ability test for the students of Standard X of different board was used to measure level of achievements in maths.

Method of the Study:

Survey method was adopted to know the extent of Mathematical Reasoning Ability of high school students of different boards of Ahmedabad city. Self prepared Mathematical Reasoning Ability test for the students of Standard X of different board was used to measure level of achievements in maths. In the present study, the

researcher has divided whole the educational research in the various parts and prepared it like that the whole research work can get proper justice.

Limitation of Study

There are various limitations in every research. If any question is to be resolved widely then for that more time and more persons are to be needed.

- Other than Gujarat State of India are not included in the present research.
- Other than English medium schools of standard Xth of Gujarat State are not included in the present research.
- Other than Three Board (CBSE, ICSE, GSEB) of India are not included in the present study

Data collection and analysis:

Investigator collected raw data, gave them scores to each students of different boards and arrange the scores in sequence based on the study demands. Investigator used **t-test** to study the hypothesis. And compare their mean scores to give the opinion based on the objectives.

Descriptive Statistics

GSEB (Boys)		ICSE (Boys)		CBSE (Boys)	
Mean	76.99	Mean	84.31	Mean	80.05
Standard Error	1.56	Standard Error	1.51	Standard Error	1.73
Median	81.00	Median	85.00	Median	79.00
Mode	89.00	Mode	85.00	Mode	63.00
Standard Deviation	18.51	Standard Deviation	19.31	Standard Deviation	20.13
Sample Variance	342.52	Sample Variance	372.76	Sample Variance	405.32
Kurtosis	-0.44	Kurtosis	-0.52	Kurtosis	-0.85
Skewness	-0.34	Skewness	-0.33	Skewness	0.02
Range	95.00	Range	84.00	Range	84.00
Minimum	25.00	Minimum	35.00	Minimum	33.00
Maximum	120.00	Maximum	119.00	Maximum	117.00
Total (N)	141.00	Total (N)	164.00	Total (N)	135.00

Study of null hypothesis:

Study-1

To compare the respondents of CBSE Boys students and GSEB Boys students of standard Xth. It can be observed that the value of 't' is 1.31 which is less than 1.96(0.05) there for, Ho₁₁: There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of GSEB and Boys students of CBSE is **accepted**. It is also seen (Mean score of CBSE Boys is 80.65 and GSEB Boys is 76.99) that CBSE boys students are more superior to GSEB Boys students.

Study-2

To compare the respondents of ICSE Boys students and GSEB Boys students of standard Xth. It can be observed that the value of t is 3.37 which is more than 1.96(0.05) there for, Ho₁₂: There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of GSEB and Boys students of ICSE. **is not accepted**. It is also seen (Mean score of ICSE Boys is 84.31 and GSEB Boys 76.99) that ICSE boys students are more superior to GSEB Boys students.

Study-3

To compare the respondents of ICSE Boys students and CBSE Boys students of standard Xth. It can be observed that the value of 't' is 1.86 which is less than 1.96(0.05) there for, Ho₁₃: There will be no significant difference between the mean score of Mathematical Reasoning Ability of Boys students of ICSE and Boys students of CBSE. **is accepted.** It is also seen (Mean score of ICSE Boys is 84.31 and CBSE Boys is 80.05) that ICSE boys students are more superior to CBSE Boys students.

Findings:

- It is also seen that (Based on their Mean scores of Mathematical Reasoning Ability) CBSE Boys students are more superior to GSEB Boys students.
- It is also seen that (Based on their Mean scores of Mathematical Reasoning Ability) ICSE Boys students are more superior to GSEB Boys students.
- It is also seen that (Based on their Mean scores of Mathematical Reasoning Ability) ICSE Boys students are more superior to CBSE Boys students.

Conclusion:

On the basis of the findings of the study, investigator can say that Mathematical Reasoning Ability of Boys students can improve by giving intence practic through sceintific method. So different boards should provide more opportunities to improve their Mathematical Reasoning Ability. And Government should include in the education corriculum of their respective standerd.

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