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Assessing the Multiple Intelligence of Secondary and Higher Secondary School Teachers

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ABSTRACT

The study was conducted to explore the multiple intelligences of secondary and higher secondary school teachers with respect to gender, locale, classes handled and academic streams. Survey method of research has been used in the present study. To measure the multiple intelligence of school teachers, Multiple Intelligence Inventory (MII) was developed by the investigators. The investigator randomly selected one hundred and thirty secondary and higher secondary school teachers in and around Chennai and Thiruvannamalai Districts of Tamilnadu. The data was analyzed using mean, standard deviation and 't'- test. The major findings of the study reveals that there is no significant difference between male and female school teachers with respect to multiple intelligence and its dimensions. The urban school teachers have higher in verbal, logical, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to rural teachers. The higher secondary school teachers have better in verbal, spatial, musical, interpersonal, intrapersonal, and overall multiple intelligence than compared to secondary school teachers. The science teachers have higher in verbal, logical, spatial, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to arts teachers. **Key words:** Multiple Intelligence, School teachers, Dimensions of Multiple Intelligence.

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INTRODUCTION

The teacher has a major role in the educational development. Good teaching is one of the best ways to create and develop critical thinking among the learners. Enthusiastic, intelligent and well-educated teachers inspire and prepare students for the technological world. The strength of an educational system largely depends upon the quality, competence and effectiveness of the teachers. Teacher who helps to transform an individual into a person of imagination, wisdom, human love and enlightenment. Teachers play critical role in developing knowledgeable society. Teachers should have a different teaching approach which caters the needs of all the learners in the classroom.

Howard Gardner defined intelligence as "To solve problems or to create products that are valued within one or more cultural settings". Teachers multiple intelligence play important role in teaching and learning process. If the teacher is a multiple intelligent person then only student community immensely benefited. In this circumstance the investigators focuses the study on multiple intelligence of secondary and higher secondary school teachers. Gardner suggested that each individual possess at least eight such relatively independent mental abilities or intelligences.

- **Verbal-Linguistic Intelligence:** It is the ability to read, write and communicate with words having components like syntax, semantics and pragmatics.
- **Logical-Mathematical Intelligence:** It is the ability to reason, calculate and to think things in a logical, systematic manner.
- **Visual - Spatial Intelligence:** It is concerned with the abilities, talents and skills involving the representation and manipulation of spatial configuration and relationship.
- **Musical -Rhythmic Intelligence:** It is the ability to make or compose music to sing well, or understand and appreciate music. One's capacity for pitch discrimination, sensitivity to rhythm, texture and timber, ability to hear themes in music and abilities pertaining to the field of music.
- **Bodily-Kinesthetic Intelligence :** It is the ability to use body skillfully to solve problems, create products or present ideas and emotions, the ability displayed for athletic pursuits, artistic pursuits

such as dancing and acting, or in building and construction and the ability to perform skillfully and purposeful movements.

- **Intra-personal Intelligence:** It is the ability to know himself, his own cognitive strengths, styles and mental functioning as well as one's feelings, range of emotions and skills to utilize one's fund of knowledge in practical situations.
- **Inter-personal Intelligence:** It is the ability to understand and work with others, to relate with other people, display empathy and to notice their motives and goals.
- **Naturalistic Intelligence:** It is the ability to recognize flora and fauna, to make other consequential distinctions in the natural world, and to use this ability productively in farming, in biological science and hunting.

Need and Significance of the Study

Multiple Intelligence theory was developed by psychologist Howard Gardner at Harvard University in 1983. He suggested eight measures of multiple intelligences namely Verbal-Linguistic, Logical-Mathematical, Visual-Spatial, Bodily-Kinesthetic, Musical-Rhythmic, Interpersonal, Intrapersonal and Naturalistic Intelligences. Each person possesses all the domains of intelligences. Individual that can relate multiple intelligence in teaching and learning practice are more effective in knowledge transfer (Silver, Strong & Perini, 2000). Teachers as the engineers of the future society ought to be able to apply knowledge in to practice at the right time and in the right situation. Multiple Intelligences could not only provide teachers with more choice in teaching and assessment methods, but also allow students to demonstrate what they have learned in many different ways. Teachers multiple intelligence plays the pivotal role in learning environment. Intellectual ability of the teachers should be enhanced during the period of training level. The teachers with the enriched ability and knowledge can face to meet the mental demands of the students.

In these contexts multiple intelligence theory developed by Howard Gardner comes as a boon which is solving most of the problems that arises because of teaching and learning styles all over the globe. Therefore the need of the hour is secondary and higher secondary school teachers should get the knowledge of multiple intelligence theory and its implementation in the 21st century classroom.

Objectives of the study

- To find out the difference in male and female school teachers with respect to multiple intelligence and its dimensions.
- To find out the difference in rural and urban school teachers with respect to multiple intelligence and its dimensions.
- To find out the difference in secondary and higher secondary school teachers with respect to multiple intelligence and its dimensions.
- To find out the difference in arts and science teachers with respect to multiple intelligence and its dimensions.

Hypotheses of the study

- There is no significant difference between male and female school teachers with respect to multiple intelligence and its dimensions.
- There is no significant difference between rural and urban school teachers with respect to multiple intelligence and its dimensions.
- There is no significant difference between secondary and higher secondary school teachers with respect to multiple intelligence and its dimensions.
- There is no significant difference in arts and science teachers with respect to multiple intelligence and its dimensions.

METHOD OF THE STUDY

Survey method of research has been used in the present study.

Tools Used

Multiple Intelligence Inventory (MII) developed and standardized by the investigators. In the tool was used to collect the data.

Reliability and Validity of the Tool

The reliability of the Multiple Intelligence Inventory has been established by calculating the Cronbach's Alpha ($r=0.941$) and the intrinsic validity was established by taking the Square root of the reliability coefficient i.e. 0.970. Thus from the two co-efficients, it may be inferred that this tool is highly reliable and valid.

Sample

Random sampling technique has been used for selecting the sample. The investigator selected one hundred and thirty secondary and higher secondary school teachers in and around Chennai and Tiruvannmalai Districts of Tamilnadu.

Statistical Technique Used

For analyzing the data mean, standard deviation and 't'-test have been computed.

Data Analysis and Interpretations

From the table 1, it is found that the calculated value of t is not significant at 5% level, the null hypothesis is accepted with respect to multiple intelligence and its dimensions. Hence concluded that there is no significant difference between male and female school teachers with respect to multiple intelligence and its dimensions (Table 1).

From the table 2, the calculated value of t is significant at 1% level, the null hypothesis is rejected with respect to verbal, logical, interpersonal, intrapersonal, naturalistic and overall multiple intelligence. Hence concluded that there is significant difference between rural and urban school teachers with respect to verbal, logical, interpersonal, intrapersonal, naturalistic and overall multiple intelligence. The urban school teachers have higher in verbal, logical, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to rural teachers.

It was found that the calculated value of t is not significant at 5% level, the null hypothesis is accepted with respect spatial, kinesthetic and musical intelligence. Hence concluded that there is no significant difference between rural and urban school teachers with respect to the dimensions of spatial, kinesthetic and musical intelligence (Table 2).

From the table 3, it is clear that the calculated value of t is significant at 1% level, the null hypothesis is rejected with respect to verbal, spatial, musical, interpersonal, intrapersonal, and overall multiple intelligence. Hence concluded that there is significant difference between secondary and higher secondary school teachers with respect to verbal, spatial, musical, interpersonal, intrapersonal, and overall multiple intelligence. The higher secondary school teachers have better in verbal, spatial, musical, interpersonal, intrapersonal, and overall multiple intelligence than compared to secondary school teachers

It was observed that the calculated value of t is not significant at 5% level; the null hypothesis is accepted with respect to logical, kinesthetic and naturalistic intelligence. Hence concluded that there is no significant difference between secondary and higher secondary school teachers with respect to logical, kinesthetic and naturalistic intelligence (Table 3)

From the table 4, it is observed that the calculated value of t is significant at 1% level, the null hypothesis is rejected with respect to verbal, logical, spatial, interpersonal, intrapersonal, naturalistic and overall multiple intelligence. Hence concluded that there is significant difference between arts and science teachers with respect to verbal, logical, spatial, interpersonal, intrapersonal, naturalistic and overall multiple intelligence. The science teachers have higher in verbal, logical, spatial, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to arts teachers.

The table 4, clearly indicates that the calculated value of t is not significant at 5% level; the null hypothesis is accepted with respect to kinesthetic and musical intelligence. Hence concluded that there is no significant difference between arts and science teachers with regard to the dimensions of kinesthetic and musical intelligence (Table 4).

MAJOR FINDINGS OF THE STUDY

Findings based on the Hypotheses formulated and followed by data analysis are given as follows:

- It was found that there is no significant difference between male and female school teachers with respect to multiple intelligence and its dimensions.
- The urban school teachers have higher in verbal, logical, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to rural teachers but there is no significant difference between rural and urban school teachers in their spatial, kinesthetic and musical intelligence.
- The higher secondary school teachers have better in verbal, spatial, musical, interpersonal, intrapersonal, and overall multiple intelligence than compared to secondary school teachers but there is no significant difference between secondary and higher secondary school teachers with respect to logical, kinesthetic and naturalistic intelligence.
- The science teachers have higher in verbal, logical, spatial, interpersonal, intrapersonal, naturalistic and overall multiple intelligence than compared to arts teachers but there is no significant difference between arts and science teachers with respect to kinesthetic and musical intelligence.

Educational Implication

According to Gardner intelligence is not a single factor. It is a combination of different abilities developed autonomously according to heredity and environment. Intelligence can be developed. Gardner suggests

that everyone has the capacity to develop all eight intelligences to a reasonably high level of performance with appropriate encouragement, enrichment and instruction. Hasen (1998) states the teachers have agreed that their knowledge of the types or kinds of multiple intelligence is very important in order for them to succeed in their teaching in different stages.

Gardner's Theory of Multiple Intelligences states that many implications for teachers in terms of classroom instruction. The theory states that all eight intelligences are needed to productively function in society. Therefore teachers and educators should think of all intelligences as equally important. This is in great contrast to traditional education systems, which typically place a greater emphasis on the development and use of verbal and mathematical intelligences. Thus, the Theory of Multiple Intelligences implies that educators should recognize and teach to a broader range of talents and skills. The another implication is that teachers should structure the presentation of material in a style that engages most or all of the intelligences, for example, when teaching about the revolutionary war, a teacher can show students battle maps, play revolutionary war songs, organize a role play of the signing of the Declaration of Independence, and have the students read a novel about life during that period. This kind of presentation not only excites students about learning, but it also allows a teacher to reinforce the same material in a variety of ways. By activating a wide assortment of intelligences, teaching in this manner can facilitate a deeper understanding of the subject material. Therefore the teachers can recognize dominant intelligences in both himself or herself and students. Teacher can utilize his or her own intelligence to guide students in their learning and encourage their strengths.

Table 1: Multiple Intelligence of male and female school teachers

Dimensions	Gender	N	Mean	SD	t-value	Level of Significance
Verbal	Male	64	61.77	11.44	1.070	NS
	Female	66	59.77	9.87		
Logical	Male	64	57.18	12.63	0.430	NS
	Female	66	56.25	12.06		
Spatial	Male	64	57.89	12.25	0.653	NS
	Female	66	59.22	10.82		
Kinesthetic	Male	64	58.03	13.39	0.236	NS
	Female	66	57.52	11.36		
Musical	Male	64	56.21	12.80	0.518	NS
	Female	66	57.31	11.34		
Interpersonal	Male	64	66.23	10.39	0.822	NS
	Female	66	67.61	8.67		
Intrapersonal	Male	64	64.98	8.58	0.724	NS
	Female	66	66.06	8.37		
Naturalistic	Male	64	64.03	11.26	0.586	NS
	Female	66	65.13	9.99		
Multiple Intelligence	Male	64	486.33	77.26	0.201	NS
	Female	66	488.86	65.16		

Table 2: Multiple Intelligence of rural and urban school teachers

Dimensions	Locale	N	Mean	SD	t-value	Level of Significance
Verbal	Rural	53	54.91	9.62	5.823	0.01
	Urban	77	64.83	9.50		
Logical	Rural	53	52.60	12.30	3.282	0.01
	Urban	77	59.56	11.57		
Spatial	Rural	53	59.35	12.42	0.675	NS
	Urban	77	57.96	10.90		
Kinesthetic	Rural	53	58.42	12.83	0.504	NS
	Urban	77	57.31	12.12		
Musical	Rural	53	57.76	12.76	0.816	NS
	Urban	77	56.01	11.57		
Interpersonal	Rural	53	62.83	11.77	4.292	0.01
	Urban	77	69.71	7.11		
Intrapersonal	Rural	53	62.09	9.23	4.044	0.01
	Urban	77	67.87	7.04		
Naturalistic	Rural	53	60.32	11.36	3.994	0.01
	Urban	77	67.49	9.07		
Multiple Intelligence	Rural	53	448.57	73.30	5.792	0.01
	Urban	77	514.43	56.21		

Table 3: Multiple Intelligence of secondary and higher secondary school teachers

Dimensions	Classes Handled	N	Mean	SD	t-value	Level of Significance
Verbal	Secondary	69	56.23	9.36	5.770	0.01
	Higher Secondary	61	65.93	9.80		
Logical	Secondary	69	55.58	14.12	0.968	NS
	Higher Secondary	61	57.68	10.59		
Spatial	Secondary	69	53.90	11.13	5.388	0.01
	Higher Secondary	61	63.80	9.65		
Kinesthetic	Secondary	69	59.20	9.86	1.440	NS
	Higher Secondary	61	56.07	14.78		
Musical	Secondary	69	52.68	11.92	4.369	0.01
	Higher Secondary	61	61.36	10.56		
Interpersonal	Secondary	69	63.81	10.58	5.511	0.01
	Higher Secondary	61	70.41	6.83		
Intrapersonal	Secondary	69	62.04	7.87	5.973	0.01
	Higher Secondary	61	69.44	7.37		
Naturalistic	Secondary	69	64.63	9.64	0.076	NS
	Higher Secondary	61	64.49	11.79		
Multiple Intelligence	Secondary	69	454.12	64.52	6.551	0.01
	Higher Secondary	61	525.43	58.88		

Table 4: Multiple Intelligence of arts and science subjects teaching school teachers

Dimensions	Academic Streams	N	Mean	SD	t-value	Level of Significance
Verbal	Arts	58	56.10	9.95	4.853	0.01
	Science	72	64.56	9.81		
Logical	Arts	58	51.00	11.01	5.217	0.01
	Science	72	61.33	11.40		
Spatial	Arts	58	52.91	10.58	5.539	0.01
	Science	72	63.08	10.26		
Kinesthetic	Arts	58	56.81	10.90	0.852	NS
	Science	72	58.66	13.62		
Musical	Arts	58	56.92	10.16	0.149	NS
	Science	72	56.60	13.66		
Interpersonal	Arts	58	62.93	10.82	4.566	0.01
	Science	72	70.11	7.01		
Intrapersonal	Arts	58	61.72	8.50	4.990	0.01
	Science	72	68.57	7.14		
Naturalistic	Arts	58	59.40	9.70	5.519	0.01
	Science	72	68.74	9.50		
Multiple Intelligence	Arts	58	447.60	66.55	6.622	0.01
	Science	72	519.78	57.64		

Fig 1: Bar Diagram Shows Mean Scores of Multiple Intelligence among School Teachers with respect to Locality

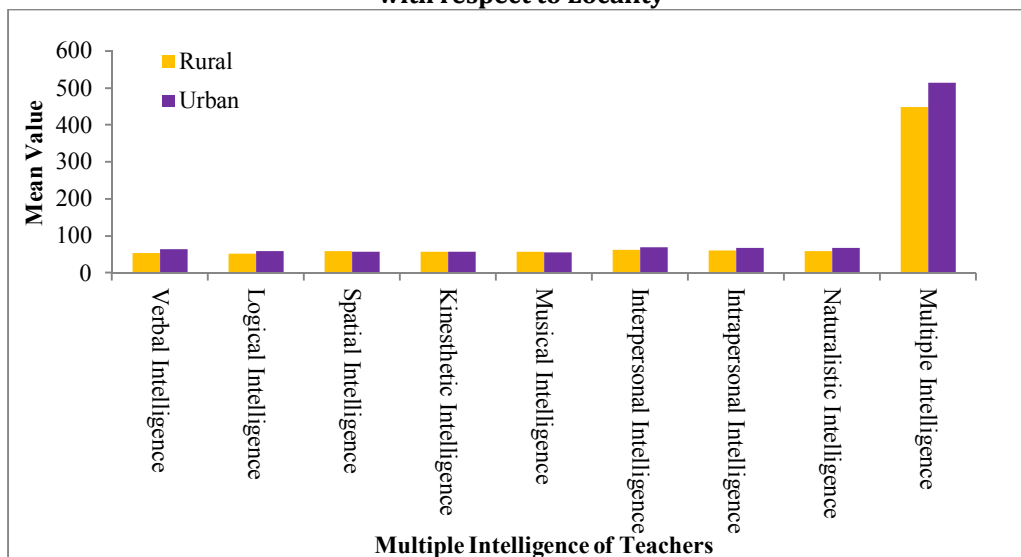


Fig 2: Bar Diagram Shows Mean Scores of Multiple Intelligence among School Teachers with respect to Secondary and Higher Secondary

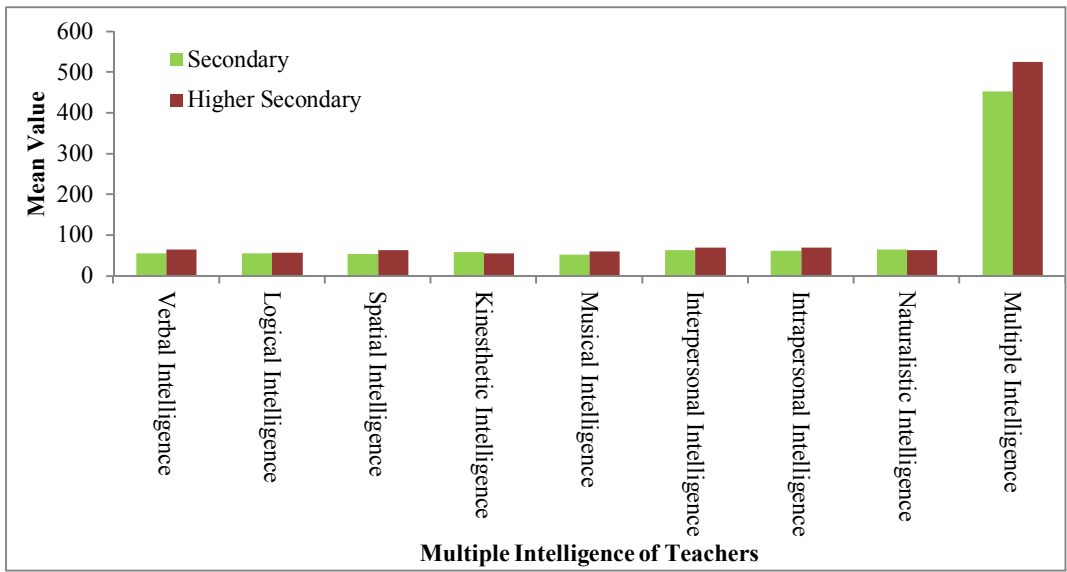
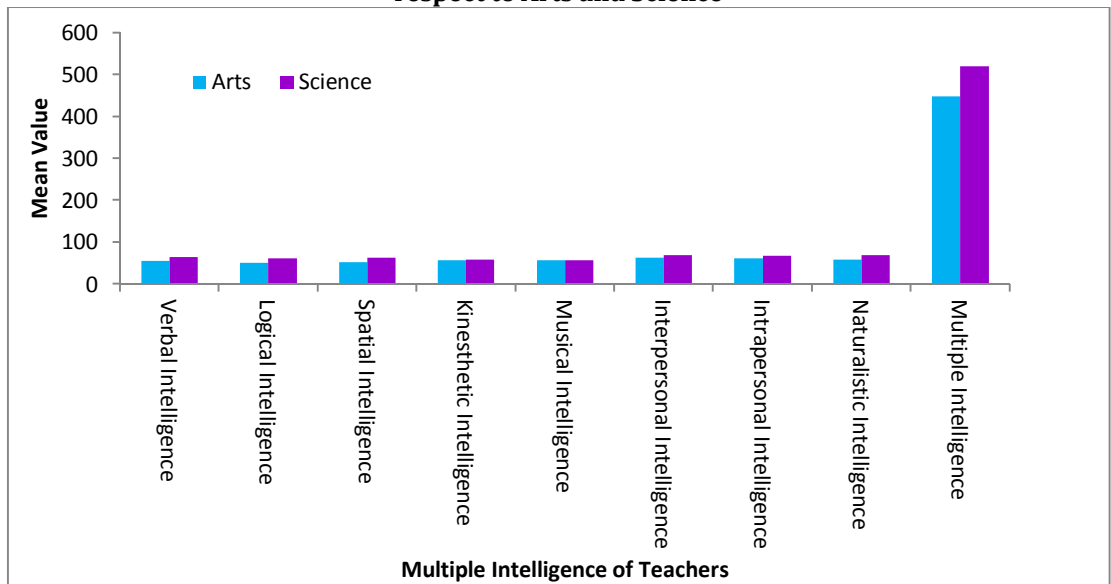


Fig 3: Bar Diagram Shows Mean Scores of Multiple Intelligence among School Teachers with respect to Arts and Science



CONCLUSION

In the age of 21st Century knowledge era, teachers multiple intelligence plays a vital role in teaching and learning process. Gardner’s theory of Multiple Intelligence provides a theoretical foundation for recognizing the different abilities and talents of teachers and students. Teachers should first evaluate their own intelligence before carrying out multiple intelligence teaching and use their dominant intelligence in planning materials and lesson plans. They should also keep track of Student performance with observations and written records. This can help to assess each student’s intelligence and provide support accordingly. Individual can enhance their multiple intelligence study groups with other teachers can be a good way to explore new ideas, compare results and articulate questions and concerns.

Gardner states that he does not want his children to understand the world because the world is fascinating, but he wants them to understand it so that they will be positioned to make it a better place. Teachers multiple intelligences and teaching efficacy separately have been explored to a great extent since the last

decade. Thus, with the teachers multiple intelligence and enriched knowledge will make the learning environment more conducive for the learners to grow as healthy citizen of our country.

REFERENCES

1. Armstrong, T. (2000). *Multiple Intelligences in the classroom*. AlexandriaVA: Association for Supervision & Curriculum.
2. Gardner, H. (1983). *Frames of mind: The theory of Multiple Intelligences*. New York: Basic Books.
3. Gardner, H. (1999). *Intelligence reframed: Multiple Intelligences for the 21st Century*. New York: Basic Books.
4. Gittabonia, Sreenivas (2012). *Intelligence and personality of prospective teachers*. New Delhi, Discovery Publishing House Pvt. Ltd.
5. Hari Shankar Asthana & Braj Bhushan (2007). *Statistics for Social Sciences*. New Delhi, Prentice Hall of India Pvt.Ltd.
6. Hardeep Kaur Shergili (2010). *General Psychology*. New Delhi, PHI Learning Pvt. Ltd.
7. O'Boyle Hall (2010). Multiple Intelligences: Gardner's Theory. ERIC Clearinghouse on Assessment and Evaluation, Catholic University of America, Washington.
8. Spark in Education Multiple Intelligence theory, retrieved from kqed.org/assets.
9. Lokesh, Koul (2009). *Methodology of Educational Research*. New Delhi, Vikas Publishing House Pvt. Ltd.

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