International Journal of Computational Research and Development (IJCRD)
Impact Factor: 4.775, ISSN (Online): 2456 - 3137
(www.dvpublication.com) Volume I, Issue I, 2016

A STUDY OF MENTAL ABILITY OF HIGHER SECONDARY STUDENTS

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Cite This Article: Dr. A. C. Lal Kumar, "A Study of Mental Ability of Higher Secondary Students", International Journal of Computational Research and Development, Page Number 36-39, Volume 1, Issue 1, 2016.

Abstract:

The purpose of the paper is to determine the mental ability of higher secondary students in Vellore district of Tamilnadu. The sample comprised 300 higher secondary students out of these 148 male and 152 female. The investigator used the statistical techniques, mean, standard deviation 't' test and 'F' test. The results reveal that there is no significant difference between the gender, type of school, locality of school, medium of school, nature of school, parental education, parental occupation, birth order and type of family towards mental ability.

Introduction:

Education is a powerful instrument used by the society to shape the future and mould the next generation. Of all the stages of education, namely: kindergarten, primary and secondary, secondary education plays an important and crucial role in the meaningful development of a child. Secondary education is a period of education planned especially for young people of ages approximately from 15 to 18, in which the emphasis is on the basic tools of learning, expression, and understanding to the use and extension of the tools in exploring areas of thought and thinking, and in exploring and acquiring information, concepts, intellectual skills, and attitudes. It is one which is all the more important because it lays the foundation of the individual's future education or vocational choices, which determines the future occupational, social or economic positions in the society.

Mental Ability:

In spite of its wide and common current usage and ancient roots, general mental ability is relatively a recent concept of psychology. Almost every writer on the subject has put forward his own definition and some in the fullness of time have offered even more than one. It is true that some of the apparent agreement is mainly verbal but many of them reflect fundamental differences of opinion concerning the concept of general mental ability.

General mental ability is a concept rather than a power or a thing that can be observed. It abuses difficulty when its definition is attempted and it leads to a great variety of interpretations. Intelligence, as far as a layman is concerned, manifests itself in terms of how an individual behaves in society According to Stern (1914), "Intelligence is the general capacity of an individual to consciously adjust his thinking to new requirements. It is general mental adaptability to new problems and conditions of life. Sternberg's (1985) theory of intelligence contains three sub- theories, one about context, one about experience and one about cognitive components of information processing. The contextual sub-theory attempts to specify what would be considered intelligent in a given culture or content. According to Sternberg, culturally intelligent behaviour involves adapting to one's present environment, selecting a more optimal environment or respecting one's current environment. The theory claims that expression of any intelligent behaviour will be a function of experience one has with particular class of tasks being tested. According to McMillan (1990) intelligence means the ability to reason and to profit by experience. An individual's level of intelligence is determined by a complex interaction between his heredity and environment. According to Gardener's (1999) theory of multiple intelligence, there are at least eight separate intelligences - logical, linguistic, spatial, bodily, kinesthetic, interpersonal, intrapersonal and naturalist. He has stressed that there may be more kinds of intelligence-eight is not a magic number. Recently, he has speculated that there may be spiritual intelligence and an existential intelligence or the abilities to contemplate big questions about the meaning of life. He says that individuals may excel in one of these eight areas but have no remarkable abilities in the other seven. So, if boys excel in math and science, it does not mean they are more intelligent than females. Gardener contends that intelligence is the ability to solve problems and create products or outcomes that are valued by culture.

We know that with the physical development of the child his intellectual development also takes place. The speed of intellectual development is rather slow in earlier years. The child cannot possibly perform such tasks that require high mental abilities. His Mental abilities develop with the advancing years and he is able to solve the complex problems of life. Some of the features of these mental abilities are given below.

- ✓ All these qualities and abilities develop side by side.
- ✓ However, there may be differences in the rate of development of these qualities and abilities at various stages of the child. There may be a quicker development of one aspect or area of mental activity than the other at one stage of life. Other aspects may fully develop at the other stage.

- ✓ Even those qualities and abilities, which do not develop at a particular stage and have a faint development at that stage. They develop to full extent as the child grows older and older.

Statement of the Problem: The problem chosen for the study may be stated as "A Study of mental ability of higher secondary students.

Sample of the Study: The sample of the present study consisted of 300 higher secondary students. These samples are drawn from Vellore district at Tamilnadu. Among these samples148 were male and 152 female. Random sampling techniques were used to draw the sample form the higher secondary students.

Statistical Techniques Used: The investigator used the statistical techniques, Mean, SD, 't' test and 'F' test to accept or reject hypotheses

Operational Definitions of Key Term Used: Encyclopedic Dictionary of Education (1997) defines Mental Ability as a relatively general type of capability of thought processes evaluated by the kind standardized test that is often called a test of mental abilities: among such abilities are verbal ability, numerical ability and spatial visualization ability.

Tool Used in the Present Study: Mental Ability was developed by Dr. (Mrs) Rama Tiwari and Roma Pal

Description of the Tool: The Mental Ability is used to measures one's Mental Ability. This includes 70 items. The scoring procedure of this inventory is very simple. In this choose the best answer method. For right answer one is given and wrong answer zero is given.

Objectives of the Study:

- ✓ To find out the significant difference if any between the male and female of Higher secondary students in respect of their Mental ability
- ✓ To find out the significant difference if any between the Type of school towards Higher secondary students in respect of their mental ability
- ✓ To find out the significant difference if any between the Locality of school towards Rural and urban of Higher secondary students in respect of their Mental ability
- ✓ To find out the significant difference if any between the Medium of school towards Higher secondary students in respect of their Mental ability
- ✓ To find out the significant difference if any between the Nature of School towards Higher secondary students in respect of their mental ability
- ✓ To find out the significant difference if any between the Parental educations towards higher secondary students in respect of their mental ability.
- ✓ To find out the significant difference if any between the Parental Occupation towards Monthly income and self employed of higher secondary students in respect of their mental ability
- ✓ To find out the significant difference if any between the Birth order towards Higher secondary students in respect of their Mental ability
- ✓ To find out the significant difference if any between the Type of family towards Higher secondary students in respect of their mental ability

Hypothesis of the Study:

- ✓ There is no significant difference between the male and female of higher secondary students in respect of their mental ability
- ✓ There is no significant difference between the Type of School towards Higher secondary students in respect of their mental ability
- ✓ There is no significant difference between the Locality of the school towards Higher secondary students in respect of their mental ability
- ✓ There is no significant difference between the Medium of school towards Higher secondary students in respect of their mental ability.
- ✓ There is no significant difference between the Nature of school towards Higher secondary students in respect of their mental ability.
- ✓ There is no significant difference between the Parental education towards higher secondary students in respect of their mental ability
- ✓ There is no significant difference between Parental Occupation towards Monthly income and self employed of higher secondary school students in respect of their mental ability
- ✓ There is no significant difference between Birth order towards higher secondary students in respect of their mental ability
- ✓ There is no significant difference between the Type of Family towards Higher secondary students in respect of their mental ability

Differential Analysis — Mental Ability:

Differential analysis for mental ability scores of higher secondary students.

Gender and Mental Ability:

Table 1: 'T' test among the sub sample of gender with respect to mental ability

Gender	N	Mean	S.D	t-Value	L.S

Male Female	148 152	40.16 39.63	15.55 15.05	0.296	NS

From the table 1 we may infer that the calculated' value is 0.296 is less than the table (1.97) at 0.05 level. Hence there exists no significant difference between male and female Students among secondary students with regard to their mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Type of School and Mental Ability:

Table 2: 'F' test among the sub sample of Type of School with respect to mental ability

Type of School	Sum of Squares	Mean Square	DF	F Value	LS
Between the groups	802.42	401.21	2	1.726	N.S
Within groups	69037.37	232.449	297		
Total	69839.79		299		

It is evident from the table 2 the calculated 'F' value is 1.726 which is not significant at 0.05 level. Hence the framed null hypothesis was accepted. It is inferred that there is no significant difference among the sub-sample of Type of School with respect to mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Locality of School and Family Environment:

Table 3: 'T' test among the sub sample of locality of school with respect to mental ability

Locality of School	N	Mean	SD	t- Value	L.S
Rural Urban	168 132	39.92 39.87	14.79 15.73	0.032	NS

From the table 3 we may infer that the calculated' value is 0.032 is less than the table (1.97) at 0.05 level. Hence there exists no significant difference between rural and urban students among secondary school students with regard to their mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Medium of School and Mental Ability:

Table 4: 'T' test among the sub sample of medium of instruction with respect to mental ability

Medium of School	N	Mean	SD	t-Value	L.S
Tamil English	140 160	39.21 40.49	14.93 15.60	0.723	NS

From the table 4 we may infer that the calculated' value is 0.723 is less than the table (1.97) at 0.05 level. Hence there exists no significant difference between Tamil and English students among secondary school students with regard to their mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Nature of School and Mental Ability:

Table 5: 'F' test among the sub sample of Nature of school with respect to mental ability

Nature of School	Sum of Square	Mean Square	DF	F Value	LS
Between the groups	78.50	39.254	2	0.167	N.S
Within groups	69761.28	234.88	297		
Total	69839.79		299		

It is evident from the table 5 the calculated 'F' value is 0.167 which is not significant at 0.05 level. Hence the framed null hypothesis was accepted. It is inferred that there is no significant difference among the sub-sample of nature of school with respect to mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Parental Education and Mental Ability:

Table 6: 'F' test among the sub sample of parental education with respect to mental ability

Parental Education	Sum of Squares	Mean Square	DF	F Value	LS
Between the groups	1168.21	389.40	3	1.678	N.S
Within groups	68671.57	231.99	296		
Total	69839.79		299		

It is evident from the table 6 the calculated 'F' value is 1.678 which is not significant at 0.05 level. Hence the framed null hypothesis was accepted. It is inferred that there is no significant difference among the sub-sample of parental education with respect to mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Parental Occupation and Mental Ability:

Table 7: 'F' test among the sub sample of parental occupation with respect to mental ability

Parental Occupation	Sum of Squares	Mean Square	DF	F Value	LS
Between the groups	0.543	0.543	1	0.002	N.S
Within groups	69839.25	234.36	298		

Total	69839.79		299		

It is evident from the table 7 the calculated 'F' value is 0.002 which is not significant at 0.05 level. Hence the framed null hypothesis was accepted. It is inferred that there is no significant difference among the sub-sample of parental occupation with respect to mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Birth Order and Mental Ability:

Table 8: 'F' test among the sub sample of birth order with respect to mental ability

Birth order	Sum of Squares	Mean Square	DF	F Value	LS
Between the groups	193.49	96.74	2	0.413	N.S
Within groups	69646.29	234.49	297		
Total	69839.79		299		

It is evident from the table 8 the calculated 'F' value is 0.413 which is not significant at 0.05 level. Hence the framed null hypothesis was accepted. It is inferred that there is no significant difference among the sub-sample of birth order with respect to mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Type of Family and Mental Ability:

Table 9: 'T' test among the sub sample of type of family with respect to mental ability

Type of Family	N	Mean	SD	t- Value	L.S
Joint	146	40.80	15.20	0.998	NS
Nuclear	154	39.03	15.35		

From the table 9 we may infer that the calculated "t' value is 0.998 is less than the table (1.97) at 0.05 level. Hence there exists no significant difference between Joint and Nuclear Students among secondary school students with regard to their mental ability. Therefore the above null hypothesis is accepted and research hypothesis is rejected.

Major Findings of the Study:

- ✓ There is no significant difference between Male and Female higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Government, Aided, and Private higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Rural, and Urban higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Tamil and English higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Boys, Girls, and Co-Education higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Uneducated, School Education, College Education, and Diploma higher secondary students with respect to mental ability
- ✓ There is no significant difference between Monthly income and Self Employed higher secondary students with respect to mental ability.
- ✓ There is no significant difference between 1st, 2nd, and 3rd employed higher secondary students with respect to mental ability.
- ✓ There is no significant difference between Joint and Nuclear employed higher secondary students with respect to mental ability.

References:

1. Best, John, W., & Khan, James, V. (2008) Research in Education, Tenth Edition, New Delhi. Prentice Hall of India Private Ltd.
2. Garrett, Henry & Wood Worth, R.S.(2008). Statistics in Psychology and Education, Surjeet Publications Ltd, New Delhi.
3. Guilford. J.P (1956) "Fundamental Statistics in Psychology and Education" New York, Mc Graw-Hill Book Company, Inc.
4. Lokesh Kovl (1990) , "Methodology of Educational Research" (2nd ed) New Delhi, Vikas Publishing house Pvt. Ltd.,
5. McMillan, D.B. (1990). Dictionary of Psychology. London: McMillan Press Ltd.
6. Stern, William (1914) Barth, original German edition, Method Intelligence zprüfung: und Amending an Schulkindern. The Psychological Methods of Testing Intelligence.
7. Sternberg, R. J. (1985). Beyond IQ: A Triarchic Theory of Intelligence. Cambridge: Cambridge University Press.