Reasoning Abilities between Boys and Girls in Context of Inhabitation

Rajiv Kumar

ABSTRACT

The present empirical investigation was carried out with the objectives to compare boy and girl respondents of urban and rural unhabitation on the measure reasoning abilities. It was hypothesized that (i) Boys and girl's would differ significantly in terms of reasoning abilities and (ii) urban and rural respondents would differ significantly in reasoning abilities. For the purpose the respondents were administered Verbal, Numerical, Arithmetic Reasoning Test by R.N. Singh and data were obtained, which were treated using t-test. The obtained t-values were found significant. Thus, hypotheses were retained. It was found that (i) Sex-difference has significant influence on general intelligence as well as specific abilities i.e. on reasoning abilities. Boys excelled over girl in terms of general intelligence, numerical as well as abstract reasoning abilities whereas girls excelled over boys in terms of verbal reasoning abilities. Thus, it is concluded that general intelligence and reasoning abilities are the function of sex-difference. (ii) Urban / Rural inhabitation significantly influence general intelligence and reasoning abilities. The urban respondents excelled over rural respondents in terms of general intelligence as well as verbal reasoning and abstract reasoning abilities. However rural respondents excelled over urban respondents in terms of numerical reasoning ability. Thus, it is concluded that general intelligence as well as reasoning abilities both are function of urban-rural inhabitation.

Introduction:

Cognition is the process of gaining knowledge and u nderstanding of any given object. The ability to organize the ideas of objects meaningfully into the perception or knowledge, develops gradually in children with the growing age. Cognitive abilities are the brain-based skills and mental processes that are needed to carry out any task from the simplest to the most complex. Every task can be broken down into the different cognitive skills that are needed to complete that task successfully. If they are not used regularly, cognitive abilities will diminish over time. Fortunately, these skills can also be improved at any age with regular practice (Latham, 2006).

However, socio-cultual factors play a very important role in the development of cognitive abilities. For example, The children growing in the dynamic and complex urban society and those in stranded and deprived rural society may well be expected to differ in development of cognitive abilities. The cognitive ability generally refers to the ability to acquire and use knowledge. Efforts to understand cognitive and cognitive abilities have generally been concerned with

(A) Structure:- The element and its components of the intellect and their inter-relationship

(B) Process:- The particular activities or operations involved in taking interpreting, organizing and retrieving knowledge of information

(C) Function:- The purpose or goals of the person in dealing with available potential knowledge. Each of these components is important to an adequate understanding of cognition.

Society and culture are the most important agents influencing and shaping the development of

Research Scholar, Dept. of Psychology, P.U. Patna

personality as well as cognitive ability of human beings. The culture has been defined as complex system consisting of ideas, conceptions, qualities and related explicit and implicit behavioural patterns transmitted and acquired from one generation to another through traditions and customs.

The study under reference comprised of two components which need elaboration. The first components is general intelligence. There has been a great deal of controversy over the exact definition on nature of intelligence and it has not been decided to the full satisfaction of all. When we trace the origin to the concept of intelligence, it goes back to the term intelligence. Burt (1955) says that the term intelligence has been used by Cicero long ago. Spearman (1987) has reported that a unitary view of intelligence has been popular as far back as in fifteenth century. Spencer (1986) has emphasized its role in biology. According to him, intelligence has the 'power of combinding many separate impression.' He has also tied the concept to the doctrine of evolution.

Later on, psychologists have attempted at logical definition of the term intelligence. They have the problem to measure it. Many symposia have been held to clearfy the exact nature of intelligence but much it has been discussed much controversial its nature has become. As Spearman (1987) has put it, intelligence has become a more vocal sound a word so many meaning that finally it has none, it would be wise to discuss some important definition of intelligence.

Burt (1945) has defined intelligence as the 'innate general intellectual ability. 'To Anastsi (1966), it is a very useful definition expressed in a few words but it is criticised on the following groups : (a) Human personality is a single intergrated whole and cannot be subdivided into intellectual and temperamental units. (b) Intelligence can certainly be retarded by and lack of education and can become distorted by lack of parental love, care and guidance and (c) A person utilized his experience and knowledge in handling situations and his effectiveness depends upon how skillfully he utilized them. However, the concept of innate intelligence as described by Burt (1955) and others has been challenged by many psychologists in recent years. They have almost established that intelligence is enriched with the environment in which the person lives. The intelligent child of the intelligent father is indicative of better living condition, more stimulation and incentive provided in such homes not of innate factors.

Wechsler who gave a very comprehensive definition and stated that intelligence is manifested in the behaviour as a whole which is purposedful in the capacity to adjust with one's environment. Thorndike classified intelligene into concrete (ability to understand and deal with things) and abstract (ability to deal with verbal and mathematical symbols) intelligence. Several scholars have categorized intelligence as the product of innate capacity ((nature and nurture (environment). Vernon (1970) and Hebb (1949) differ from one another in terms of intelligence C (scores on a particular test). Regarding nature of intelligence spearman believed that general intelligence (G-factor) and specific abilities (S-factor) are aggregate of intelligence. So, intelligence is global capacity to act purposefully, to think rationally and to deal effectively with the environment. The reasoning capabilities are the outcome of specific abilities.So,verbal reasoning numerical reasoning and abstract reasoning.

Several investigations have been conducted in abroad and even in India (Dash and Rath, 1985; Das and Dash, 1987, Dutta et al, 1973; Gupta, 1978, Mishra, 1996; Prasad, 1984; Sharma, 1972). Urban/Rural background has also been studied in relation to development of cognitive ability of school children. Stevenson, Levitsky et al. (1972) studied 1151 children from indigenous Quechua speaking families residing in squatter settlements of the city and in two remote rural environments in Peru. They were given a battery of 16 tests of academic achievement and cognitive abilities. The former tests assessed reading and mathematics achievement and the latter tapped a broad range of cognitive function. Children were enrolled in first, second or third grade or did not attend school. 'Younger' children were from 6 to 8

years old, and 'older' children were from 9 to 12 years old. Large differences in cognitive functioning were associated with attendance at school, grade in school, age, and urban-rural residence.

Boys and girls are reared in the similar family environment. In this sense they do not belong to two cultural groups but the rearing and socialization of these two groups are distinct which give them a sense of being a boy and a girl. Here the role of culture becomes prominent and in this sense they may be belong to two different cultures. These differences between sexes results in the differential cognitive and intellectual abilities. It has been observed that culture is mixed with socialization of the child and it is manifested in overt and covert behaviour pattern but its should not be presumed that culture and cognitive growth run in a parallel form. Each culture has its own pecularities and characteristics differences in cognitive ability and personality. Characteristics are observed due to differences in various cultures.

Gender has also been studied in relation to development of cognitive ability of school children. Klausmeir, (1965); Termon and Tylor, (1954); Vermon (1969); found a relationship between sex and intelligence and that boys and girls were found to differ in their intelligence. Jackson and Ruston (2006) found that males averaged 3.63 IQ points higher than did their female counterparts on the 1991 Scholastic Assessment Test (SAT). They concluded that while the magnitude of the male and female difference in g is not large. The question is whether the children would differ on their cognitive ability with the difference in their sex ? The foregoning references laid down the conflicting findings.

Objectives : The study intended to make a comparison between:

(i) boys and girls in terms of reasoning abilities.
(ii) Urban and rural students in terms of reasoning abilities.

Hypotheses:

The following hypotheses were formulated for empirical verification.

(i) Boys and girl's would differ in terms of reasoning abilities.
(ii) Urban and rural respondents would differ on reasoning abilities.

Method of Study:

Sample Used

The sample comparised of 400 students selected from among school student population of Muzaffarpur using incidental-cum-purposive sampling technique. Out of 400 students 220 were males and 180 were females. Further, 220 were from rural population and 180 where from urban population. They were matched other than the research condition.

Tools Used:

(1) A personal bio-data sheet was used to seek personal information about the respondents.
(2) Verbal, Numerical, Arithmetic Reasoning Test by Prof. R.N. Singh was used to measure verbal, numerical and Arithmetic reasoning abilities.

Procedure of Data Collection:

The respondents under reference were administered the Scales for data collection as per convenience of the respondents and as per plan. They were administered the scales one by one in a small group and data were obtained. The data were obtained in different phases consisting of two sessions. Each phase was comprised of two sessions. The obtained data were treated using t-test.

Table-1

Mean, SD, t-values showing comparison between boys and girls on GIA, YRA, NRA, ARA.

Variables	Sex-difference				t-value	df	p
	Boys (N = 220)		Girls (N = 180)				
	Mean	SD	Means	SD			
GIA	105.18	20.36	103.30	18.26	0.97	398	NS
VRA	21.24	7.24	23.04	6.42	3.28	398	<.01
NRA	23.30	8.26	21.20	6.26	3.16	398	<.01
ARA	26.02	7.64	24.22	6.39	3.18	398	<.01

It is clear from the results table-01 that boys and girls do not differ significantly in terms of general intelligence (t = 0.97; df = 398; p<.01). However, they differ significantly in terms reasoning abilities. Boys excelled over girls in terms of numerical (t = 316; df = 398; p<.01) and abstract (t = 3.18; df = 398; p<.01) reasoning abilities. However, girls excelled over boys in terms of verbal (t = 3.28; df = 398; p<.01) resoning ability. Thus, hypothesis no. (01) is partly retained. Findings of the present study is in agreement with the findings of Klusmeir (1965), Vernon (1969) Jackson and Rushton (2006).

Table-02

Mean, SD, t-values showing comparison between urban-rural respondents in terms of GIA, VRA, NRA and ARA.

Variables	Inhabitation				t-value	df	p
	Urban (N = 180)		Rural (N = 220)				
	Mean	SD	Means	SD			
GIA	107.18	20.98	101.30	19.02	2.91	398	<.01
VRA	24.06	8.02	20.22	7.98	4.86	398	<.01
NRA	21.08	9.67	23.24	8.62	2.34	398	<.01
ARA	27.19	7.62	23.05	6.26	5.91	398	<.01

The results revealed by the results table-02 clearly revealed. The significant difference between urban and rural respondents on GIA (t = 2.91; df = 398; p<.01), VRA (t = 4.86; df = 398; p<.01), NRA (t = 2.34; df = 398; p<.01) and ARA (t = 5.91; df = 398; p<.01). The urban respondents excelled over rural respondents in terms of GIA, VRA and ARA. However, rural respondents excelled over urban respondents on NRA specific abilities. Thus, hypothesis no. (02) is retained. The findings of the present study get support from the findings of provides researchers namely (Das and Das, 1984; Cole and Brunes, 1970.

Conclusions:

(1) Sex-difference has significant influence on general intelligence as well as specific abilities i.e. on reasoning abilities. Boys excelled over girl in terms of general intelligence, numerical as well as abstract reasoning abilities whereas girls excelled over boys in terms of verbal reasoning abilities. Thus, it is concluded that general intelligence and reasoning abilities are the function of sex-difference.

(2) Urban / Rural inhabitation significantly influence general intelligence and reasoning abilities. The urban respondents excelled over rural respondents in terms of general intelligence as well as verbal reasoning and abstract reasoning abilities. However rural respondents excelled over urban respondents in terms of numerical reasoning ability. Thus, it is concluded that general intelligence as well as reasoning abilities both are function of urban-rural inhabitation.

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