

# A STUDY FOR PSYCHOLOGICAL DEVELOPMENTS ON COGNITIVE ABILITIES IN SECONDARY SCHOOL STUDENTS

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## ABSTRACT

The development of intelligence in men occurs over a prolonged period of time. Ability growth and observable changes in myelinization of the central nervous system continue from the foetal periods to the ninth decade. In accordance with Yakovlow, these maturational changes are continuously modified, modulated and enriched by experience, resulting in intelligent human beings who respond with increased complexity to what he feels, hears, sees and thinks. The courses of mental growth over the life span continue one of the most dramatic exciting aspects of human development.

Thus progress during present this century in mental measurement, conceptualization, theory building and understanding the changes in intellectual functioning is impressive. We shall attempt an overview of these changes.

Individual differences in cognitive ability have been observed since the beginning of recorded history. But it was not until the present century that systematic methods were observed which made it possible to assess an individual's progress along a continuum of mental growth from the first simple responses to the highly organized thought processes of the matured adult. Many other educationists and clinical psychologists e.g. Anagnasi (1961), Brus (1965), Freeman (1962) assess to the individual tests of intelligence, there are many other tests devised for specific purposes in research or in the assessment of the child.

Hebb (1949) emphasizes the importance of sensory and perceptual experiences for problem solving. Piaget (1952) stresses the importance of such experiences for the early stages of intellectual development. Looking at stimulation from this perspective, it can be argued that retardation in sensory motor skills is a result of chaotic overstimulation requiring incorporation, accommodation, adjustment and reconciliation.

According to a very promising approach to the nature of intellect approach, intelligence is the process of cognitive development. It focuses upon the cognitive ability, used to receive, code and store information. Cognitive abilities are concerned with the interaction between individuals and environmental events and with the understanding of how such interactions lead to attractions in cognitive structure. Frost (1968) redefined the cognitive ability development as a structure-process system.

Cognitive ability or structures involved in the manifestation of intelligent behaviour are held to be highly correlated with the neurophysiology of human brain. According to the author, evidence for a cognitive hierarchy or structure is recurring common thread among the works of Piaget, White, Brunner and Hunt. The acquisition of knowledge is an cumulative process reciprocated by organism-environment interactions. Frost (1968a) proposes a theory that intelligence is the ability to adopt to an increasingly complex and sophisticated internal and external environmental situations.

Piaget has partitioned the growth of cognitive ability into a number of chronologically successive stages, each is qualitatively different from its preceding and succeeding stages. The growth sequence includes (i) period of sensory-motor ability (from birth to 2 years); (ii) period of pre-operational ability (from 2 to 7 years); (iii) period of concrete operations (from 7 to 11 years); (iv) period of formal operations (from 11 to 15 years). Piaget's theory thus provides a framework for understanding the child's nature of interaction with environment and cognitive growth norms as determined by maturation and experiecnes.

### INTRODUCTION

The present study was undertaken to examine the impact or effect of some psychological variables such as urban-rural habitation, caste, economic condition, parent literacy, self-concept, achievement motivation on the development of cognitive Ability of secondary school students.

The survey of literature on the topic "A study for psychological Developments of Cognitive abilities in Secondary School Students" by and large reflected a larger variation among studies or investigation carried out. Particularly in our country "India", Social conditions are determined to great extent by the caste group affiliation, which is usually not seen in foreign countries. For instance, persons of lower castes in India, though higher on economic status and power, are socially, culturally disadvantaged in many ways in their perception and behaviour. These advantages become more pathetic, when it is combined with illiteracy & poverty. In the present investigation, however the purpose was different at it emphasized the comparison of social variables on the dependent variable the cognitive ability development, the main focus of the study. The psychological variables which were put on verification, though themselves, mostly are outcome of social variables, were treated as concomitant to cognitive ability development. In brief, the purpose was to examine "Socio-psychological concomitants of cognitive abilities of secondary school students."

**HYPOTHESIS :- In order to verify the objectives following hypotheses were formulated :-**

1. The secondary school students belonging to rural and urban areas would differ significantly to their general intelligence.
2. The secondary school students belonging rural and urabn areas would differ significantly to their cognitive verbal ability.
3. The secondary school students belonging to high and low economic groups would differ significantly to their general intelligence.

4. The secondary school students belonging to high and low economic groups would differ significantly to their cognitive verbal ability.
5. The secondary school students belonging to scheduled caste, backward caste and forward caste groups would differ significantly to their general intelligence.
6. The secondary school students belonging to scheduled caste, backward caste and forward caste groups would differ significantly to their cognitive verbal ability.
7. The secondary school students of literature and illiterate parents would differ significantly to their general intelligence.
8. The secondary school students of literate and illiterate parents would differ significantly to their cognitive verbal ability.
9. The secondary school students of the higher, the average and the lower self-concept would differ significantly to their general intelligence.
10. The secondary school students of the higher, the average and the low self-concept would differ significantly to their cognitive verbal ability.
11. The secondary school students of the higher, the average and the lower need for achievement would differ significantly to their general intelligence.
12. The secondary school students of the higher, the average and the lower need for achievement would differ significantly to their cognitive verbal ability.

### **SAMPLE :-**

The study was conducted on 300 secondary school students in the age-range 10 to 14 years, belonging to urban and rural areas of Chapra and Siwan districts of Bihar under jurisdiction of Jai rakash University, Chapra . Further, they were classified into different caste groups, literacy status, economic condition of their parents etc. The sample selected from government and affilliated schools. The following Table A – 1 shows distribution of sample.

**TABLE A – 1**

Showing distribution of sample of secondary school students as per their habitation, literacy and economic condition of their parents

Groups	N	Economic Conditions	Literacy Level	Caste				
				Lit	ILLit.	FC	BC	SC
Rural	110	H 45	L 65	20	90	40	40	30
Urban	190	75	115	135	55	80	60	50

## MEASURING INSTRUMENTS

All the secondary school students covered into the sample were administered different psychological tests, as well as, one specially developed questionnaires and inventories which are below :-

1. Mohsin General Intelligence Test
2. Cognitive Verbal Ability Test
3. Personal Data Sheet

In the present investigation, the Mohsin's General Intelligence Test has been used. Mohsin's General intelligence Test compares of six sub-sets. There are 156 items altogether. The items have been disturbed subjectwise 'Cognitive Verbal Ability Test (CVAT)' has been used in the present study which developed by the investigator. The test is based on the colour naming and reading test developed and used by Ruesch (1943). Personal Data Sheet has been also used which is self developed, schedule to elicit responses from the secondary school students to extract information about age, caste, economic condition and literacy status as also about self-concept and achievement motivation of the respondents.

### CONCLUSION :-

Responses were tabulated and analysed statistically. The results obtained and summarised as following paragraphs.

1. Rural and urban students differed significantly on general intelligence as evidence by the obtained 't' ratio 7.55 for the means (urban 112.50, rural 108.35) all being significant at 0.01 level.
2. Rural-urban students differed also on cognitive verbal ability development. The urban mean score 50.30 and rural mean score 44.60 differed significantly at 0.01 level.
3. The high and low economic groups in both the rural-urban areas differed significantly on general intelligence as evidenced by the obtained 't' ratio 6.58 and 3.57 (urban-H-L, rural-H-L) for the mean score for urban 114.46, 109.15 and rural 110.52, 106.20 are being significant at 0.01 level. So the high and low economic groups respectively differed significant and our hypothesis verified.
4. On Cognitive verbal Ability also the same trend was founded in respect or urban and rural students of high and low economic groups. These groups differed at 0.01 level.
5. Caste group affiliation was found to have significant effect on general intelligence in both urban and rural secondary school students. The mean score 114.60 of Forward caste of urban areas was significantly higher than their counter parts Backward and Scheduled Castes. The same trend area. The obtained 't' ratio-3.15, 5.94 and 3.88, all being significant on 0.01 level.
6. It is to say as conclusion that Cognitive Verbal Ability also Forward, Backward and Scheduled Caste secondary school students in rural and urban areas differed significantly at 0.01 level.
7. As regards literacy status, the secondary school students of literate parents evinced superiority on general intelligence ability over secondary school parents. Mean score 115.45 of students on GIT of literate parents was higher than the score 107.80 of illiterate parents. The difference between the two was significant at 0.01 level.

8. On Cognitive Verbal Ability also effect the secondary school students & illiterate parents differed significantly at 0.01 level. The mean score 47.36 of students of illiterate

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parents mean score 56.49. This showed higher perceptual and verbal cognitive ability on colour discrimination.

9. The comparison between self-concept & general intelligence ability showed a positive relation. The students having higher self-concept scored relatively higher on general intelligence test than the student having average and low self-concept. The mean brightness score 112.15 of high self-concept group, 108.40 of average self-concept 105.44 low self-concept grouped differed significantly with each other, thus the hypothesis verifies.
10. Self-concept and cognitive verbal ability were found positively related each other. Here also the high self-concept group showed better perception and verbal talent mean score 48.45 than those of average and low self-concept group, whose mean perception and cognitive verbal ability cognitive verbal ability score were 52.65 & 56.10 respectively. The 't' ratio found 4.42 , 8.50 & 3.83 ( in between H-A, H-L & A-L) which is significant on 0.01 level. Thus the difference was found significant at 0.01 level.
11. The important psychological variable which was subjected to verification was achievement motivation. The secondary school students of high n-ach score 114.60 on general intelligence test, which was higher significantly than those of average and low n-ach group mean 109.55 and 104.68 respectively. The difference between the two has significant on 't' ratio at 0.01 level.
12. N-ach when compared with cognitive verbal ability, also indicated a significant positive relation. Those students having high n-ach showed better timing on Cognitive Verbal Ability as compared to those with average and low n-ach, whose timing was inferior M=52.91 and 56.80 respectively. The 't' ratio obtained and found difference between two groups significant at 0.01 level.

To sum up it can be conclude that socio-psychological variables e.g. so self-concept, achievement motivation, rural-urban habitation, literacy-illiteracy status impact on C.A.V. and I.A. Rural-urban habitation, economic condition, caste group affiliation and literacy-illiteracy status are some of the social variables which have definite positive effect on the development of Cognitive Verbal Ability in the secondary school students.

Further, psychological variables such as self-concept, achievement motivation were found positively realted cognitive verbal abilities and general intellectual abilities and general intellectual abilities in the secondary school students.

### **IMPLICATION :-**

The present investigation has certain specific implication for the secondary school teachers, counsellors and present. They can draw and utilities the result of this study to improve the Cognitive Verbal Ability to their students and children, which are basic ingredients in career development and better personality growth of the individual. They can adopt measures to assist and provide help to the students to become more confident and achievement-oriented, which have been found positively linked with development of cognitive abilities.

The findings suggest that there are some social conditions which provide sanitization and inferior environmental stimulation not congenial to the growth of abilities, thus the suggesting the teachers, guardians and parents to provide adequate stimulating condition in both home and schools. Thus our study has been able to throw light on a very important areas of child/students development i.e. cognitive abilities and general intellectual abilities.

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