

A Study On Multiple Intelligence Of Higher Secondary Students

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Abstract

This study made an attempt to know about the level of Multiple Intelligence of Higher Secondary Students of Coimbatore city. This study is descriptive in nature and survey method was used. Data from 240 Higher Secondary Students studied in Government, Government aided, corporation and private schools of Coimbatore city were collected by using the tool multiple intelligence Inventory constructed by Howard Gardner. Through random sampling technique the samples were collected. The collected data were analysed by 't' test and 'F' test. The study revealed that boys are significantly differ from girls as far as Multiple Intelligence is considered. No significant difference in the Multiple Intelligence between the students of rural and urban schools and also Tamil medium and English medium higher secondary students. There is a significant difference in the Multiple Intelligence of Higher Secondary Students with respect to their birth order.

Key Words: Multiple Intelligence, Higher Secondary Students.

INTRODUCTION

Each individual is a relatively autonomous intellectual potential which capable of functioning independently. Each person's intelligence has been traditionally considered, is made of autonomous intelligences that work in concert with each other. There are multiple ways of learning and knowing. The brain of each person has memory system for rote learning and spatial memory and performs many functions simultaneously. Each brain has a profile of Multiple Intelligence – Verbal Intelligence, Mathematical Intelligence, Visual Intelligence, Musical Intelligence, Bodily Kinesthetic Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence, Naturalistic Intelligence and Existentialist Intelligence.

Multiple Intelligence is a new educational theory originated in 1983 from the work of Howard Gardner at the Harvard School of Education and Harvard Project Zero. When Howard Gardner and others carved out their respective projects, he received an interesting assignment to write a book about what has been established about human cognition through discoveries in the biological and behavioral sciences. Thus was born the research program that led to the theory of Multiple Intelligence. He tried to make the argument that the brain consists of many modules/organs/intelligences each of which operates according to its own rules in relative autonomy from the others. He asserted that human intelligence or cognitive competence can be better described as a set of an individual's multiple abilities, talents and mental skills related to a multiple number of domains of knowledge in a particular cultural setting. In order to capture the full range of abilities and talents

that people possess, Gardner suggests that people do not have just one intellectual capacity, but have many different intelligences.

Multiple Intelligence describes an array of different kinds of intelligences exhibited by human beings. Howard Gardner claims that all human beings have multiple intelligence. These multiple intelligence can be nurtured and strengthened or ignored and weakened. This theory rejects as inadequate traditional measures of intelligences or aptitude such as the Stanford Binet Test or SAT for pre-admission to college. Rather, children should be evaluated by what they can do and what they cannot do. In a nutshell, Multiple Intelligence Theory is a “Pluralized way of understanding intellect”. Advances in cognitive science, developmental psychology and neuroscience suggest that each person’s intelligence, as it has been traditionally considered, is made of autonomous faculties or intelligences that work in concert with each other.

Gardner originally identified seven core intelligences say linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal and intrapersonal. In 1999, he added an eighth namely naturalistic intelligence and indicated that investigation continues on whether there is an existentialist intelligence. Gardner’s Multiple Intelligence theory opened new vistas for educational researchers. He argued that despite the success of standard IQ in predicting ability in school subjects, it did not highlight the potential or competence of an individual in particular field of expertise. But multiple intelligence is providing multiple ways for learning.

DIMENSIONS OF MULTIPLE INTELLIGENCE

There are nine dimensions of Multiple Intelligence. They are as follows;

Verbal –Linguistic Intelligence

This intelligence includes the ability to read, write and communicate with words and to use words effectively, either orally or in writing. A well developed linguistic intelligence shows itself in attention to word, syntax and style. The people with this intelligence learn best through language including speaking, writing, reading and listening. They are able to explain verbally or in writing, convince and express themselves. They enjoy writing and creating with words. The core components of linguistic intelligence are sensitivity to the sounds, rhythms and meanings of words, sensitivity to the different functions of language.

Logical-Mathematical Intelligence

This includes the ability to mentally process logical problems and mathematical equations. This type of intelligence is responsible for all types of abilities, talents and skills in areas related to logic and mathematics. The people with this intelligence learn best through numbers, reasoning and problem solving. They are able to create and manipulate visuals and create mental pictures from many perspectives. The core

components of logical-mathematical intelligence are sensitivity to and capacity to discern, logical or numerical patterns, ability to handle long chains of reasoning.

Visual-Spatial Intelligence

This includes the ability of learning visually and organizing ideas spatially, to comprehend shapes and images in three dimensions. This type of intelligence is responsible for all types of abilities, talents and skills involving the representation and manipulation of spatial configuration and relationships. The people with this intelligence learn best visually and tend to organize their thinking spatially. The core components of spatial intelligence are capacities to perceive the visual-spatial world accurately and to perform transformation on one's initial perceptions.

Bodily Kinesthetic Intelligence

The ability to use the body skillfully to solve problems, create products or present ideas and emotions. It is the learning through muscle memory obtained from experiences. It promotes understanding through concrete experiences. This type of intelligence is responsible for all types of abilities, talents and skills involve in using one's body or its various parts to perform skillful and purposeful movements. The core components of body-kinesthetic intelligence are abilities to control one's body movements and to handle objects skillfully. The people with this intelligence learn best through physical activity such as dance, hands-on tasks, constructing models and any kind of movement. They are able to manipulate and control objects, as well as express their ideas through movement.

Musical-Rhythmic Intelligence

This includes the capacity to perceive, compose, discriminate, transform and express musical forms. This type of intelligence is responsible for all types of abilities, talents and skills pertaining to the field of music. The people with this intelligence learn best through sounds including listening and making sound such as songs, rhythms, patterns and other types of auditory expression. They are able to use inductive and deductive reasoning and identify relationships in data. The core components of musical intelligence are abilities to produce and appreciate rhythm, pitch and timbre, appreciation of the forms of musical expressiveness.

Interpersonal Intelligence

This includes the ability to work effectively with others, to relate to other people and display empathy and understanding, to notice their motivations and goals. It promotes collaboration and cooperation while working with others and involves give and take of communication, empathizing with others. It consists of the abilities to understand individuals other than one's self and one's relations to others. The core components of

interpersonal intelligence are capacities to discern and respond appropriately to the moods, temperaments, motivation with other desires of other people. The people with this intelligence learn best through interaction with other people through discussions, cooperative work, or social activities.

Intrapersonal Intelligence

It includes knowledge and understanding of one's 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. It represents a frame of mind in which learners internalize learning through thoughtful connections and then transfer it to novel situations through reflective application. The core components of interpersonal intelligence are access to one's own feelings and the ability to discriminate among them and draw upon them to guide behavior, knowledge of one's own strengths, weaknesses, desires and intelligence. The people with this intelligence learn best through meta-cognitive practices such as getting in touch with their feelings and self-motivation. They are able to concentrate and be mindful.

Naturalistic Intelligence

This includes the ability of learning through categorization, classification etc. It represents observation and distinction made in the natural world. This is the ability to recognize flora and fauna to make other consequential distinctions in the natural world and to use this ability productively. This intelligence involves the ability to understand and work effectively in the natural world. The people with this intelligence learn best through the interactions with the environment including outdoor activities, fieldtrips and involvement with plants and animals.

Existentialist Intelligence

This includes the ability to tackle deep questions about human existence, such as the meaning of life, why we die, and what our role is in the world. This intelligence seeks connections to real world and allows learners to see their place in the big picture and observe their roles in the classroom, society and the world or the universe. People possessing this intelligence will also be interested in cosmic issues. It concerns with ultimate issues. It embrace diverse doctrines but centering on analysis of individual existence in a deep universe and the dilemma of the individual who must assume ultimate responsibility for acts of freewill without any certain knowledge of what is right or wrong or good or bad. The people with this intelligence learn best through seeing the "big pictures" of human existence by asking philosophical questions about the world.

SIGNIFICANCE OF THE STUDY

In this twenty first century, man is leading a mechanical life. Parents and teachers are prompting children to use their vital energy in scoring high marks in the academic field. So, the efficiency of children is ignored in the other fields. By focusing only on examination performance, the energetic generations are being spoiled in the early stage itself. But it is not fair to use the intelligence of the students in the academic field alone. It is indeed necessary to use the intelligences in all the fields, so that they can develop different skills and excel in their life. Every human being consists of any one or more of the intelligences among the identified nine categories of multiple intelligence but the only thing is it varies in some degrees from one individual to other.

It is important to assess the multiple intelligence of students which helps to strengthen their interested areas and to improve their weaker areas through proper steps. This study will also help the teachers to identify the strengths of their students which make the teacher feasible to lead them in a proper way. It is the duty of the teacher to nourish the unique potentials of each child. This study will call for a re-structuring of our schools to accommodate different modes of teaching-learning process. It offers a more holistic accounting of individual potential and talents. In the present situation it is important to assess multiple intelligence so as to assess and use the intelligence of the students in wider sense. Hence, the investigator selected this topic to research on.

STATEMENT OF THE PROBLEM

“A Study on Multiple Intelligence of Higher Secondary Students”

FUNCTIONAL DEFINITION OF THE TERMS

Multiple Intelligence

Multiple Intelligence describes an array of different kinds of intelligences exhibited by human beings. It allows one to assess the talents and skills of the whole individual. All the nine type of intelligences are independent to each other. Every one possess all these intelligences but to varying degrees.

OBJECTIVES OF THE STUDY

The main objectives of the study are

1. To find out the multiple intelligence of the Higher Secondary Students.
2. To find out the significant difference in the multiple intelligence between boys and girls of Higher Secondary Students.

3. To find out the significant difference in the multiple intelligence between the Higher Secondary Students of rural school and urban school.
4. To find out the significant difference in the multiple intelligence between Tamil medium and English medium Higher Secondary Students.
5. To find out the significant difference in the multiple intelligence of Higher Secondary Students with respect to their birth order.

NULL HYPOTHESIS OF THE STUDY

1. There is no significant difference in the multiple intelligence between boys and girls of Higher Secondary Students.
2. There is no significant difference in the multiple intelligence between the Higher Secondary Students of rural school and urban school.
3. There is no significant difference in the multiple intelligence between Tamil medium and English medium Higher Secondary Students.
4. There is no significant difference in the multiple intelligence of Higher Secondary Students with respect to their birth order.

METHODOLOGY:

For the present investigation the investigator adopted survey method. The present investigation was conducted among Higher Secondary students in Coimbatore district, Tamil Nadu. The investigator used Multiple Intelligence Inventory which was constructed and standardized by Howard Gardner. The tool contains 90 statements. All these 90 statements are provided with a three point scale having always, sometimes and never as options. There 90 statements fall into 9 dimensions of multiple intelligence.

The value of correlation co-efficient was 0.89. Since the value was high the tool was found to be reliable. The sample for this study consists of 240 Higher Secondary students from Government, Government Aided Corporation and private schools. The collected data were analyzed by appropriate statistical technique such as mean, standard deviation , t test and 'F' test.

ANALYSIS OF DATA:

The collected data underwent by using 't' test, F test and they are tabulated based on the hypotheses as follows:

NULL HYPOTHESIS: 1

There is no significant difference in the multiple intelligence between boys and girls of Higher Secondary students.

The following table gives the mean, standard deviation and 't' value with reference to gender.

Table 1 - Multiple Intelligence: Gender

Gender	Mean	Standard Deviation	N	t Value
Boys	212.56	16.90	120	0.9748
Girls	209.97	23.69	120	

From the table it is inferred that there is difference in the mean value of multiple intelligence between boys and girls. The mean score based on the multiple intelligence of Higher Secondary boys (212.56) are slightly higher than the mean score of Higher Secondary girls (209.97).

The calculated 't' value (0.9748) is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted.

Therefore, there is no significant difference in the multiple intelligence between boys and girls of Higher Secondary students.

NULL HYPOTHESIS: 2

There is no significant difference in the multiple intelligence between the Higher Secondary students of rural school and urban school.

The following table gives the mean, standard deviation and 't' value with reference to the locality of the school.

Table 2 - Multiple Intelligence: Locality of the School

Locality of School	Mean	Standard Deviation	N	t Value
Rural	209.72	20.15	120	1.1639
Urban	212.81	20.97	120	

From the table it indicates that there is difference in the mean value of multiple intelligence between the students of rural school and urban school. The mean score based on the multiple intelligence of the students of urban school (212.81) are slightly higher than the mean score of the students of rural school (209.72).

The calculated 't' value (1.1639) is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted.

Therefore, there is no significant difference in the multiple intelligence between the students of rural school and urban school.

NULL HYPOTHESIS:3

There is no significant difference in the multiple intelligence between Tamil medium and English medium Higher Secondary students.

The following table gives the mean, standard deviation and 't' value with reference to the medium of instruction.

Table 3 - Multiple Intelligence: Medium of Instruction

Medium of Instruction	Mean	Standard Deviation	N	t Value
Tamil Medium	213.35	20.97	120	1.5745
English Medium	209.18	20.05	120	

The above table shows that there is difference in the mean value of multiple intelligence between the students of Tamil medium and English medium. The mean score based on multiple intelligence of Tamil medium Higher Secondary students (213.35) are slightly higher than the mean score of English medium Higher Secondary students (209.18).

The calculated 't' value (1.5745) is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted.

Therefore, there is no significant difference in the multiple intelligence between Tamil medium and English medium Higher Secondary students.

NULL HYPOTHESIS: 4

There is no significant difference in the multiple intelligence of Higher Secondary students with respect to their birth order.

The following tables gives the mean, standard deviation and 'F' value with reference to the birth order of Higher Secondary students.

Table 4 - Multiple Intelligence: Birth Order

Birth Order	Mean	Standard Deviation	N
First Order	207.26	20.55	112
Middle Order	218.33	23.35	36
Last Order	213.37	18.99	92

From the above table it is observed that there is difference in the mean value of the multiple intelligence among the Higher Secondary students with respect to their birth order.

The mean score of multiple intelligence of the Higher Secondary students who belong to the middle birth order (218.33) are slightly higher than the mean score of the Higher Secondary students who belong to the other two birth orders.

In order to find out whether there is difference in mean, F test was applied. The following table gives the ANOVA value with reference to the birth order of the Higher Secondary students.

Table 5 - Multiple Intelligence: Birth Order

ANOVA

	Sum of Square	df	Mean Square	F value
Between Groups	4,001.048	2	2,000.524	4.879**
Within Groups	97,175.294	237	410.022	
Total	101,176.342	239		

**Significance at P = 0.01 level

The above table gives the F value with reference to the birth order of the Higher Secondary students namely first, middle and last birth order.

The calculated F value (4.879) is higher than that of the table value (4.71) at 1% level of significance. Hence, the null hypothesis is rejected.

The difference may be due to the fact that the second order children get more care and attention from their parents as well as from their elder siblings. Hence they show greater degree of Multiple Intelligence.

Therefore, there is significant difference in the multiple intelligence of Higher Secondary students with respect to their birth order.

FINDINGS

1. The findings reveals that the majority of Higher Secondary boys have high level of linguistic intelligence, mathematical intelligence, visual intelligence, bodily-kinesthetic intelligence, musical intelligence, intrapersonal intelligence and interpersonal intelligence than the Higher Secondary girls whereas the majority of Higher Secondary girls have high level of existential intelligence and naturalistic intelligence than the Higher Secondary boys.
2. The calculated 't' value (0.9748) with reference to gender is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference in the multiple intelligence between boys and girls of Higher Secondary students.

3. The calculated 't' value (1.1639) with reference to locality of the school is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference in the multiple intelligence between the Higher secondary students of rural school and urban school.
4. The calculated 't' value (1.5745) with reference to medium of instruction is lower than the table value (1.97) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference in the multiple intelligence between Tamil medium and English medium Higher Secondary students.
5. The calculated F value (4.879) with reference to birth order is higher than that of the table value (4.71) at 1% level of significance. Hence, the null hypothesis is rejected. Therefore, there is significant difference in the multiple intelligence of Higher Secondary students with respect to their birth order. The difference may be due to the fact that the second order children get more care and attention from their parents as well as from their elder siblings. Hence they show greater degree of Multiple Intelligence.

CONCLUSION

Multiple Intelligence is an array of different kinds of intelligences exhibited by human beings. Multiple intelligence makes a student more autonomous and unique. It helps to improve co-operation skills and leadership skills. It also facilitates the students to overcome behavioural problems, attention problems and learning problems at school and home. Especially students with high multiple intelligence have mental adaptability to face new challenges and problems in life as successfully as possible. The present study reveals that the type of school and birth order influence multiple intelligence of the students.

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