



Impact of Multiple Intelligence on Academic Achievement of Higher Secondary Students

M. Balasubramaniam
Ph.D.Scholar, Bharathiar University,
Coimbatore.

Dr. D.Sivakumar
Principal, CK College of Education,
Cuddalore

ABSTRACT

The main aim of the study is to find out the significance difference in multiple intelligence and academic achievement of higher secondary students. Survey method was adopted for this study. The sample consists of 300 higher secondary students in and around Namakkal district. Sample Random Sampling Technique was used. Multiple Intelligence tool was used to collect the data. For the purpose of analysis 't' test was used. The findings of the study were: 1) There is no significant difference between male and female higher secondary students in their multiple intelligence. 2) There is significant difference between male and female higher secondary students in their academic achievement. 3) There is significant relationship between multiple intelligence and academic achievement of higher secondary students.

Keywords: Multiple Intelligence, Academic achievement and Higher Secondary Students.

INTRODUCTION

Armstrong (2000) demonstrated how a multiple-intelligences approach can take place informally in a traditional style class, where the teacher lectures with rhythmic emphasis (musical), draws picture on the board to illustrate points (spatial), makes rhythmic gestures as he talks (bodily-kinesthetic), pauses to give students time to reflect (intrapersonal), asks questions that invite spirited interaction (interpersonal) and includes references to nature in his lectures (naturalist). Armstrong reminded through the medium of singing and chanting. Further, he also suggested musical techniques which lead to higher order of thinking skills and to increase understanding of the learning material. He advocated the use of musical concepts, for example, conflicting rhythms to denote conflict and quiet rhythms to signify harmony. He opined that using the musical, visual, intrapersonal,

interpersonal and all the other intelligences for teaching is essentially encompasses. Good teachers always have their practice in teaching; such a way reaching beyond the extension and the blackboard to awaken students minds.

In order to ensure deep learning, understanding and development of critical thinking skills in students is the core. Armstrong suggested that Bloom's "taxonomy of educational objectives" providing a kind of quality-control mechanism through which teachers can judge how deeply students' minds have been stirred by a multiple-intelligences curriculum

NEED AND SIGNIFICANCE OF THE STUDY

Multiple Intelligence is defined and elucidate as the mental capacity and potential that enable an individual to adapt himself to his environment and the more important part of it is the ability of the individual to adapt the environment to fulfill his needs such as psychological, social, emotional and spiritual. Without such two pronged adaptation, an individual can not carry himself as an efficient one in his life. Hence multiple intelligence poses itself as an imperative factor in an individual's life right from the infancy to adulthood. Learning as a process of acquiring change in the behaviour through intellectual and emotional attempts, depends much on multiple intelligence and its various dimensions. If learning is to lead to achievement, multiple intelligence has to play its significant role in leading the change of behaviour towards a desirable and expected role.

STATEMENT OF THE PROBLEM

The present investigation is to describe **"Impact of Multiple Intelligence on Academic Achievement of Higher Secondary Students"**.

OPERATIONAL DEFINITION OF THE KEY TERMS

Multiple Intelligence : Multiple Intelligence is a set of skills allowing individuals to find and resolve genuine problem they face. Multiple intelligence includes verbal/linguistic intelligence, logical/mathematical intelligence, visual/spatial intelligence, bodily-kinesthetic intelligence, musical/rhythmic intelligence, interpersonal intelligence, intrapersonal intelligence, naturalistic intelligence and existentialistic intelligence of Howard Gardner.

ACADEMIC ACHIEVEMENTS

“Achievement is proficiency of performance in a given skill or body of knowledge”
(Dictionary of Education, 1954).

HIGHER SECONDARY STUDENTS

By higher secondary students the Investigator means the students doing standards XI and XII in higher secondary schools in Tamil Nadu state.

OBJECTIVES

1. To find out the level of multiple intelligence and its dimensions of higher secondary students
 2. To find out the significant difference between multiple intelligence and its dimensions of higher secondary students in terms of gender
 3. To find out the significant difference between multiple intelligence and its dimensions of higher secondary students in terms of locality
 4. To find out the level of academic achievement of higher secondary students
-

5. To find out the significant difference between academic achievement of higher secondary students in terms of gender
6. To find out the significant relationship between academic achievement of higher secondary students in terms of locality
7. To find out the significant difference between multiple intelligence and academic achievement of higher secondary students

HYPOTHESES OF THE STUDY

There is no significant difference between male and female higher secondary students in their multiple intelligence and its dimensions

1. There is no significant difference between rural and urban higher secondary students in their multiple intelligence and its dimensions
2. There is no significant difference between male and female higher secondary students in their academic achievement
3. There is no significant difference between rural and urban higher secondary students in their academic achievement
4. There is no significant relationship between multiple intelligence and academic achievement of higher secondary students

METHODOLOGY

The investigator has used survey method for the present investigation.

POPULATION AND SAMPLE

According to John W. Best and James V. Kahan (1992) “A population is any group of individuals that have one or more characteristics in common that are of interest to the researcher. The population may be all the individuals of a particular type, or a more restricted part of that group” (p.11)

The population of this study consists of 300 higher secondary school students in around Namakkal district in Tamilnadu.

TOOLS USED

By keeping the various objectives of the present study, the investigator has necessitated the development of the following tools for the data collection.

1. Multiple Intelligence: Constructed and validated by M. Antony Raj and Philomine Bala (2009).
2. Academic Achievement Tool: No separate tool was prepared by the investigator to measure the achievement score. The mark in Tamil language in their half yearly exams conducted by the school as recorded in the respective school register were taken as the achievement score in Tamil language

STATISTICAL TECHNIQUES USED

The investigator has used Percentage analysis, mean, SD, t-test, Pearson Product Moment Correlation,

DATA ANALYSIS AND FINDING OF THE STUDY

TABLE 1 : Level of Multiple Intelligence of Higher Secondary Students

Dimension	Total Sample	Low		Moderate		High	
		No.	%	No.	%	No.	%
Verbal	300	53	29.4	199	41.7	48	28.29
Logical		46	13.4	209	60.4	45	26.2
Visual		55	29.4	194	41.6	51	29.0
Kinesthetic		51	9.1	203	54.5	46	36.4
Musical		42	29.5	217	41.5	41	29.0
Interpersonal		58	13.2	189	60.1	53	26.7
Intrapersonal		47	29.2	211	41.7	42	29.1
Naturalistic		49	12.4	204	62.6	47	25.0
Existentialistic		54	29.5	197	41.7	49	28.9
Multiple Intelligence			59	18.4	189	66.6	52

18.4%, 66.6%, 15% of higher secondary students have low, moderate and high level multiple intelligence respectively

TABLE 2 : Difference between Male and Female Higher Students in their multiple intelligence

Dimension	Male(N=166)		Female(N=134)		Calculated "t" value	Remarks
	Mean	S.D	Mean	S.D		
Verbal	12.27	1.395	12.29	1.400	0.174	NS
Logical	12.24	1.397	12.27	1.381	0.378	NS
Visual	16.56	1.190	16.56	1.196	0.025	NS
Kinesthetic	10.91	0.998	10.91	0.995	0.003	NS
Musical	16.56	1.192	16.56	1.204	0.009	NS
Interpersonal	12.30	1.377	12.25	1.397	0.629	NS

Intrapersonal	16.58	1.187	16.56	1.194	0,231	NS
Naturalistic	18.33	1.424	18.31	1.461	0.203	NS
Existentialistic	16.56	1.188	16.55	1.198	0.146	NS
Multiple Intelligence	132.31	3.110	132.26	3.099	0.284	NS

Table Value for d f 298 is 1.96 at level of significance

It is inferred from the above table that there is no significant difference between male and female higher secondary students in their verbal, logical, visual, kinaesthetic, musical, interpersonal, intrapersonal, naturalistic, existentialistic and multiple intelligence.

TABLE 3 : Difference between Rural and Urban Higher Students in their multiple intelligence

Dimension	Male(N=162)		Female(N=138)		Calculated "t" value	Remarks
	Mean	S.D	Mean	S.D		
Verbal	18.33	1.424	18.31	1.461	0.203	NS
Logical	16.56	1.188	16.55	1.198	0.146	NS
Visual	12.30	1.377	12.25	1.397	0.629	NS
Kinesthetic	16.58	1.187	16.56	1.194	0,231	NS
Musical	10.91	0.998	10.91	0.995	0.003	NS
Interpersonal	16.56	1.190	16.56	1.196	0.025	NS
Intrapersonal	12.27	1.395	12.29	1.400	0.174	NS
Naturalistic	16.56	1.192	16.56	1.204	0.009	NS
Existentialistic	12.24	1.397	12.27	1.381	0.378	NS
Multiple Intelligence	132.31	3.110	132.26	3.099	0.284	NS

Table Value for df 298 is 1.96 at level of significance

It is inferred from the above table that there is no significant difference between rural and urban higher secondary students in their verbal, logical, visual, kinaesthetic, musical, interpersonal, intrapersonal, naturalistic, existentialistic and multiple intelligence.

TABLE 4 : The level of Male and Female Students in their academic Achievement

Academic Achievement	Low		Average		High	
	N	%	N	%	N	%

Total	42	21.60	218	62.40	40	16.00
-------	----	-------	-----	-------	----	-------

It is inferred from table that 21.60% of the low, 62.40% average and 16.00% high level of achievement.

TABLE 5 : Difference between Boys and Girls Students in their Achievement

Category	Mean	SD	Count N	Calculated Value 't'	Remarks
Boys	60.15	14.82	166	2.46	Significant
Girls	55.18	12.05	134		

(At 5% level of significance, the table value 't' is 1.96)

Since the calculated value of 't' is greater than the table value for 298 degrees of freedom of 5% level, the hypothesis is rejected. Therefore there is significant difference between boys and girls students in their achievement in Tamil language.

TABLE 6 : Difference between Boys and Girls Students in their Achievement

Category	Mean	SD	Count N	Calculated Value 't'	Remarks
Rural	56.86	11.32	162	2.37	Significant
Urban	61.15	13.53	138		

(At 5% level of significance, the table value 't' is 1.96)

Since the calculated value of 't' is greater than the table value for 298 degrees of freedom of 5% level, the hypothesis is rejected. Therefore there is significant difference between rural and urban students in their achievement in Tamil language.

TABLE 7 : Achievement among The correlation value between Multiple Intelligence and Academic higher Secondary schools Students

Category	Σx	Σy	Σx^2	Σy^2	Σxy	Calculated Value 't'	Remarks
Male	4161	28681	258935	11132953	1628868	0.553	significant
Female	6203	46350	362439	17706074	2380849	0.480	significant

(For 298 df, at 5% level of significance, the table value is 0.138)

It is inferred from the above table that there is significant relationship between Multiple Intelligence and Academic achievement of higher Secondary schools Students in their Tamil language.

FINDINGS

- 18.4%, 66.6%, 15% of higher secondary students have low, moderate and high level multiple intelligence respectively.
- 21.60% of the low, 62.40% average and 16.00% high level of academic achievement.
- There is no significant difference between male and female higher secondary students in multiple intelligence and its dimensions
- There is no significant difference between rural and urban higher secondary students in their multiple intelligence and its dimensions
- There is significant difference between male and female higher secondary students in their academic achievement
- There is significant difference between rural and urban higher secondary students in their academic achievement
- There is significant relationship between Multiple Intelligence and Academic achievement of higher Secondary schools Students.

DISCUSSION



1. There is significant difference between boys and girls students in their academic achievement. The fact that girls were better than boys may be due to their hardworking nature towards achievement without any distraction.
2. There is significant difference between rural and urban high school students in their achievement. The result that urban students have high achievement may be due to the fact that urban students have complete infrastructural facilities for their studies. Even in their home too, the parents are ready to offer separate study room with necessary facilities like study table with chair, lightings, reference books etc.
3. The study reveals that there is a significant positive correlation between Multiple Intelligence and academic achievement among higher secondary students. The level of Emotional Intelligence highly influences or impact the achievement level of higher secondary students.

All the final analysis, the investigator has come out with a conclusion that Emotional Intelligence has significant impact on the Academic Achievement of Higher Secondary Students.

CONCLUSION

Schools are the organs of the life of the Nation. They are ultimately responsible for the development of well integrated, all round, wholesome personalities. They should contribute to the intelligence and values of their pupils physically, socially, morally, emotionally, personally and intellectually. They have to develop moral as well as national character. They have to develop moral as well as national character. The role of students in fostering multiple intelligence should in no way be underestimated. They have a magnificent role to play by making use of all opportunities in and out of the school to develop the multiple intelligence. Unless the students make conscious efforts in this direction, it will prove to be unserviceable. The students themselves should first try to develop their knowledge, values and academic abilities.

RERECENCES

1. Agarwal J.C (1986), Educational research, Arya Book Deport., New Delhi
2. Gardner, H. (1999), Intelligences Reframed: Multiple Intelligences for the 21st Century. New York. Basic Books.
3. Ajithraj. N.D and Sebastian. S (2005), A study on learning styles and Multiple Intelligence of B.Ed student, Unpublished M.Phil thesis, M.S University, Tirunelveli, Tamilnadu



4. Annaraja. P and Anthony Muthu. P (2009), A study on Multiple Intelligence of primary school teachers, Unpublished M.Phil thesis, Tamilnadu Teachers Education University, Chennai, Tamilnadu
5. Bindu Gowri v.p (2005), Impact of learning environment on academic achievement of higher secondary students. M.Phil. Dissertation, Manonmaniam Sundaranar University, Tirunelveli
6. Jeba Y and Annaraja. P (April 2008), A study on relationship between Multiple Intelligence and Achievement in Chemistry among High School Students, Unpublished M.Ed thesis, M.S University, Tirunelveli, Tamilnadu
7. Jemila, K. and Annaraja. P (April 2009), A study on Multiple Intelligences and Achievement in Commerce of Higher Secondary Students, Unpublished M.Ed thesis, Tamilnadu Teachers Education University, Chennai, Tamilnadu. M.Phil