NUMERICAL ABILITY OF HIGH AND LOW ACHIEVERS OF IX STANDARD STUDENTS: A COMPARATIVE STUDY

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Abstract

In the present study the researcher has collected the data from the sample of 374 students of IX standard, studying in C.B.S.E. and G.S.E.B. affiliated schools of Ahmedabad city, Gujarat. The data was collected by using the Standardized tool, which was standardized by K. H. Yadav. The method for collection of data was survey method. The interpretation of the data was done with statistical method, which involves Mean, Standard deviation and t-test. Finally the conclusion was drawn and the results were revealed.

Keywords: *Numerical Ability, High Achievers, Low Achievers, IX Standard Students*

In compare to animals man is considered to be capable with certain cognitive abilities which make him a rational being. He can reason, discriminate, understand, adjust and face a new situation more intelligently. Definitely man is superior to animals in all such aspects of behavior. But human beings themselves are not all alike. Some may be bright, others are average and some are dull. This means that suppose two students have taken a single score test, which is composed equally of verbal and numerical items. One student answers few items correctly of verbal type and almost every numerical item correct and other student picks up very few point on numerical part but scores good in verbal items. As a result both students will be said to have same IQ but they are not same in their abilities. This reveals the need of measurement of abilities. Here, the numerical ability test refers to the skills, an individual have acquired in the basic arithmetic, computation of numbers, numerical critical reasoning, understanding the relationship of numbers, measurements, number sequences. Moreover, secondary school i.e. standard IX is among the foremost factors contributing the intellectual improvement. Secondary stage of education coincides with adolescence period. The National Curriculum Frame work (NCF) 2005 recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and society (community). It is necessary to encourage children to reflect on their own learning and pursue imaginative activities and questions. Almost in all the entrance examination, numerical ability is a major part. The student who has the ability to solve the reasoning questions, those who do well in arithmetic and measuring, can do well in (i.e. these abilities are so common in) business offices, factories, service shops and stores. Numerical ability is also helpful in technical careers and other jobs like laboratory assistants, bookkeepers, clerks, in construction work and in many other trade skills. Along with state boards in each respective states of our country (India), various schools and boards are also coming up. Like C.B.S.E. (Central Board of Secondary Education) board, ICSE board and many other international boards like Cambridge, Oxford etc. The study patterns are different in different boards but the common centre of importance in all of them is the level of numerical ability of their students.

So, keeping all these points in mind, the researcher limits the area and draws the attention towards the two most concerned boards of education in Ahmedabad city for

the present study. Among the two different education boards i.e. C.B.S.E. (Central Board of Secondary Education) and G.S.E.B. (Gujarat Secondary Education Board), there is a difference in syllabus, text books, and examination period as well as in assessment method. But how these two educational boards helps the child to develop his numerical ability is not given much importance yet. Furthermore, although not enough is known about the difference between the level of numerical ability of students of both these boards i.e. C.B.S.E. and G.S.E.B. They appear sufficiently promising to begin to receive more attention in the present study. The researcher has decided to conduct a research on the comparison of numerical ability of students (both high achievers and low achievers) of C.B.S.E. and G.S.E.B. affiliated schools of Ahmedabad city.

Objectives of the Study

To compare the numerical ability of high achiever students and low achiever students of standard IX; To compare the numerical ability of students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of high achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of low achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of high achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of low achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of high achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; To compare the numerical ability of low achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools.

Hypothesis of the Study:

H_{O1}: There will be no significant difference between the mean scores of numerical ability of high achiever students and low achiever students of standard IX; H_{O2}: There will be no significant difference between the mean scores of numerical ability of students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; H_{O3}: There will be no significant difference between the mean scores of numerical ability of high achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; H_{O4}: There will be no significant difference between the mean scores of numerical ability of low achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; H_{O5}: There will be no significant difference between the mean scores of numerical ability of high achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; H_{O6}: There will be no significant difference between the mean scores of numerical ability of low achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools; H_{O7}: There will be no significant difference between the mean scores of numerical ability of high achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools: H_{O8}: There will be no significant difference between the mean scores of numerical ability of low achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools.

Delimitation of Present Study: The study will be restricted to *IX standard* students of *English medium* schools affiliated to *C.B.S.E.* and *G.S.E.B.* boards of Ahmedabad city.

Sample Selection: In the present study, simple random sampling technique has been used by the researcher. The sample of the study were 374 students of standard IX, in which 187 students were from C.B.S.E. affiliated schools and 187 students were from G.S.E.B. affiliated schools. Along with the administration of numerical ability test on the students, the scholastic achievement marks of every individual students (over all marks of first term examination) were also collected/recorded by the researcher with the help of respective class teacher of the particular school, so as to divide them in the category of high achievers and low achievers.

Research Methodology

In the present study the researcher used school survey method and distributed 374 questionnaire based on numerical ability devised by Dr. K.H. Yadav for student of IX standard of C.B.S.E. and G.S.E.B. In the first step of administration, researcher collected the details of the schools from Ahmedabad city of Gujarat. Then after, their respective numerical ability marks were kept in the tabular form and the whole process of calculation was done as per the requirement of the present study.

Tool of the Study

The researcher has used the Standardized tool of NUMERICAL ABILITY TEST, prepared by K. H. YADAV. This test consists of 40 items of 40 marks. Total time duration of test is one hour. The test comprises of five components of numerical ability viz: numerical facility, arithmetic concepts, arithmetic reasoning, number series and number matrices and relative magnitude. Eight items of each component are arranged in omnibus pattern.

Statistical Calculation: For interpretation of data mean, S.D. and t-test were used.

Analysis and Interpretation of Data: The following table gives the result of the data according to the respective hypothesis.

Sr. No.		Variable	N	Mean	S.D.	t-value	Significance
1	H_{O1}	High achievers (C.B.S.E + G.S.E.B)	189	24.19	6.30	12.70**	Significant and H_{O1} is rejected
		Low achievers (C.B.S.E + G.S.E.B)	185	16.40	5.52		
2	H_{O2}	C.B.S.E (High achiever + Low achiever)	187	22.66	7.56	6.64**	Significant and H_{O2} is rejected
		G.S.E.B(High achiever + Low achiever)	187	18.04	5.77		
3	H_{O3}	C.B.S.E. High achievers (boys + girls)	126	25.55	6.35	4.40**	Significant and H_{O3} is rejected
		G.S.E.B. High achievers (boys + girls)	63	21.44	5.28		
4	H_{O4}	C.B.S.E. Low achievers (boys + girls)	61	16.66	6.20	0.44	Not significant and H_{O4} is not rejected
		G.S.E.B. Low achievers (boys + girls)	124	16.27	5.18		
5	H_{O5}	High achievers of C.B.S.E. (boys)	74	25.57	6.66	3.77**	Significant and H_{O5} is rejected
		High achievers of G.S.E.B. (boys)	29	20.52	4.38		
6	H_{O6}	Low achievers of C.B.S.E. (boys)	31	16.26	5.83	0.54	Not significant and H_{O6} is not rejected
		Low achievers of G.S.E.B. (boys)	76	15.67	4.74		
7	H_{O7}	High achievers of C.B.S.E. (Girls)	52	25.52	5.94	2.49*	Significant at 0.05 level and not significant at 0.01 level i.e. accepted at 0.05
		High achievers of G.S.E.B. (Girls)	34	22.26	5.89		

							level & rejected at 0.01 level
8	H_{O8}	Low achievers of C.B.S.E. (Girls)	30	17.07	6.64	0.11	Not significant and H_{O8} is not rejected.
		Low achievers of G.S.E.B. (Girls)	48	17.23	5.73		

Where, *= Significant at 0.05 level

Where, ** = Significant at 0.01 level

Findings of the Study

Out of 100 cases, in 99 cases there exists a significant difference between the level of numerical ability of high achiever students and low achiever students of standard IX. Moreover, the mean scores of high achiever students have higher (more) value than the mean scores of low achiever students. Thus, it is clear that high achiever students of standard IX have higher level of numerical ability than low achiever students of standard IX.

Out of 100 cases, in 99 cases there exists a significant difference between the level of numerical ability of (high achiever and low achiever)students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. Moreover, the mean scores of (high achiever and low achiever) students of standard IX studying in C.B.S.E. affiliated schools have higher (more) value than the mean scores of (high achiever and low achiever) students of standard IX studying in G.S.E.B. affiliated schools. Thus, it is clear that the students of standard IX studying in C.B.S.E. affiliated schools have higher level of numerical ability than students of standard IX studying in G.S.E.B. affiliated schools.

Out of 100 cases, in 99 cases there exists a significant difference between the level of numerical ability of high achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. Moreover, the mean scores of high achiever students of standard IX studying in C.B.S.E. affiliated schools have higher (more) value than the mean scores of high achiever students of standard IX studying in G.S.E.B. affiliated schools. Thus, it is clear that the high achiever students of standard IX studying in C.B.S.E. affiliated schools have higher level of numerical ability than the high achiever students of standard IX studying in G.S.E.B. affiliated schools.

There is no significant difference between the level of numerical ability of low achiever students of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. It means that low achiever students of standard IX studying in C.B.S.E. affiliated schools and low achiever students of standard IX studying in G.S.E.B. affiliated schools have same level of numerical ability.

Out of 100 cases, in 99 cases there exists a significant difference between the level of numerical ability of high achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. Moreover, the mean scores of high achiever boys of standard IX studying in C.B.S.E. affiliated schools have higher (more) value than the mean scores of high achiever boys of standard IX studying in G.S.E.B. affiliated schools. Thus, it is clear that the high achiever boys of standard IX studying in C.B.S.E. affiliated schools have higher level of numerical ability than the high achiever boys of standard IX studying in G.S.E.B. affiliated schools.

There is no significant difference between the level of numerical ability of low achiever boys of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. It means that low achiever boys of standard IX studying in C.B.S.E.

affiliated schools and low achiever boys of standard IX studying in G.S.E.B. affiliated schools have same level of numerical ability.

Out of 100 cases, in 95 cases there exists a significant difference between the level of numerical ability of high achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. Moreover, the mean scores of high achiever girls of standard IX studying in C.B.S.E. affiliated schools have higher (more) value than the mean scores of high achiever girls of standard IX studying in G.S.E.B. affiliated schools. Thus, it is clear that in 95% cases, the high achiever girls of standard IX studying in C.B.S.E. affiliated schools have higher level of numerical ability than the high achiever girls of standard IX studying in G.S.E.B. affiliated schools.

Out of 100 cases, in 99 cases there is no significant difference between the level of numerical ability of high achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. Thus, it can be said that the high achiever girls of standard IX studying in C.B.S.E. affiliated schools and the high achiever girls of standard IX studying in G.S.E.B. affiliated schools Have same level of numerical ability

There is no significant difference between the level of numerical ability of low achiever girls of standard IX studying in C.B.S.E. affiliated schools and G.S.E.B. affiliated schools. It means that low achiever girls of standard IX studying in C.B.S.E. affiliated schools and low achiever girls of standard IX studying in G.S.E.B. affiliated schools have same level of numerical ability.

References

Aggrawal, J.C.*Educational Research And Introduction* (1966) New Delhi Anya Book Dep., p.237

Aggarwal, J.C. *Essentials of Educational Psychology*, p.308

Buch, M.B. (1978-83) *The Survey of Research in Education* New Delhi, NCERT

Buch, M.B. (1983-88) *Fourth Survey of Research in Education* New Delhi NCERT

Chandra, Shivendra Soti and Sharma, Rajendra K.(2002) *Research in Education* New Delhi, Anmol Publication Pvt. Ltd

George, G.Mouley *The Science of Educational Research* Euersia publishing house New Delhi(1994) p.90

Good, C.V.(1945) *Dictionary of Education* McGraw Hill book Co.

Kothari,C.R.(2006) *Research Methodology Methods and Techniques* New Delhi New Agra International (p) Limited, Publishers

Koul,Lokesh(1997) *Methodology of Educational Research* (Third edition) New Delhi Vikas Publishing House Pvt. Ltd.

Mangal,S.K.(2007) *Essentials of educational Psychology* New Delhi, Prentice-Hall of India Private Limited

Saxena, N.R., Mishra B.K., Mohanty R.K.(2007) *Fundamentals of Educational Research* Meerut, R Lall Book Depot.