

Comparative Study of Mathematical Reasoning Ability of High School Students of Different Boards, Design

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Abstract: Uniqueness is the most beautiful thing of the God's creation. All the species are unique and their own ecosystem. We can't make each one identical but we can identify the differences among them. As we all know, India is an old civilized and heritage country, has unique education system from ascent times. After independence India divided into different states and gave autonomy (to make its own curriculum) to give education in the state's pupils. So we have state boards (GSEB, HSEB, BSEB, etc.) And central boards (ICSE and CBSE). All boards have their own text books and their own syllabuses for different subject. All the students follow their board syllabus but after completion of 10th standard, the syllabus of all the boards is almost same, which becomes difficult to cope up with for some students where as it is comparatively easy for students of other boards. 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 their powers throw their educational achievements and our own observations. Thus various types of tests are necessary.

Keywords: Indian Schooling System, state boards, central boards, own ecosystem.

1. INTRODUCTION

Indian Schooling System:

India's education system is referred to as ten + two + three system. The first ten years of education are, theoretically, obligatory. Children attend pre-primary schools as early as at the age of five. Pre-primary schools are supposed to prepare children for everyday school life and are followed by primary schools. At the age of eleven students in India leave primary school and go to middle school. After four years, at the age of fourteen, they have to take exams in order to successfully finish middle school. At this point, the ten year compulsory education is finished. Those students that want to continue their education have to go to a higher secondary school after middle school which lasts two years and prepares them for vocational colleges. Their programmes take three years and are more related to practice than universities. However, students can also enroll in a university programme after college.

Different Concept of Reasoning:

“Reasoning is the ability to utilize the past experiences in the drawing of practical and theoretical conclusion and to solve problems.”

Win Sent

“Reasoning is innate capacity for or ability in a given line of endeavor such as a particular art. Subject or vocation.”

Dictionary of Education

Mathematical reasoning:

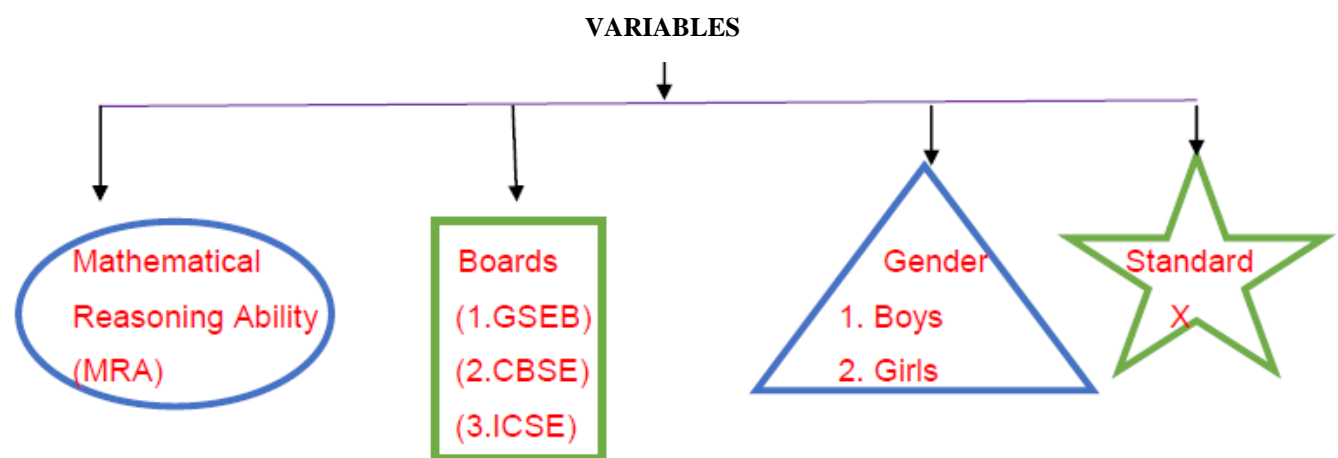
It is the critical skill that enables a student to make use of all other mathematical skills. With the development of mathematical reasoning, students recognize that mathematics makes sense and can be understood.

Use of reason, especially to form conclusions, inferences, or judgments.

- Evidence or arguments used in thinking or argumentation.
- The act or process of drawing conclusions from facts, evidence, etc
- The arguments, proofs, etc, so adduced
- The act or process of a person who reasons.
- The process of forming conclusions, judgments, or inferences from facts or premises.
- The reasons, arguments, proofs, etc., resulting from this process.

From the above definitions investigator come up with following postulate

- Reasoning is acquired in heredity by born.
- Favorable circumstances and training is necessary for maintaining the Reasoning.
- The level of the Reasoning may be less or more and it can be increased through training.
- Reasoning and Logical both are different aspects.
- Individual differences exist in the Reasoning.
- Many kinds of specific Reasoning are existing.
- The level of various Reasoning may be differing in a person.



Objectives of the study:

The clear object to make success out of any work or any definite reason behind to do any work is said the object. Without object, no one can reach to the path of the success.

The objects of the present research are as under:

- To construct a mathematical reasoning ability (MRA) test for the high school students of different board.
- To standardize a mathematical reasoning ability (MRA) test for the high school students of different board.

2. THE HYPOTHESIS

A hypothesis is formulated in such a way that this hunch can be tested. Based on the findings of the subsequent research, the hypothesis is supported or rejected and more hypotheses are formulated to continue the process of building as cohesive theory. The most common use of hypotheses is to test whether an existing theory can be used to solve problem informal hypotheses that can be tested directly.

Hypothesis of the Study:

Ho₁: There will be no significant difference between the mean score of Mathematical Reasoning Ability of students of GSEB and students of CBSE.

Ho₂: There will be no significant difference between the mean score of Mathematical Reasoning Ability of students of GSEB and students of ICSE.

Ho₃: There will be no significant difference between the mean score of Mathematical Reasoning Ability of students of CBSE and students of ICSE.

The Research motivated the students to learn mathematics for the development of their mind and to sharpen their test and reasoning ability and their Intelligence Quotient.

The questions related to logical ability are asked in competitive Examinations for recruitment of clerks in the Banks, Officers in L.I.C., I.A.S., IPS. & G.P.S.C. Officers, Exams of NET & SLET for lecturers in University and Colleges and Exam of "National Merit Scholarship" by N.C.E.R.T. officers have to use their logical ability for taking decisions in practical life for so many times. It is necessary to measure the powers of the children before giving them guidance in School and Colleges. Logical power is also one of the abilities hence its measurement has become necessary. The subject is selected with a view to know about the logical power of a student and its improvement for taking decision regarding his future. Investigator is working on the above explained topics. It is in the process of finalizing tool on mathematical reasoning ability in the guidance of related field experts. As soon as the Tool is finalized research scholar will standardize the tool.

Limitation of the Study:

Limitations of the study are as follows:

1. This study is limited to 10th standard student of different board of Ahmedabad City (if investigator is not able to get desire sample of ICSE board schools as they are limited so investigator can go beyond Ahmedabad City but within the Gujarat State).
2. The study is limited to English Medium Schools.

Population and Sample:

In present researcher has decide to conduct Mathematical reasoning test for the students of 10th standard of different board. Therefore the student studying in English medium high school of Ahmedabad City become the population of the study. And approximately 2000 students of different boards of Gujarat State will be the sample of the research.

Tool of Study:

Mathematical Reasoning Ability test will be prepared and standardized (piloting) by the investigator with the help of area related expertise. There will be objective type question having four options in each question.

Research Method:

Survey method will be used in the research.

3. DATA ANALYZE TECHNIQUE

The Mathematical Ability of High School students of different board, test will be given to students of Ahmedabad City and will obtain answers. All the test paper of the test will check and give scores. The data will gather for statistical analysis. The data will be classified according to variables like gender, boards and standards, frequency distribution table will prepare and mean, standard deviation will calculate. In order to know the significance of creativity of the group wise student, t-value will be found. The hypothesis will be tested using critical ratio (t) value calculation.

4. CONCLUSION

Under the globalized education system, the world has become common curriculum in many school. Due to this reason many changes will take place in state boards and national boards with international educational system. We have to make a joint and common education curriculum based on requirement of each country. This will lead to education improvement

and skill development in the country. If we are able to find and develop the Mathematical Reasoning ability of our student, it will lead to compete at not only national level but at international level also. Investigator studies the literature review test, some other test and its study. With the help of these studies the investigator comes to know the important components of the test, different matter of finding reliability and validity, size of samples to be selected etc.

After the study of related literature, investigator uses the gained knowledge of this study in the following points

- In deciding the types of items
- For fixing the size of sample.
- Process of construction and standardization of test.
- Administration of test.
- Method of finding conclusions.

After surveying various researcher studies and comprehensive discussion of related researchers, the investigator was enlighten for the future planning of his own study. He was benefited to fix up subtests, selection of content and clear about analysis and variety of items and process of standardization

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