

## COGNITIVE ABILITY AMONG GUJARATI AND ENGLISH MEDIUM SCHOOL STUDENTS

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### ABSTRACT

It also aimed to check Cognitive Ability with reference to Gender and Medium. Sinha's Comprehensive Cognitive Ability Test by Dr. Vishal Sud and Pooja Sharma was used. The sample constituted total 200 school students. The data was collected from Mahesana city. The data was scored, analyzed as per the manual. 'F' test was being calculated. The result showed that, 1. There is a significant difference between the mean score of Cognitive Ability among the boys and girls school students. 2. There is a significant difference between the mean score of Cognitive Ability among the school students of Gujarati and English Medium. 3. There is a significant difference in the interactive effect of the mean scores of Cognitive Ability among the gender and Medium.

**Keywords:** *Cognitive Ability , boys and girls students, school students of Gujarati and English Medium.*

## **Introduction :**

Cognition is the thinking capacity of children. Every child has distinct cognitive abilities. Cognitive development is all about learning and reasoning, including the development of memory, symbolic thought, and problem-solving skills. When a school-age child solves a math problem, questions something they have read, makes a snack, or learns to knit, that is cognitive development.

Cognitive Ability: Cognitive development is an important aspect of every child. It enables the children to think and understand. Education ought to become students centered so as to ensure the better understanding of the content. Definition of Cognitive Ability: Cognitive ability is one of the most extensively studied topics within the field of behavioral genetics (McGue & Bouchard, 1998).

Cognitive ability, sometimes referred to as general intelligence (g), is essential for human adaptation and survival. It includes the capacity to P “reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience”

What is cognition?

Cognition has to do with how a person understands the world and acts in it. It is the set of mental abilities or processes that are part of nearly every human action while we are awake. Cognitive abilities are brain-based skills we need to carry out any task from the simplest to the most complex. They have more to do with the mechanisms of how we learn, remember, problem-solve, and pay attention, rather than with any actual knowledge. For instance, answering the telephone involves perception (hearing the ring tone), decision taking (answering or not), motor skill (lifting the receiver), language skills (talking and understanding language), social skills (interpreting tone of voice and interacting properly with another human being).

Cognitive abilities or skills are supported by specific neuronal networks. For instance, memory skills rely mainly on parts of the temporal lobes and parts of the frontal lobes (behind the forehead). People with traumatic brain injuries can experience lower cognitive ability linked to compromised neuronal regions and networks (which is why neurorehabilitation is so important).

Definition of Cognitive Ability

McGue & Bouchard, 1998 :

Cognitive ability is one of the most extensively studied topics within the field of behavioural genetics.

Plomin, 1999 :

Cognitive ability, sometimes referred to as general intelligence (g), is essential for human adaptation and survival. It includes the capacity to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience.

Cognitive abilities are skills your brain uses to complete essential day to day tasks like thinking, learning, reading, remembering, speaking, listening and paying attention.

Types of Cognitive Ability:

Verbal Ability

Numerical Ability

Abstract Reasoning Ability

Verbal Reasoning Ability

## **Objectives**

The objectives :

1. A comparative study of Cognitive Ability among school students with respect to Gender (boys and girls).
2. A comparative study of Cognitive Ability among school students in with respect to Medium (Gujarati and English).
3. To study the interactive effect of Gender and Medium with respect to their Cognitive Ability.

## **METHODOLOGY**

### **Hypothesis**

1. There will be no significant difference between the mean score of Cognitive Ability among the boys and girls school students.
2. There will be no significant difference between the mean score of Cognitive Ability among the school students of Gujarati and English Medium.
3. There will be no significant difference in the interactive effect of the mean scores of Cognitive Ability among the gender and Medium.

## Sample

The sample constituted total 200 school students out of which 100 were from boys school students (50 Gujarati Medium and 50 English Medium) and 100 from girls school students (50 Gujarati Medium and 50 English Medium).

## Research Design

A total sample of 200 school students equally distributed between boys and girls school students of Gujarati Medium and English Medium from Mahesana City selected for the research study.

## Showing the table of Sample Distribution

Medium (B)	Gender (A)		Total
	Boys School Students (A <sub>1</sub> )	Girls School Students (A <sub>2</sub> )	
Gujarati Medium (B <sub>1</sub> )	50	50	100
English Medium (B <sub>2</sub> )	50	50	100
<b>Total</b>	100	100	200

## Variable

### Independent Variable

1. **Gender** : Boys and Girls students.
2. **Medium** : School students of Gujarati Medium and English Medium.

**Dependent Variable** : Cognitive Ability Test.

## Tools

Cognitive Ability Test by Dr. Vishal Sud and Pooja Sharma. It has 76 items for each item, 4 alternative responses are given. The test re-test reliability is 0.58 and Split Half reliability is 0.60. Validity is 0.79.

## Procedure

The permission was granted from various secondary school students for data collection in Mahesana City after the establishment of rapport, personal information and the 'Cognitive Ability Test' was administrated the data was collected, scored as per the manual and analyzed. The statistical method 'F' test was calculated and results were interpreted.

## Result and DISCUSSION

**Table : 1 The Table showing sum of variance, mean, 'F' value and level of significance of Gender and Medium :**

Sum of Variance	Sum of Square	Df	Mean sum of Square	F-value	Sign. Level
SS <sub>A</sub>	554.45	1	554.45	6.57	0.05
SS <sub>B</sub>	1452.61	1	1452.61	16.58	0.01
SS <sub>A*B</sub>	1026.05	1	1026.05	11.71	0.01
SS <sub>Error</sub>	17073.26	196	17073.26	—	—
SS <sub>Total</sub>	20206.36	199	87.62	—	—

\*0.05=3.92, \*0.01=6.84, & N.S.= Not Significant

**Table : 2 The Table showing the Mean Score of Cognitive Ability among boys and girls school students :**

	A (Gender)		'F' value	Sign.
	A <sub>1</sub> (Boys Students)	A <sub>2</sub> (Girls Students)		
M	51.03	47.97	6.57	0.05
N	100	100		

Here we can see in table no. 2, that the mean score of boy's school students group is 51.03 and the mean score of girl's school students group is 47.97. The 'F' value is 6.57. which is significant difference at 0.05 sign. level. Thus from the result shows, the boy school students have higher level of Cognitive Ability compare to Girls school students. Hypothesis no.1 "There is no significant difference between the mean score of Cognitive Ability among the boys and girls school students" is rejected.

**Table : 3 The Table showing the Mean Score of Cognitive Ability among school students of Gujarati Medium and English Medium :**

	B (Medium)		'F' value	Sign.
	B <sub>1</sub> (Gujarati Medium)	B <sub>2</sub> (English Medium)		
M	52.33	46.94	16.58	0.01
N	100	100		

Here we can see in table no.3, that the mean score of school students of Gujarati Medium is 52.33 and the mean score of school students of English Medium group is 46.94. The 'F' value is 16.58 which is significant difference at 0.01 sign. level. Thus from the result

shows, the Gujarati Medium school students have higher level of Cognitive Ability compare to English Medium school students. It means Hypothesis no.2 “There is no significant difference between the mean score of Cognitive Ability among the school students of Gujarati Medium and English Medium” is Rejected.

**Table : 4 The Table showing the interactive effect of the Mean Score of Cognitive Ability among Gender and Medium :**

			A		‘F’ value	Sign.
			A <sub>1</sub>	A <sub>2</sub>		
B	B <sub>1</sub>	M	48.40	47.54	11.71	0.01
		N	50	50		
	B <sub>2</sub>	M	56.26	46.34		
		N	50	50		

Here we can see in table no.4 that the mean score of boys school students of Gujarati Medium group is 48.40, boys school students of English Medium group is 56.26, girls school students of Gujarati Medium group is 47.54, and girls school students of English Medium group is 46.34. The ‘F’ value is 11.71. which is significant difference at 0.01 sign. level. Hypothesis no.3 “There is no significant difference in the interactive effect of the mean scores of Cognitive Ability among the gender and Medium” is Rejected.

### CONCLUSION

1. There is a significant difference between the mean score of Cognitive Ability among the boys and girls school students.
2. There is a significant difference between the mean score of Cognitive Ability among the school students of Gujarati and English Medium.
3. There is a significant difference in the interactive effect of the mean scores of Cognitive Ability among the Gender and Medium.

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