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A Study of Multiple Intelligences of Secondary School Students of Gujarat State

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ABSTRACT:

Every child is unique and no child is waste product as GOD is the creator of all. HE. Yet our education system stratifies them into bright, average and poor. This stratification leads to underutilization of inherent potential of the learners. Consequently, it leads to underutilization of human resources. Hence, in order to understand the learners from their inherited inclinations, the researches has undertaken this study entitled "A Study of Multiple Intelligences of Secondary School Students of Gujarat State". To do so, multiple intelligence scale was constructed and administered on the 4417   students of Gujarat State including 1729 girls and 2688 boys. It was found that students differ significant on various intelligences and gender as well.

I t is a universal truth that every child is unique, even twins are not alike because God doesn't repeat HIS creation.   However, our education system offers teaching and learning in similar ways irrespective of these individual distinctiveness.

Gardiner (1999) emphasized on diversity of students' intelligence and acknowledged that every child possesses inborn creativity, but many children lose interest in learning due to rigid educational curriculum that only focuses on Verbal/Linguistic and Logical-Mathematical intelligence. In order to allow each child to develop his/her unique potential, educators should be able to look at the inner world of children. It would be possible if learners' inherent intelligences can be understood

Hence, the investigator has conducted this study on *Multiple Intelligences so* that students can be classified in accordance with their diversified intelligences.

It may help learners to reduce time, money and efforts wasted over irrelevant courses, and choose the right career path/ course to study and develop his or her core competencies.

Besides, this study provides basis to government/policy makers for policy formation, decision making and forward planning, curriculum developers for incorporating appropriate pedagogy in

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curriculum, teachers in planning their learning experiences, and creating cohesive yet diverse classroom environment, researchers in exploring individual potential of learners and provide basis for their development, parents in nurturing their children in accordance with the natural tendencies, schools to understand the outcome of their inputs etc. Hence, this study entitled "A Study of Multiple Intelligences of Secondary School Students of Gujarat State" has been carried out.

OVERVIEW OF PREVIOUS RESEARCHES

While reviewing the previous researches on multiple intelligences, researcher found some Indian and some overseas studies regarding multiple intelligences. The gist of these studies is presented here.

- The research work of Gogebakan, Derya (2003) showed that in male students, logical-mathematical and Bodily Kinesthetic intelligence was higher than female students' whereas in female students' Musical intelligence was higher than male students'.
- The Linguistic intelligence of female was higher. Girl students were higher in the Intrapersonal Intelligence and boys students were higher in Spatial intelligence in the study of Hassan-Pasha Sharifi (2005).
- Male preferred learning activities involving logical and mathematical intelligences, whereas females preferred learning activities involving Intrapersonal intelligence according to the study of Loori A (2005).
- There was effect of gender on the Multiple Intelligences according to the study of Seyyed Ayatollah Razmjoo (2008).
- Logical – Mathematical Intelligence of Lebanese male students were higher than the female students, where as in the Indian sample, the Females scored higher on Logical – Mathematical Intelligence than the male according to the study of Ramzi Nasser, Sushila Singhal and Kamal Abouchedid (2008).
- Linguistic and Musical intelligence of girls took slight lead whereas boys were ahead of girls in logical and Bodily-Kinesthetic intelligence in the study of Gurpreet Kaur and Sudha Chhikara (2008).
- In the study of Jose; Agnes (2011) there was significant difference in Bodily-Kinesthetic intelligence of low achievers and high achievers but no significant difference in the gender wise comparison was observed.
- Female students were superior to male students in Musical intelligence. Male students were superior to Female students in Naturalist Intelligence. Rural students were superior to urban students in Interpersonal Intelligence. Rural students were superior to urban students in Musical intelligence in the study of Ashok G. Chanchu (2012).
- Other studies were conducted by Sharma pooja, Joshi Krishna, Yadav Anju, Kumari Pooja, Kshatryiya Vandana, Majee Chandan (2014). They found that Multiple Intelligences based teaching strategies were more effective than conventional teaching strategies on academic achievement of students.

OPERATIONAL DEFINITIONS OF KEY TERMS

Multiple Intelligences:

Multiple intelligence refers to the scores obtained on self constructed Multiple Intelligence scale. It covered the statements on eight intelligences given by Gardiner H. (1993). These intelligences were: Linguistic Intelligence, Logical-Mathematical intelligence, Spatial intelligence, Bodily-

kinesthetic intelligence, Musical intelligence, Interpersonal intelligence, Intrapersonal intelligence and Naturalist intelligence.

DELIMITATIONS

Following were the delimitations of the present study:
The study was delimited to the students of Std. IX & X of English Medium Schools of Gujarat State.

Variables under Study
The variables undertaken in the present study were as given below:
a. Dependent Variables:
1. Multiple Intelligences
i. Interpersonal intelligence

ii. Intrapersonal intelligence

iii. Linguistic Intelligence

iv. Logical-Mathematical intelligence

v. Naturalist intelligence

vi. Spatial intelligence

vii. Bodily-kinesthetic intelligence

viii. Musical intelligence

b. Independent Variables:
1. Gender - *Male and Female*

c. Control Variables:
1. Gujarat State
2. English Medium Schools
3. Standard IX & X Students and Teachers

OBJECTIVES

The study was carried out to realize following objectives.
1. To assess Multiple Intelligences of secondary school students
2. To compare mean scores of boys and girls students on various intelligences.

Hypotheses
1. There is no significant difference in mean scores of **Interpersonal** intelligence of boys and girls studying in secondary schools.
2. There is no significant difference in mean scores of **Intrapersonal** intelligence of boys and girls studying in secondary schools.
3. There is no significant difference in mean scores of **Linguistic intelligence** of boys and girls studying in secondary schools.
4. There is no significant difference in mean scores of **Logical-Mathematical intelligence** boys and girls studying in secondary schools.
5. There is no significant difference in mean scores of **Naturalist** intelligence of boys and girls studying in secondary schools.
6. There is no significant difference in mean scores of **Spatial** intelligence of boys and girls studying in secondary schools.
7. There is no significant difference in mean scores of **Bodily-Kinesthetic** intelligence of boys and girls studying in secondary schools.
8. There is no significant difference in mean scores of **Musical** intelligence of boys and girls studying in secondary schools.

Population

All STD IX and X class students studying in English Medium Schools of Gujarat State constitute the population of the study.

SAMPLE

Out of 30 districts of Gujarat state, 15 districts were randomly selected for collecting data from 4417 students. The bifurcation is the same is given below

Students	Number
Boys	2688
Girls	1729

Research Method

It was a descriptive type of survey research, because it studied the current status of Multiple Intelligences of secondary school students of Gujarat State

Research Tool

Multiple Intelligences Scale

A five point Multiple Intelligences scale was constructed through adopting Likert type scale procedure. Weightage given for scoring was: 5 for Always, 4 for Usually, 3 for Sometimes, 2 for Hardly, and 1 for Never. Following steps were followed in its construction.

1) Construction of Items and Finalization of the First Draft
2) Editing, Pre Piloting for Finalization of Second Draft
3) Experts' feedback
4) Third draft of Multiple Intelligences scale
5) Piloting and Finalization of Multiple Intelligences Scale

Data Collection

After the prior approval of the school authorities, data was collected from different schools. Multiple Intelligences Scale was administered on 4417 students.

MAJOR FINDINGS AND DISCUSSION:

DATA ANALYSIS: OBJECTIVE-1

The first objective of the present study was to study the status of Multiple Intelligences of the secondary school students. Multiple Intelligences scale was administered on the students of standard IX and X of Gujarat State. The collected data and drawn inferences and findings are presented here with the help of tables, graphs and narrative analysis of the same below.

Table: Status of Multiple Intelligences in terms of Mean Scores, Percentage of Mean Scores and Rank

S.No.	Multiple Intelligences	Mean Scores	% of Mean Scores	Rank
1	Interpersonal Intelligence	48.60	74.77	1
2	Intrapersonal Intelligence	43.92	67.57	8
3	Linguistic Intelligence	44.77	68.88	7
4	Logical Mathematical intelligence	47.05	72.38	6
5	Naturalist Intelligence	47.60	73.23	4
6	Spatial Intelligence	48.23	74.20	3
7	Bodily Kinesthetic Intelligence	48.44	74.52	2
8	Musical Intelligence	47.40	72.92	5

It is found from the above table that students possess various intelligences in following order beginning from Highest to lowest in rank.

Interpersonal Intelligence > Bodily Kinesthetic Intelligence > Spatial Intelligence > Naturalist Intelligence > Musical Intelligence > Logical Mathematical intelligence > Linguistic intelligence > Intra- personal Intelligence. In other way, it is inferred that students were good in Interpersonal, Bodily Kinesthetic and Spatial Intelligences.

	Inter personal Intelligence	Intrapersonal Intelligence	Linguistic Intelligence	Logical Mathematical Intelligence	Naturalistic Intelligence	Spatial Intelligence	Bodily Kinaesthetic Intelligence	Musical Intelligence
■ % Scores	74.77	67.57	68.88	72.38	73.23	74.2	74.52	72.92
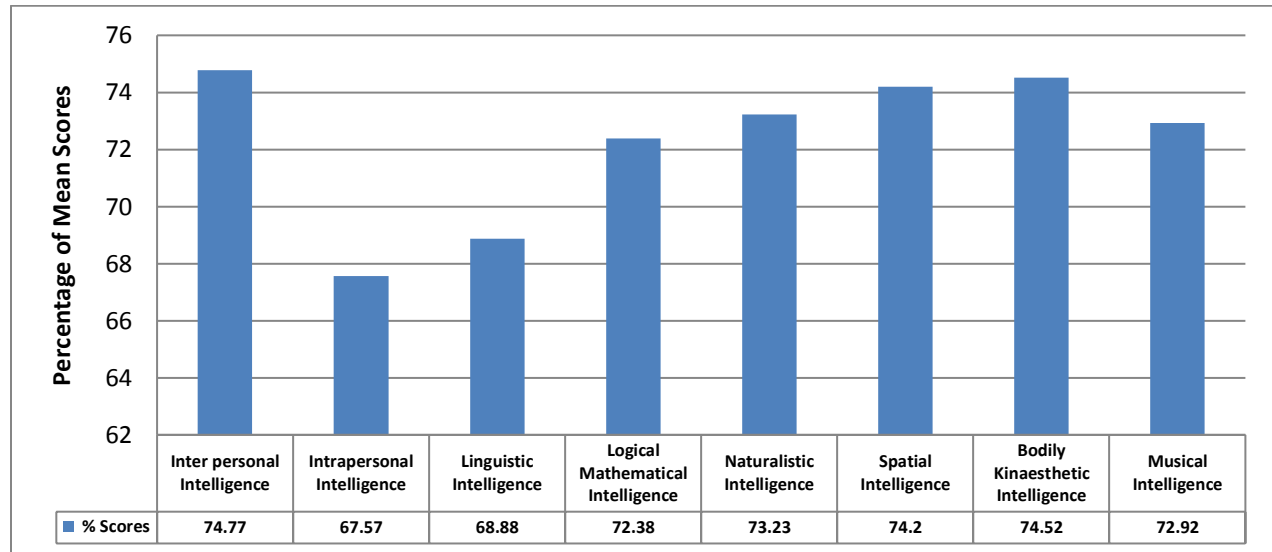
Comparisons of Intelligences in terms of Percentage of Mean Scores

It is drawn from table 4.0 and Graph 4.0 that Linguistic intelligence and Intrapersonal intelligences are the least among learners.

On the other hand, it is found that Interpersonal, Bodily Kinesthetic and Spatial Intelligences are the highest among learners. Rest of the Intelligence namely Logical-Mathematical, Naturalist and Musical Intelligences are found average among learners.

It is found from the data that following was the ranking of intelligences beginning from Highest to lowest in rank.

Interpersonal Intelligence > Bodily Kinesthetic Intelligence > Spatial Intelligence > Naturalist Intelligence > Musical Intelligence > Logical Mathematical intelligence > Linguistic intelligence > Intra- personal Intelligence. In other way, it is inferred that students were good in Interpersonal, Bodily Kinesthetic and Spatial Intelligences

DATA ANALYSIS FOR OBJECTIVE- 2 AND NULL HYPOTHESES (1-8)
Table: Gender Wise Comparison of Mean, S.D. and C.R. Values of Multiple Intelligences

Intelligences	Gender	Mean	N	S.D.	SE_D	C.R.	Remark
HO 1 Interpersonal	Boys	49.06	2688	6.77	0.206	2.06	Significant at 0.05 level
	Girls	48.64	1729	6.64			
HO 2 Intrapersonal	Boys	43.66	2688	7.02	0.208	3.16	Significant at 0.01 level
	Girls	44.32	1729	6.59			

Intelligences	Gender	Mean	N	S.D.	SE_D	C.R.	Remark
HO 3 Linguistic	Boys	44.48	2688	7.61	0.224	3.303	Significant at 0.01 level
	Girls	45.22	1729	7.01			
HO 4 Logical Mathematical	Boys	47.24	2688	7.79	0.234	2.10	Significant at 0.05 level
	Girls	46.75	1729	7.44			
HO 5 Naturalist	Boys	47.58	2688	7.75	0.242	0.212	Not Significant
	Girls	47.63	1729	6.93			
HO 6 Spatial	Boys	48.08	2688	693	0.212	1.803	Not Significant
	Girls	48.47	1729	6.86			
HO 7 Bodily Kinesthetic	Boys	48.58	2688	6.89	0.211	1.69	Not Significant
	Girls	48.22	1729	6.82			
HO 8 Musical	Boys	47.05	2688	8.76	0.267	3.35	Significant at 0.01 level
	Girls	47.95	1729	8.59			

It was found that boys were having higher Interpersonal intelligence and Logical Mathematical Intelligence than Girls.

It was also found that Girls were having higher Intra personal, Linguistic and Musical Intelligence than Boys.

On the other hand, Girls and Boys did not differ significantly on Naturalist, Spatial and Bodily Kinesthetic Intelligences.

DISCUSSION:

Major findings of the present study are discussed in the context of previous researches to understand and reflect upon the drawn inferences more intensively and realistically.

It was found in this study that boys were better in Logical Mathematical intelligence than girls. This findings was supported by Kaur and Chhikara (2008), Chanchu (2012), Gogebakan (2003), Loori (2005), Patel (2014), Govindan (2014). It was also found that boys were better in Interpersonal intelligence than girls, but no study was found confirming or contradicting these findings.

The other finding of the study was that boys and girls were found indifferent in Bodily kinesthetic intelligence. The same was also confirmed by Jose, A. (2011). But, Kaur and Chhikara (2008), Patel (2014), Govindan (2014) Gogebakan (2003) found that boys were better in Bodily kinesthetic intelligence than girls.

Girls were found better in Intrapersonal intelligence than boys. It was also supported by Loori (2005). Moreover, according to the present research, girls were found better in **Linguistic** intelligence than boys. The same was also supported by Kaur and Chhikara (2008), Govindan (2014) but, Seyyed (2008) did not find any real difference in Linguistic intelligence of boys and girls.

This study explored and drew that girls were better in Musical intelligence than boys. This finding was confirmed by Kaur and Chhikara (2008), Chanchu (2012) and Gogebakan (2003),

Govindan (2014). This present study also elicited that boys and girls were indifferent in Naturalist intelligence. But Chanchu (2012) contradicted this finding and found that boys were better than girls in Naturalistic intelligence. The other findings of present study were that boys and girls were indifferent in Spatial intelligence. No study was reported confirming or contracting this finding.

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