

A Study of Cognitive Abilities With Reference To Intelligence among Forward and Backward Social Classes of Mithila Region, North Bihar

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Abstract

Original Research Article

Cognitive abilities refer to “the ability of an individual to perform the various mental activities most closely associated with learning and problem solving. It is important to be mentioned here that it is generally assumed that higher cognitive level plays a pivotal role in nation’s building; hence, the present study is of utmost value. Thus, the present study was aimed at studying cognitive abilities with reference to intelligence among forward and backward classes of Mithila region of North Bihar. For the present study total sample consisted of seventy (N=70) undergraduate students comprises forward group of students (n=35) and backward group of students (n=35) selected randomly. All students were studying in different constituent colleges of L. N. Mithila University, Darbhanga. Major cities viz., Darbhanga, Madhubani and Samastipur were given priority to collect the data on the phenomenon. Having collected information on the Bihar General Intelligence Test developed by Mohsin (1968), data were tabulated to find out the results as per norms developed by author. Finally results revealed that there is significant difference in terms of cognitive abilities with reference to general intelligence capacity between the group of forward and backward social group of students in Mithila region of North Bihar, although, forward social class group of students have been found more prone towards perceived general intelligence capacity. Present findings have been discussed in detail by giving appropriate reasons.

Keywords: Cognitive Abilities, General Intelligence Capacity, Forward and Backward Social Classes, Mithila Region, North Bihar.

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INTRODUCTION

Since long human beings are engaged in knowing, exploring and searching the things for their best livelihood based on their cognitive levels and to understand the problems of human behaviour to overcome the situations within the environment. It is fact that cognitive ability which enables on individual to judge and discriminate between good and bad, devil and saint, moral and immoral, ethical and unethical and fixes priorities of action.

Cognitive abilities include mental functions like sensation, perception, learning, memorizing, thinking, imagination and creativity. It is important to be mentioned here that cognitive functioning is a term referring to a human’s ability to process thoughts that should not deplete on a large scale in healthy individuals. It is defined as the ability of an individual to perform the various mental activities most closely associated with learning and problem solving. Moreover, it is to be mentioned that without cognition abilities, one can not show his intelligence. Thus, now

the term, IQ or Intelligence Quotient came in to being to test cognitive ability. It is a way to test one’s general ability to solve general problems and to understand the concepts. It is because of the fact that Intelligence is basically the ability to perform well in cognitive tasks. Hence, the present endeavor was aimed to study the cognitive abilities with reference to general intelligence among backward and forward social classes of Mithila region of North Bihar.

It is a general assumption that intelligence changes with age, but the kind and degree of change depend on the age range and environmental influences. Human development, particularly intellectual development, is not independent of the environment, there is continuous interaction.

It has also been viewed that children whose parents are well educated are more likely to show increases in IQ than decreases [1]. This finding suggests that intellectual growth is greater in children of well – educated parents who provide a home environment that favors intellectual development.

It is important to be mentioned here that cognitive abilities are not evenly distributed among general population but differ in terms of social sections as it is generally supposed that higher social class and caste groups have higher intellect as compared to lower social class people.

In India there have been paid very little attention to the possible role of genetic factors in relation to mental abilities. Sinha [2] has commented that traditionally, the Indian society was stratified in to four tracks as Ordered “Varnas” – Brahmins, Kshatriyas, Vaishyas, and Sudras. Among these the Harijan (Scheduled Caste) were the “Sudras”. They have been treated at the lowest level of social order, disadvantageously possessed with poor abilities, and did the manual blue collar jobs. They suffer from the lack of parity and equity with higher caste people with respect to social recognition. In contrast, the Brahmins were genetically regarded by birth as an “inherent container” of wisdom and have been assigned from times immemorial scholastic – astrological which appear to be conducive to better intellectual development, viz., a preponderantly preoccupation and pursuit of such activities. Although, the Harijan are not known to have a scholastic pursuit tradition and over generations they were assigned to blue – collar job which does not require any excellence at all in performance of cognitively – oriented tests.

In India, few attempts have been made to study the intelligence of contrast (High and Low) caste groups i.e. scheduled caste and non – scheduled caste (Harijans and Brahmins; Tribals and Non – tribals) by Das *et al.*, [3]. In one of the important study conducted by Rath *et al.*, [4] viewed that subjects of Harijan castes were inferior to Brahmins irrespective of SES in measures of mental ability. Some other studies Agarwal [5], Thakur [6], Panda and Das [7] and Rangari and Palsone [8] also indicated difference among scheduled caste (SC) and non – scheduled caste (NSC) subjects in intelligence and support the findings of Rath *et al.*, [4]. Moreover, Majeed and Ghosh [9] reported the influence of an amalgam of heterogynous environmental variables and showed the negative effect of “poor” environment on cognitive competence.

In addition to the above context, it is also important to be mentioned that the vedic “Varna Vayawastha” allotted different roles to different sections of social class. As per norms of “Varnas” by which the Brahmins were allotted educational, religious and other intellectual functions they promoted and stimulated their cognitive abilities. They were made the custodians and interpreters of Vedas which were the main sources of knowledge and wisdom. The roles of other ‘Varnas’ were subordinate to them. Since then it is generally supposed that the Brahmins are superior to other social class people in intellectual and allied abilities. A group of scientists have explained in terms

of inheritance of superior genes and gene – pool theory [10]. Similarly various studies on the phenomenon have been conducted by Jenson [11-13], Moreover, Jensen & Reynolds [14] also conducted an important study on race, social class and ability difference on the WISC – R and found significant difference in terms of race , social class with regard to their cognitive ability.

The above contention has empirical supports as well as oppositions as Anderson and Nicholds [15]; Bluuu [16]; Eysenck [17] and others have supported the better cognitive abilities of superior social and racial class samples. Few Indian studies have been found on the phenomenon in which Panda and Das [7]; and Singh [18], they viewed that resource factors are more responsible for the development of cognitive abilities. Recently, an important study conducted by Gananadevan [19] on 400 higher secondary students pertaining to social intelligence and viewed higher secondary students differ significantly with respect to caste, mother’s education and parent’s income.

National Importance of the Present Study

Cognitive ability is one of the important aspects of behavioral sciences and psychology as well. It refers to perceptual, memory and intellectuals, thinking abilities including creativity. Cognitive Ability has broad spectrum of higher mental functions which distinguished human beings from other vertebrates. This ability is considered as the special gift of “Nature” to the human species and this enables men and women to contribute to the growth and development of science and technology. Besides it plays a vital role in creation of advancement and preservation of culture and civilization. To provide best livelihood our nation India and State Government as well have launched several programmes for giving best resources especially to the weaker section of society to have equal opportunity towards upward mobility. It is to be said that the superiority of human beings over other animals is maintained due to its higher cognitive potential. Hence, men’s rationality and creativity are the functions of his cognitive abilities. Thus, the present study is of utmost value in the sense that population groups of social classes that have been developed especially in India under different political, historical and cultural conditions and social geographical isolation from one another for many generations, are expected to differ in their performance of general intelligence. It is because of the fact that general intelligence refers to general ability of an individual which is common and almost found in all human species. By looking at facts, the present research endeavor is planned to study cognitive abilities with special reference to intelligence among backward and forward social classes of Mithila region, North Bihar. Mithila region is a very socially, culturally and educationally. In this region forward and backward social classes are well settled and making rapid headway for achieving national goals.

Objective of the Present Study

Having reviewed the extensive survey of literature available, it has been found that various studies are available on the phenomenon but none of the studies are available with particular reference to Mithila region of North Bihar. This is still an unexplored area, although, region is full of resources is being provided by union and state government as well. Hence, the present study, i.e. “A study of cognitive abilities with reference to intelligence among backward and forward social classes of Mithila region, North Bihar” is of immense value and it will fill the void of knowledge in the concerned area to understand the cognitive abilities of the different social classes living in Mithila region. The main objectives of the present study are as follows:

- To find out the levels of cognitive abilities of forward social group with reference to intelligence
- To find out the levels of cognitive abilities of backward social group with reference to intelligence.
- To find out whether there is a significant difference between the group of forward and backward social classes of Mithila region of North Bihar.

Hypotheses

On the basis of the broad objectives and national importance of the present study the following hypotheses were formulated:

- Forward and backward social classes of Mithila region will not differ on cognitive abilities with reference to general intelligence capacity.
- Forward social class will differ in the extent of cognitive levels with reference to general intelligence capacity.

RESEARCH METHODOLOGY

Sample

Total sample of the present Study consisted of one hundred twenty (N=120) which comprises forward social class (n=60) and backward social class (n=60) were randomly selected from different localities of Mithila region of North Bihar. The districts covered for collecting the data were Darbhanga, Madhubani and Samastipur. Only Maithil Brahmins were included as forward social class in the present study and on the other hand Scheduled Caste, Extremely Backward Classes (EBC) and other backward classes (OBC) of Hindu community were selected as backward social classes. All respondents were randomly selected from different constituent colleges of L. N. Mithila University, Darbhanga. Respondent's age were ranged between 16 years to 19 years.

Tools Used: The following measures were used in the present piece of research work.

General Intelligence Test

For measuring cognitive ability with reference to general intelligence of the undergraduate students, a test developed by Mohsin [20] was used. This test measures I. B. (Index of Brightness of the sample). It was standardized on school students and became more popular in not only in Bihar but through out the nations of the world. The test has six sub-tests arranged progressively in order of difficulty. The number of questions, sub-tests wise, with time limit and maximum and minimum score is presented in the following Table-1.

Table-1: Showing Mean, SD and t of Cognitive Levels with reference to General Intelligence

Sub-Test No.	No. of Questions	Time Limit	Maximum Score	Minimum Score
01	20	5 minutes	20	0
02	30	5 minutes	30	0
03	40	8 minutes	40	0
04	22	5 minutes	44	0
05	26	7 minutes	26	0
06	18	10 minutes	18	0

Biographical Information Blank (BIB)

Biographical Information Blank (BIB) was also prepared by the present investigators and used for analyzing the obtained results. Information included in it was like age, family income, type of family, caste, religion, area of locality and qualifications, etc.

Procedure

These two materials were in printed form and were administered on each and every student. Before administering the test among the students, instructions were given, although, instructions were printed on the

top of the first page on the test booklets. The main points of instructions were the following:

- The test items do not have any relation to the knowledge gained through schooling and as such academic knowledge will not affect your response.
- The answers to the questions do not require any previous preparations as needed in formal examinations.
- You have just to read the instructions printed on the booklet silently the investigator speak the same verbally.

- Every test has a time limit and you have to finish it within time.
- Do not turn the page unless asked for.
- The test has progressive difficulty value but it is well within your capacity.
- You have to take the test easy and you do not get nervous if you fail to answer any question of the sub – test of it if you fail to finish the entire sub – tests questions in time. The responses were scored according to the procedure and the individual scores were obtained. Having obtained the data, both the data of forward and backward social classes

were tabulated for giving statistical treatment for obtaining the results and presented in tables. Finally, the results were discussed and the formulated hypotheses were tested.

RESULTS AND DISCUSSION

To test hypothesis No. 1 i.e. Forward and backward social classes of Mithila region will not differ on cognitive abilities with reference to general intelligence capacity were separately subjected to the calculations of Mean, SD and t – test and the results obtained presented in Table-2.

Table-2: Showing Comparative Levels of General Intelligence Capacity among Forward and Backward Social Classes in Mithila Region of North Bihar, India

Sample Group	N	Mean Differences in Cognitive Abilities									
		STM		BDS		I.B/I.Q		SRT		CRT	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Forward (Maithil Brahmins)	35	4.21	0.84	4.34	0.79	116.34	18.89	302.5	25.25	419.56	42.32
Backward (SC/EBC/OBC)	35	3.68	0.59	4.17	0.73	97.32	16.63	318.2	22.31	657.47	36.67
t		4.42		1.31		6.24		3.84		35.03	
Level of Significance		0.01		0.05		0.01		0.01		0.01	

Note: STM indicates Short Term Memory; BDS indicates for Backward Digit Span; IQ indicates Intelligence Quotient; SRT indicates Simple Reaction Time; CRT indicates Choice Reaction Time.

From the Table-2 it could be understood that forward Brahmins sample group has obtained better mean scores i.e. X = 4.21 with an SD 0.84 in STM (short term memory) as compared to backward social class counterparts i.e. X=3.68 with an SD 0.59 and found significant statistically as t-value is 4.42 which highly significant at .01 level of confidence. It could also be observed from the Table-2 that in BDS (Backward Digit Span) too the forward group has greater mean score (X=4.34) as compared to backward group (X=4.17) but the mean difference is not found significant statistically. In I.B/I.Q test the Brahmins forward social group has obtained greater mean scores X=116.34 with an SD 18.89 as compared to backward

social class group X=97.32 with an SD 16.63 which has been found highly significant at .01 level of confidence as t- value is 6.24 (Table-2). Similarly, in SRT (Simple Reaction Time) and CRT (Choice Reaction Time) both the group of social class have shown greater mean difference comparatively, hence, highly significance of difference has been found but it is very interesting to be mentioned here that backward class of social group took more times than forward social class group which can also be observed from the Table-2. Hence, the proposed hypothesis i.e. forward and backward social classes of Mithila region will not differ on cognitive abilities with reference to general intelligence capacity stands accepted.

Table-3:

Levels	GROUP			
	Forward Social Class (Maithil Brahmins)		Backward Social Class (SC/EBC/OBC)	
	n=35	Percentage	n=35	Percentage
High	19	54.29%	14	40%
Moderate	10	28.57%	12	34.29%
Low	06	17.14%	09	25.71%

Mean value = 116.34

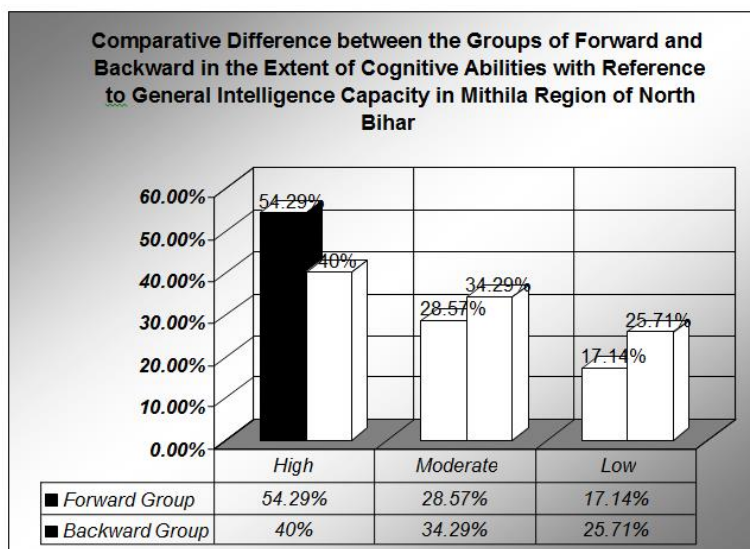
Mean value = 97.32

Table-2 highlights the percentages of Forward and Backward Social classes pertaining to students' cognitive abilities with reference to general intelligence living in Mithila Region of North Bihar, India and all are engaged in studying in different constituent colleges of L. N. Mithila University, Darbhanga. It is evident

from the table that 54.29 percent of forward group have higher degree of perceived general intelligence capacity in comparison to backward social class group who reported only 40 percent. While 28.57 percent of Maithil Brahmins which is forward social class group of Mithila Region have shown moderate level of perceived

reactions on general intelligence test, 34.29 percent of backward social class group have shown moderate level of general intelligence capacity which is comparatively higher when compared to forward social class group. Moreover, 25.71 percent of backward social class group indicated low level of perceived general intelligence capacity in comparison to forward Brahmins social class group i.e. 17.14 percent which is low comparatively. Table-1 also indicates that forward social class group in comparison to backward social class group living and studying in Mithila Region have

higher degree of intelligence capacity as the Mean value of forward social class of students group ($x=116.34$) is more higher than that of the backward social class group of students i.e. $x=97.32$. Hence, the proposed hypothesis i.e. forward social class group of students is likely to be more prone towards their perceived degree of intelligence capacity than backward social class group of students, stands accepted. The above mentioned results can also be observed by illustrating 3 – D clustered column chart with data table as given below:



The results obtained reveals the clear cut picture of the present changing scenario of social life based on education especially in Mithila region of North Bihar – it is so called the hub of education still needs some special assistance from the union government as well as state government to uplift the backward people especially in Mithila region from where the present sample has been drawn to see the cognitive abilities with special reference to General Intelligence Capacity among forward and backward social group of Mithila region. It is undoubtedly fact that forward group of social class especially Brahmins are educationally, socially, economically, culturally are far better than their counterparts of backward social class group especially in Mithila region, hence, they have been found to have more General Intelligence capacity and their parents other family members are employed in different vocations. Thus, on other hand, present investigator feels that attributing the stigma of inferior intellect in backward class group people does not seem to be generally justified. What is needed is a stimulating should be a rich environment to them to come to the main stream of mental and social life of the country. Thus the result supports the stand of environmentalists who speaks of social reality of social system even today after 72nd years of our independence as we have just celebrated its 73rd Independence Day. Hence, the present study seem to be logical that government must look in to the matter concerned for

academic practical relevance, better educational facilities, job reservations, better excess to media and development of communication network which are very much important as resources especially to the backward caste of society to change their life style.

In a nut shell, it is to be pointed out that the main objective of the study was to find out if the different social classes of society differ in terms of cognitive abilities even today when social changes have been much affected due to privileges viz., economic, occupational and social offered to the disadvantaged group of society by the government.

CONCLUSIONS

On the basis of the results obtained and its interpretations the following conclusions are drawn:

- Significance of difference have been found in terms of cognitive abilities with reference to General Intelligence Capacity between the group of forward social class group and backward social class group especially in Mithila region of North Bihar.
- Forward social class group of students have been found more prone towards perceived general intelligence capacity than backward social class group of students in the Mithila region of North Bihar.

- Finally, observations have revealed the fact that our union and state government have launched several programmes for the upliftment of backward social groups but still backward class society is unable to understand the benefit of it. Hence, this is the need of the hour to aware them much more by providing special benefits to the disadvantaged group of the society especially in Mithila region of North Bihar to remove the constraints are likely to be interfered in them.

REFERENCES

1. Tyler LE. *The Psychology of Human Difference* (3rd ed.). New York: Appleton – Century – Crofts, 1965. A Survey of the Major Dimensions of the Differences among Individuals. 1965.
2. Sinha RR. *Tribal and Non-Tribal Intelligence*. Delhi: Classical Publications. 1980.
3. Das JP. Cultural Deprivation and Cognitive Growth. In M. C. Hollywood Social Cultural Aspect of Retardation. New York: Appleton. 1970.
4. Rath R, Dash AS, Dash UN. Cognitive abilities and school achievement of the socially disadvantaged children in primary schools. *Allied*; 1979.
5. Agarwal GS. Quantum electrodynamics in the presence of dielectrics and conductors. I. Electromagnetic-field response functions and black-body fluctuations in finite geometries. *Physical Review A*. 1975 Jan 1;11(1):230.
6. Thakur MS. A Comparative Study of Locus of Control, General intelligence and Level of Vocational Aspiration of Scheduled Caste and Non – Scheduled Caste High School Student's. Unpublished Doctoral Thesis, Department of Education, Kruksheeta University, India. 1977.
7. Panda KC, Anderson UW. Acquisitions Reversal in forum Sub -cultural Groups Generated by Caste and Class, *Canadian Journal of Behavioral Science*, 1970; 2, 267-273.
8. Rangari R, Polson MN. Relative intelligence of Scheduled Caste and Non-Scheduled Caste College Students. *Bombay: Psychologist*, 1982; 3(2), 112-119.
9. Majeed, A. S. and Ghosh, E. S. K. (1981). Effect of Ethnicity and Social Class on Cognitive Differentiation. *Journal of Psychological Researches*, 25(2), 84-88.
10. Jensen AR. *Educability and Group Difference*. London, Methuen (New York: Harpers Row). 1973.
11. Jensen AR. Interaction for Level I and Level II abilities with race and Socio-Economic Status. *Journal of Educational Psychology*, 1974; 66, 99-111.
12. Jensen AR. The Current Status of I. Q. Controversy. *American Psychologists*, 1978; 13, 7-28.
13. Jensen AR. The nature of black and white difference on Various Psychometric Tests. *The Behavioral Science*, 1985; 8, 193-263.
14. Jensen AR, Reynolds CR. Race, Social Class and Ability Difference on the WISC –R. *Personality and Individual Difference*, 1982; 3, 434-438.
15. Anderson VE, Nicholds PL. Intellectual Performance Race and Socio – Economic Status. *Social Biology*, 1973; 20(4), 367-374.
16. Bluau ZS. *Black Children/White Children: Competence Socialization and Social Structure*. New York Free Press. 1981.
17. Eysenck HJ. *Race Intelligence and Education*. London: Temple Smith. 1971.
18. Singh AK. Social Disadvantage, Intelligence and Academic Achievement. A paper presented at the 14th Annual Conference of the IAAP, IIT, Kharagpur. 1976.
19. Gnanadevan R. Social Intelligence of Higher Secondary Students In Relation To Their Socio-Economic Status. *Journal of Community Guidance & Research*, 2007; 24(3), 340-346.
20. Mohsin SM. *The Bihar Test of General Intelligence, Manual of Instructions*. Patna: Educational and Vocational Guidance Bureau. Catalogued by Department of Educational Psychology and Foundation of Educational Council of Educational Research Training (2019). New Delhi: NCERT. 1968.