

# Characterisation of Cognitive Style involving Cultural Study from Ethnic Groups

SUPARNA ANIRUDDHA MURKUTE\*

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## Abstract

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*Research in education does not only represent a study of scholastic achievements of students but it is also a study of emotional and cultural endowments of students highlighting on their sense of responsibilities with their abilities to adjust and co-operate in a culturally diverse group or as supported by society. In India, various cultural ideologies live together peacefully. The present study reveals that cultural groups still retain their cultural ideologies. The study also encompassed on the difference where the girls scored high in systematic cognitive style while boys were seen observing the step-by-step approach for solving problems to arrive at conclusions. The present study is carried out by implementing the 'Cognitive Style Inventory' by Praveen Kumar Jha.*

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## INTRODUCTION

Indian culture is often represented as an amalgamation of cultures. The Indian culture has been developing from more than thousands of years. On a global level, this may be the only country where such cultural groups have evolved by obeying their own cultural characterisation as well as assimilation of new customs in due course of time.

India is a large country of various cultural groups. People from this land live with a sense of unity in diversity. Being Indians they follow Indian culture as their core parent's culture. However, these seems to be cultural diversification in terms of provinces, language attitudes and thinking style depicting the various cultures being practiced in their respective communities.

\**Officiating Principal*, Dr. Vithalrao Khobragade B.Ed. College, Champa, Nagpur District, India

Culture refers to ideas, conceptual codes, behavioural pattern, and furthermore regularity in interaction with people as members of society (Rai, 1995). Culture is deciphered as a set of thoughts with reference to which people carry out all interactions including the standards of behaviours as well as emotions. Thus, culture could be defined as the sum total of emotional, moral, social, spiritual and intellectual refinements leading to overall development of the individual and society (Murkute, 2017).

Various ethnic groups are surviving collectively in Nagpur. They track their own culture, namely South Indians, Gujarati, Punjabi, Sindhi and Marathi, etc. These groups migrated from their respective places of origin to Nagpur and follow their ethnic culture. All these ethnic groups cited earlier follow their own way of refinement, through out their lives.

Cognitive style has been defined as a self-evident mode of function, which the individual illustrates in one's perceptual and intellectual activities (Witkin et al, 1962). It is then conceptualised as a person's typical mode of perceiving, remembering and problem solving.

The cognitive development theory by Piaget (1972) witnesses human behaviour as adaptation and assimilation; (Hall and Lindzey, 1991). In assimilation, the learner incorporates new experiences without modifying the cognitive structure. In accommodation, the learner

transforms the existing cognitive structure to adopt new demands of environment. Therefore, cognitive style is information processing habit, which represents a person's typical mode of perceiving, remembering, thinking and problem solving (Messick, 1976).

Kothari commission (1964) has quoted that the destiny of a nation is decided in the classroom. The classroom learning requires constant motivation from the teacher so that maximum use of their talent may be made for the welfare of students and also for the progress of society. However, in actual it seems that the process of motivation is a highly individualised activity because of the complexity and multiplicity of the underlying behaviour. Thus, a number of variables operate in the process of motivation, that is, along with classroom environment, the socio, economic environment, the socio-economic, conditions, previous experiences, cultural background, the processes involved in bringing up a child affect the process of thinking.

### **GENDER**

The environment that surrounds the male child and female child is immensely important in cultural studies; (Eisler, et al, 2003), because many of the attributes and roles selectively projected by male and female are different.

### **OBJECTIVES OF STUDY**

The present study is intended to work out the characterisation of cognitive styles involving cultural study of ethnic groups from Nagpur city area, Nagpur District. To deal with such characterisation, the basic objectives are found to be inevitable. The two objectives, which are found to be inevitable for the present study are: (i) to investigate cultural differences in systematic cognitive style and intuitive cognitive style, and (ii) to investigate gender differences in both systematic cognitive style and intuitive cognitive style from Nagpur city area, Nagpur District.

### **Hypotheses**

The present study is carried out to understand the characterisation of cognitive styles of students of various cultural ethnic groups. To carry out the characterisation, the two hypotheses have been proposed for the present research work. These hypotheses include (i) the students from five cultural groups— South Indians, Punjabi, Gujarati, Sindhi and Marathi differ significantly on systematic cognitive style, and (ii) the students from five cultural groups—South Indians, Punjabi, Gujarati, Sindhi and Marathi differ significantly on intuitive cognitive style.

### **Research Methodology**

The sole aim of the present investigation is to trace the style of thinking of students of various cultures. Thus, the range of parameter

mooted for this study is: (i) culture, (ii) cognitive style and (iii) gender. The period of formal operations according to Piaget is the stage when a child becomes quite systematic and integrated. Taking into consideration the above discussion, students of Class IX from various cultural groups, such as: (i) South Indian, (ii) Punjabi, (iii) Marathi, (iv) Sindhi and (v) Gujarati were selected for the present study. Primarily, all students were taken into confidence by alleviating their psychological mindset to a comfortable state. The cognitive style inventory was given to students to put tick marks where they found suitable alternatives for the given statements.

Scoring was accomplished wherein total 'S' category and 'I' category were noted down and subsequently computed as per instructions given in the manual.

### **Sample**

The samples catalogued for the present research work are presented in the table below. The students of Class IX from each of the five cultures are selected on the basis of their past year achievements in academics and extracurricular activities. The gender-wise selection, comprising the girls and boys, who scored marks ranging from 75% to 80% were preferred for the present investigation. The total sample is of 400 students, 80 students from each culture.

**Table 1**  
**Sample details of cultural groups from study area**

S. No.	Cultural Groups	South Indians	Gujarati	Punjabi	Sindhi	Marathi
1.	Girls	40	40	40	40	40
2.	Boys	40	40	40	40	40

### TOOLS

The Cognitive Style Inventory (CSI), pioneered by Praveen Kumar Jha (2001) is utilised for the present study to understand the characterisation of cognitive style. Such CSI is especially used to recognise the differences in cognitive style of girls along with boys of five cultural groups. The test consists of 40 statements, out of which twenty statements represent 'S' i.e., systematic cognitive style and twenty statements represent 'I' i.e., intuitive cognitive style. In the inventory, the students have been suggested to select either right or left column where the responses on the left side scored for systematic cognitive style and while that on the right side scored for intuitive cognitive style. The final scoring has been

precisely carried out in accordance to guidelines and instructions. In the present research work, the Systematic Cognitive Style is attributed to a step-by-step approach for solving problem and to arrive at conclusion, where as Intuitive Cognitive Style describes itself as way of unpredictable ordering and organising of analytical steps while solving problem.

### ANALYSIS AND INTERPRETATION

The data, thus acquired by utilising the CSI were afterward analysed by the statistical expression  $2 \times 5$  analysis of variance. Furthermore, the verification of hypotheses was also carried out.

### Hypothesis No.1

The relevant data for this hypothesis are given as below.

**Table 2**  
**The  $2 \times 5$  analysis of variance of systematic cognitive style as a function of gender and culture**

Source of Variance	Sum of Squares	Degree of freedom	Means square variances	F Coefficient
Gender (A)	3282.10	1	3582.1	27.51*
Culture (B)	4784.28	4	1196.07	9.186*

A × B	627.56	4	156.89	1.2050
Within	50776.05	390	130.195	
Total	59770	399		

\* Values are significant at 0.05 and 0.01 level.

The observations in the table indicated that the main effect of A and B i.e., gender and culture produced significant variation. The girls and boys differ significantly as far as systematic cognitive style is concerned.

The females score significantly higher (M=65.86) in comparison to male (M=49.09). The F value 27.51 is significant at 0.01 level. The main effect of culture also produced significant variation, which means students of five cultures differ significant by from each other on systematic cognitive style. The mean scores of culture are given below.

**Table 3**  
**The mean scores of culture for SCS from the present study**

Cultural Groups	Boys	Girls
South Indians	59.75	66.87
Gujarati	59.90	67.65
Punjabi	55.12	61.60
Sindhi	59.82	60.8
Marathi	64.77	72.30

But the A × B did not produce significant variation.

### Hypothesis No. 2

The relevant data for this hypothesis are given as below.

The main effect of A (gender) produced significant variation, wherein the male scored significantly higher (M=59.21) than girls (M=56.17). The F value 6.27 is significant at 0.01 level. The main effect of culture also shows that there are cultural differences in thinking style of students of these cultural groups. Cultures differ from each other on intuitive cognitive style. The mean scores of culture are as follows.

### DISCUSSION AND CONCLUSIONS

The study of cognitive processes is fundamental to researchers interrelated to acquiring, retention, retrieval and utilisation of knowledge. Educationists have been concerned with the application of psychological knowledge of the beginner's comprehension and integrated

**Table 4**  
**Analysis of variance of intuitive cognitive style as a function of gender and culture**

Sources of Variation	Sum of Squares	Degree of Freedom	Mean square Variance	F Coefficient
Gender (A)	699.54	1	699.54	6.27*
Culture (B)	2540.87	4	635.21	5.69*
A × B	564.47	4	141.11	1.26
Within	43470.72	390	111.46	
Total	47275.6	399		

\* Values Significant at 0.05 and 0.01 level.

**Table 5**  
**The mean scores of culture for ICS**  
**from the present study**

<b>Cultural Groups</b>	<b>Boys</b>	<b>Girls</b>
South Indians	64.32	58.80
Gujarati	58.27	53.62
Punjabi	55.72	53.00
Sindhi	59.50	59.05
Marathi	58.22	56.37

The interaction of A × B did not produce significant variation.

development. Padmini (1980) had pioneered on the work of cognitive development. According to him, gender development is not truly significant; moreover, variation in the institutions does not affect the cognitive development status of pupils. Thus, at this stage, children are free from any culturally prescribed limits of thinking. In the present research work, however, the results show that all five cultural groups still retain their cultural ideologies. They think in a manner which differs from culture to culture. The girls scored higher in systematic cognitive style than boys. The mean score shows that girls are systematic, they follow step-by-step

approach for solving problems and to arrive at conclusions. The systematic cognitive style described by Jha (2001) seems to be apt for female behaviour. The intuitive style described by Jha (2001) seems apt for boys. This style describes by as a way of unpredictable ordering organising of analytical step while solving problems. It relies on experienced pattern characteristics existing in boys as they preferably scored high in scores of intuitive cognitive style. The South Indian boys are found to be more intuitive with the highest mean score. Graf. et al, (2007) have rightly said that high working memory capacity subjects are intuitive. The Marathi girls are found to be systematic with highest mean score 72.30. Thus, the way to approach any problematic situation pertains to variations among the cultures. The style of thinking among the sex showed variations. But the overall effect did not show any variation. It may be inferred that despite their ideological and biological endowments, students of five cultures tried to acclimatise to the social environment around them. This is the real essence of national integration in India.

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