

A study on intelligence of higher secondary school teachers of Thanjavur district

*¹Dr. K Suresh, ²Dr. P Srinivasan

¹ Guest Teacher Educator, Department of Physical Science Education, Government College of Education, Orathanad, Tamilnadu, India

² Associate Professor, Department of Education, School of Education, Central University of Tamilnadu (CUTN), Tiruvarur, Tamilnadu, India

Abstract

The Normative survey research was conducted to find out the level of Intelligence of higher secondary school teachers of Thanjavur District, Tamilnadu, India. The random samples of 152 higher secondary school teachers were selected for collecting data. The dependent variable of the study is Intelligence and the moderator variables of the study are Gender, Locality, Subject Taught, Management Type, School Type and Years of Experience. The investigators of the study have used Test of General Intelligence and it was constructed and standardized by Misra and Pal (2012). Descriptive and Inferential analysis were used to test the hypotheses. Descriptive analysis envisages that the Intelligent Quotient (IQ) of higher secondary school teachers is superior. Inferential analysis explores that the Intelligent Quotient (IQ) of the high school teachers is significant with Gender and not significant with other moderator variables.

Keywords: intelligent quotient, moderator variables, normative, thanjavur and education

1. Introduction

In India, the education system faces a lot of problems almost in every walk of its life since independence. The field of education has also been affected with those significant problems. The ultimate aim of human life is to set good and effective education for youth to settle down in the service or job for better future. But the education stream of India could not used to gratify the thirst of youth. For this reason, the ancient teaching – learning process had been teacher centered. Then, now it is modified as learner centered. The continuous modification had been made in different level of education but it effect could not produce a fruitful educational environment. It is the fact, there are three factors affecting teaching and learning commonly such as, teaching factors, learning factors and common factors like classroom climate.

For a good teaching-learning process, these factors must be participating significantly. The unbalanced participation of these factors makes the process unfruitful and do not make an effect on education. The control of those factors will help the process as effective. On the other hand, the innovative models or technologies put their influences in education is not much and for this purpose, most of the researches have been conducted in education and making modification simultaneously. According to Sharma and Sharma (2004) [11] quoted that the objectives of the research should be to effect improvements in teaching. The intellectual type of research in education is being discouraged. Researchers of problematic and reformative are being encouraged. From these backdrops, the investigator believed that this research will help to give right direction for development of education and partially solve the problems of education in India.

2. Intelligence

Intelligence is an integral character of human nature and so it is not easily definable. But, the individuals can be distinguished by more or less intelligent in day to day life. According to Bhatta Charya, the alertness with regard to the

actual situation of life is an index of intelligence (as cited in Kundu & Tutto, 2011) [9]. Intelligence is a verb or adverb in meaning but it is a noun in its form. Intelligence may be gives as a meaning like observation, memory, imagination, conception and reasoning. On the other hand, the individual responses in a particular situation like interest, attitude, desired knowledge and skill etc are also may be the meaning of intelligence. In ancient period of India, Rishis named the term intelligence (Psychologically termed) as Viveka'. The succeeding paragraphs will give a light of knowledge about intelligence.

2.1 Definitions of Intelligence

According to Aristotle, "A definition is a phrase signifying a things essence". By 'essence' which means fundamental attributes of a thing. A definition is a precise statement of the meaning of a word (as cited in Ghosh, 1992) [5]. Definition gives a way to understand the exact meaning of the terms and it also gives an accurate picture about the terms. The following definitions has given by some eminent scholars can throw more light on the meaning and nature of intelligence.

According Jean Piaget "Intelligence is Adaptation to physical and social environment (as cited in Jha & Bhatt, 2010) [7].

According to Terman (1921), "An individual is intelligent in promotion as she is able to carry on abstract thinking (as cited in Srivastava, 2006) [12].

According to E.L. Thorndike "Intelligence as sitting the power of making good responses from the point of view of truth and fact (as cited in Kundu & Tutoo, 2011) [9]

According to Buckingham the term intelligence is defined as "Intelligence is the learning ability". (as cited in Jha & Bhatt, 2010) [7].

According to Waygon (1937). "Intelligence is the capacity to learn and adjust to relatively new and changing condition (as cited in Srivastava, 2006) [12].

As it has been defined earlier by the psychologists and eminent scholars, they are differing themselves in defining

intelligence by its various concepts. Intelligence is not a single or simple faculty but, a combination of various elements. These definitions are used to emphasize that intelligence is a multi-definite concept. Defining intelligence is a complex task with the background of the preceding definitions, the investigator defines intelligence as the ability to learn quickly, think divergently, easily identify the exact solution and compromise with novel or critical atmosphere with the use of psycho-physical co-ordinations. The authors of this paper defined intelligence as “capacity to acquire and apply knowledge in new situation and it is a mental ability to think about minute, complex and abstract manner which helps to adjust with changing situation”.

3. Need and Significance of the Study

In an ideal classroom situation, generally two different types of roles are identified directly such as Teacher's role and Pupils' role. At first, the teacher role is teaching and to facilitate the learning process. Teacher must help the students to learn and how to learn and it is a responsibility of the teacher. Second, the student's role, it is learning and it may be affected by the inherent facts of an individual. For an ideal teaching-learning process, the classroom should be in reality centered. The reality centered classroom fosters students' active participation as well as encouraging successful learning. The teacher acts as a guide in the reality centered classroom and promotes learning. On the other hand, the classroom climate also affects the students' learning too. Therefore, the three roles such as teacher's, students' and classroom roles are terminating the effective teaching – learning.

The teacher characteristics/elements, student's character/elements and classroom characteristics /elements are made a great influence on teaching – learning process. In here, the investigator selected a certain characteristic/elements of teachers, students and classroom for showing the influences between them. The need of the characteristics is given in the following paragraphs.

3.1 Intelligence

Intelligence is often confused with learning, thinking, determination, problem solving, concept formation and attainment, face new situation and achievement. It is none of these but affirms them all in a positive way, it improves performance. It is contrast from animals, man is considered to be endowed with above mentioned cognitive abilities which make them a rationale being. Definitely, the man is superior to animals in all such aspects of behaviour. But, human beings themselves are not all alike. There are wide individual differences. Teachers easily identify these differences among the pupils and easily mingled with them is impossible. But it is possible, if the teacher have a special ability. The special ability is intelligence. According to Wechsler (1944), the intelligence is the aggregate or global capacity of an individual to act purposefully to think rationally and to deal effectively with his environment (as cited in Srivastava, 2006) ^[12].

The teacher should act as purposeful and aimed to develop the students' achievement. Even though, it is a complex to the teachers that they are facing the situation haphazardly in the classroom always a new one. This is supported by Wagon “Intelligence is the capacity to learn and adjust to relatively new and changing conditions (as cited in Srivastava, 2006) ^[12].”

It has defined as intelligence as stability to adjust environment (Kundu & Tutoo, 2011) ^[9]. Jean Piaget states the intelligence is adaptation to physical and social environment (as cited in Jha & Bhatt, 2010) ^[7]. From the earlier passages, most of the psychologists insisted about intelligence is an ability to adjust novel situation. The teacher faces a novel situation while entering the classroom, the one day classroom situation could not be same on another day and the teacher cannot expect the situation to be faced. The teacher may adjust the situation and identify a solution while in trouble, if the teacher be an intelligent. So, the intelligence is an essential ability to the teacher for managing a novel situation and troubles.

4. Research Questions of the Study

In any type of research, the direction is must to guide the research. The research question gives the direction to the researcher and it is used to initiate the research process. According to Blaikie (2000) explained the importance of research question that formulation of research questions is the real starting point in preparation of a research (as cited in Ahuja, 2001) ^[11]. And the view of Tavish and Loether (2011) ^[4], “research question can be about a wide variety of things that pique the investigator's curiosity”. So the investigator of the study has made some useful research questions for initiate the research in a particular direction to fulfill the curiosity of the investigator. They are,

1. Does the Intelligence Quotient of the high school teachers is superior.
2. Is there any significance difference in Intelligence Quotient of higher secondary school teachers with regard to the moderator variables? such as
 - Gender,
 - Locality of the School,
 - Subject Taught,
 - Management Type,
 - School Type, and
 - Years of Experience.

5. Hypotheses of the Study

Hypothesis is a tentative assumption or scientific assumption which is tested as a main part of research by using some useful statistics and it gives the result of the study by rationale. According to Koul (1984) ^[8], etymologically hypothesis is made up of two words, “hypo” (less than) and “thesis”, which means less than or less certain than a thesis. The hypothesis is a powerful tool in research process to achieve dependable knowledge. The words from Sidhu (2006) that hypothesis has a very important place in research although it occupies a very small space in the body of a thesis. This emphasizes the importance of the hypothesis. It is the reflection of the researcher thoughts on what could be investigate and it is a scientific guess of the result of the research. The following hypotheses are formulated for the study as below,

1. The level of the Intelligence Quotient of higher secondary school Teachers is superior.
2. There is no significant difference in Intelligence Quotient of higher secondary school teachers with regard to the moderator variables such as
 - Gender,
 - Locality of the School,
 - Subject Taught,
 - Management Type,

- School Type, and
- Years of Experience.

6. Methodology

Research methodology is a systematic way to solve a research problem. It describes the various steps of research to be adopted in solving research problem. It may be called as the procedure adopted by the researcher in research work for realization of objectives. It is a systematic and scientific manner of conducting an investigation on research problem. According to Good, “Methodology is a science of methods or principles of procedures” (as cited in Suresh, 2012) [13]. Research methodology is broader concept because it includes too many procedures are used to conduct a research. It also includes the design of the study.

6.1 Method

The investigator of the study has selected the Normative Survey Method which is more suitable for collecting data at a time.

6.2 Sample of the study

Sample is a small portion or unit of the large population. A good sample should reflect the parameters of the population. According to Best and Kahn (2006) [3] defined the sample “A sample is a small portion of the population that is selected for observation and analysis”. The sample comprised of 152

higher secondary school teachers of Thanjavur District, Tamilnadu and they are selected by using simple random sampling technique.

6.3 Tools of the Study

Tools are very essential instrument to measure or assess or evaluate any type of variables. According to Best (1998) [2], “Research tool is the means for describing and quantifying the data collected by the investigator many different methods and procedures have been developed to aid in the distinctive ways of describing and quantifying data”. The following tool has been used for collecting the data.

6.3.1 Intelligence Scale

For measuring intelligence quotient of higher secondary school teachers, the test of general intelligence was used. Based on the items’ ability and subject experts’ advices, the investigator has trusted with the test is most suitable to measure general intelligence of teachers. It was constructed and standardized by Misra and Pal (2012) [10].

Reliability

The reliability of the test (sub tests) has been found by using split half and test-retest methods with 148 students’ studying in under and post graduate degrees. The reliability of the sub tests is given in the below table 3.2.

Table 1: Reliability for Various Sub Tests of Test of General Intelligence

S.No	Test	Split half Reliability	Test-Retest Reliability
1.	Word Meaning	0.58	0.68
2.	Analogy	0.80	0.74
3.	Classification	0.72	0.71
4.	Number Series	0.84	0.76
5.	Code Transformation	0.93	0.82
6.	Syllogism	0.51	0.50
7.	Total Test	0.95	0.81

Validity

The criterion related validity was calculated by finding out product moment correlation coefficient between scores on test of general intelligence and scores on Catell’s culture fair test of intelligence scale 3 form A. The value of correlation is 0.68.

Norms

Norms are used to compare the scores with the normal scores. According to Thorndike and Hagen (1970), “Norms constitute frames of references for the interpretation of test scores” (as cited in Goswami, 2011) [6]. The Norms of intelligence test is given in below table 3.3.

Table 2: Norms of Intelligence Test

S.No	Normalized Standard Scores of IQ	Representation
01.	Below 24	Idiots
02.	25-49	Imbecile
03.	50-69	Morons
04.	70-79	Border Line
05.	80-89	Below Average
06.	90-109	Normal/Average
07.	110-119	Above Average
08.	120-129	Superior
09.	130-139	Very Superior
10.	Above 140	Genius

The obtained raw score must be converted into normalized stand score of IQ with a mean of 100 and a standard deviation of 16.

6.4 Statistical Analysis

The following statistical analyses have been used to test the hypotheses.

- Descriptive Analysis (mean)
- Inferential Analysis (t-test and F-test)

7. Results and Conclusion

Conclusion is an imperative part of a research. Because, it bear up the results or description or a logical reason or rational or a justification of the findings. The effectiveness of the entire research is depending on the conclusion. The researcher has the responsibility to conclude the results or findings and it cannot be skipped. For making the conclusion as unbiased, the investigator scrutinizes the findings backgrounds and presented possible rational facts to all findings and they may be proved by other studies. The investigator has separated or integrated the findings based on their sub-variable for giving conclusion and are given below.

1. The level of Intelligence Quotient of higher secondary

school teachers is superior.

- It may be due to the experience of the teachers and most of the teachers have been appointed through Teacher Eligibility Test. Hence, the teachers may have high mean intelligence and it leads to superior.
2. There is a significance difference in Intelligence Quotient of higher secondary school teachers with regard to gender.
 - Intelligence has different dimensions. So the change in intelligence may occur from the dimensions like verbal intelligence, reasoning ability and so on of the individuals. Generally, the girls have high verbal intelligence and the boys have high reasoning ability and it may lead the variation between them.
 3. There is no significant difference in Intelligence Quotient of higher secondary school teachers with regard to the moderator variables such as locality of the school, subject taught, management type, school type, and years of experience.
 - The locality of the school, subject taught, management type, school type and years of experience does not make any influence on Intelligence Quotient of higher secondary school teachers.

Table 3: Descriptive Analysis of Teacher’s Intelligence Quotient Scores

S.No	Main Variable	Mean Value	Maximum Value	Description
01.	Intelligence	48.80	60	Superior

Table 4: N, M, σ and t-values of Intelligence Quotient Scores

Moderator Variable	N	Mean	Standard Deviation	Standard Error	t-Value	Significance at 0.05 Level
Gender	Male	79	47.59	7.431	2.298	Significant
	Female	73	50.10	5.812		
Locality of the School	Rural	67	48.81	6.972	0.016	Not Significant
	Urban	85	48.79	6.698		

Table 5: Summary of ANOVA of Intelligence Quotient Scores

Moderator Variable	Groups	SS Value	df	MSS = SS/df	F-Value	Significance at 0.05 level
Subject Taught	Between Groups	104.802	2	52.402	1.136	Not Significant
	Within Groups	6871.876	149	46.120		
	Total	6976.678	151			
Management Type	Between Groups	181.450	2	90.725	1.989	Not Significant
	Within Groups	6795.228	149	45.606		
	Total	6976.678	151			
School Type	Between Groups	75.435	2	37.717	0.814	Not Significant
	Within Groups	6901.243	149	46.317		
	Total	6976.678	151			
Years of Experience	Between Groups	167.026	2	83.513	1.827	Not Significant
	Within Groups	6809.652	149	45.702		
	Total	6976.678	151			

8. References

1. Ahuja Ram. *Research methods: Definition of research questions, hypothesis and variables*. New Delhi: Rawat Publications, 2001.
2. Best W. John, Kahn, James V. *Research in education*. New Delhi: PHI Learning Private Learning, 1998.
3. Best W. John, Kahn, James V. *Research in education: 10th ed*. New Delhi: PHI Learning Private Learning, 2006.
4. Don G, Tavish MC, Herman Loether J. *Social research: Meaning of research question*. New Delhi: PHI Learning Private Ltd, 2011.
5. Ghosh BN. *Scientific method and social research: Definition of definition*. New Delhi: Sterling Publishers Private Limited, 1992.

6. Goswami Marami. *Measurement and evaluation in psychology and education*. New Delhi: Neelkamal Publications Private Limited, 2011.
7. Jha S, Avdhesh, Bhatt Dipiti P. *Educational psychology: intelligence definition and theories*. New Delhi: APH Publishing Corporation, 2010.
8. Koul Lokesh. *Methodology of educational Research: meaning of hypothesis*. New Delhi: Vikas Publication House Private Limited, 1984.
9. Kundu CL, Tutoo DN. *Educational psychology: Intelligence definitions and theories*. New Delhi: Sterling Publishers Private Limited, 2011.
10. Misra KS, Pal SK. *Test of General Intelligence*. Agra: National Psychological Corporation, 2012.
11. Sharma Ramnath, Sharma Rajendra K. *Problems of education in India: Functional research*. New Delhi: Atlantic Publishers and Distributors, 2004.
12. Srinivastava DS. *Educational psychology: Intelligence definition and theories*. New Delhi: Shree Publishers and Distributors, 2006.
13. Suresh K. *Teaching style and leader behavior of professors working in arts and science colleges in Thanjavur District*. Unpublished M.Phil. Dissertation, Tamil university, Thanjavur, 2012.