

# Cognitive Styles of Secondary School Teachers

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## Abstract

*In this paper, an attempt has been made to study the cognitive styles of secondary school teachers in Kullu District of Himachal Pradesh. Cognitive styles like perception, remembering, problem solving, thinking, memory, reasoning and intelligence etc, influence the behaviour of teacher in teaching process. These are the factors which are responsible to mould the teacher behaviour and learning. For this purpose sample of 200 secondary school teachers from the government schools of Kullu district was taken through simple random sampling technique. To collect the data cognitive style inventory developed and standardized by Dr. Praveen Kumar Jha (2001) was used. To find out the significance of difference between the various groups 't'- test was applied. Results indicated that there is a significant difference between male and female secondary school teachers regarding systematic and intuitive cognitive style. Whereas there is no significant difference was found between male and female secondary school teachers regarding integrated, undifferentiated and split cognitive styles.*

## Key words

*Cognitive Style, Thinking, Judging, Remembering, Secondary School Teachers and Gender.*

## Introduction

All individuals possess unique qualities and characteristics that influence how their learning best occurs in different settings and situations. Individuals who know and understand their own particular cognitive styles are able to understand themselves and their unique preferences towards solving problems or confronting issues. In addition, within the teaching and learning environment, knowledge of teacher and student cognitive style preferences assists educators to better understand their teachers and students. As we all know teaching is a dynamic activity. It unfolds a world of knowledge, information, experience and education. It is a highly skilled job and requires proper training and preparation on the part of teacher. Nevertheless the cognitive styles of teachers influence their teaching styles. Cognitive styles may impact on their behaviour. Cognitive styles are important in development of teachers in their personality. It may help to achieve their performance up to mark.

To understand cognitive style, meaning of cognition must first be understood. Cognition is a collection of mental processes that includes awareness, perception, reasoning, and judgment. Cognitive styles can generally be described as the manner in which information is acquired and processed. Cognitive style is defined by Witkin, Moore, Goodenough, and Cox (1977) as the individual way in which a person perceives, thinks, learns, solves problems, and relates to others. Messick (1984) defined cognitive styles as consistent individual ways of organizing and processing information and experience. Cognitive styles defined as the way people perceive stimuli and how they use this information to guide their behaviour (i.e., thinking, feeling, actions (Allinson & Hayes, 1998). Cognitive style referred to a psychological dimension representing consistencies in an individual's manner of cognitive functioning, particularly with respect to acquiring and processing information (Ausburn & Ausburn, 1978).

## Dimensions of Cognitive Style

Theories of cognitive styles were developed as a result of early studies conducted by Witkin, et al; (1962). These studies resulted in theories that generally assumed a single dimension of cognitive style with two extremes were described in general terms by Keen (1973); Mikenney and Keen (1974) and Botkin

(1974) as Systematic style and Intuitive style. The systematic style is associated with logical, rational behaviour that uses a step-by-step, sequential approach to thinking, learning, problem solving and decision-making. In contrast the intuitive-style is associated with a spontaneous holistic and visual approach. These two styles however did not reflect the entire spectrum of people's behaviour with regard to thinking, learning and especially problem solving and decision making. Therefore, a multi-dimensional model intended to reflect the entire spectrum was postulated (Martin, 1983). This model consisted of two continuum; i.e. 1) High systematic to low systematic and 2) High intuitive to low intuitive. Ongoing observational studies, along with effects to develop measurement devices for assessing cognitive behaviour, have resulted in an expanded version of the original model, which led to the development of five following styles:

- 1) **Systematic style** – An individual who typically operates with a systematic style uses a well defined step-by- step approach when solving a problem; looks for an overall method or pragmatic approach; and then makes an overall plan for solving the problem.
- 2) **Intuitive style** – The individual whose style is intuitive, uses an unpredictable ordering of analytical steps when solving a problem, relies on experience patterns characterized by universalized areas.
- 3) **Integrated style** – A person with an integrated style is able to change styles quickly and easily. Such style changes seem to be unconscious and take place in a matter of seconds. The result of this "rapid fire" ability is that it appears to generate energy and a proactive approach to problem- solving. In fact, integrated people are often referred to as "problem seekers" because they consistently attempt to identify potential problems as well as opportunities in order to find better ways of doing things.
- 4) **Undifferentiated style** – A person with such a style appears not to distinguish or differentiate between the two styles extremes; i.e. systematic and intuitive, and therefore, appears not to display a style. In a problem solving situation, he/she will exhibit receptivity to instructions or guidelines from outside sources. Undifferentiated individuals tend to be withdrawn, passive and reflective and often look to others

for problem- solving strategies.

- 5) **Split style** – An individual with split style shows fairly equal degrees of systematic and intuitive specialization. However, people with a split style do not possess an integrated behavioural response; instead, they exhibit each separate dimension in completely different setting; using only one style at a time based on nature of their tasks. In other words, they consciously respond to problem solving by selecting the most appropriate style.

### Review of Related Literature

Keeping in view the importance of review of related literature the investigators reviewed the studies conducted by the other researcher and presented them as; **Evans and Waring (2011)** found that cognitive style was found to impact on trainees' conceptions of differentiation, trainees demonstrating higher levels of analysis and intuition had a more developed understanding of differentiation than other cognitive styles. **Catagloglu and Ates (2012)** observed that there existed a statistically significant difference between the FI and FD students' degree of applying the impetus theory in favour of FI students. However, the test score gap between FI and FD students remained almost constant regardless of the testing instruments utilized in this study. **Saroja and Amalrai (2012)** indicated that Biological Science prospective teachers differ in their cognitive style and academic achievement and there was significant relationship between cognitive style and academic achievement of prospective teachers of Biological Science with reference to personal variables. **Reddy (2013)** found that there was no significant difference in the cognitive styles of primary school teachers due to variation in gender but significant difference was existed in the cognitive styles of primary school teachers due to variation in age and variation in Locality. **Srinivas and Nagaraju (2014)** indicated that the high school Mathematics teachers possess three types of cognitive styles, namely, split cognitive style, integrated cognitive style and undifferentiated cognitive style and also found that there was a significant difference in cognitive styles of teachers based on variation in their gender and types of management of their schools. **Srinivas and Gangadhar (2015)** observed that the high school Biological Science teachers possess three types of cognitive styles, namely, split cognitive style, undifferentiated cognitive style and integrated cognitive style. **Khandagale (2016)** found that Most of the teacher educators were using moderate left brain predominantly. The numbers of teachers using mid brain were moderate whereas very few were using moderate right brain.

### Rationale of The Study

There are different cognitive learning styles for each person. Each of us has our own styles of learning and thinking. Knowledge of these similarities and differences is crucial in education. The sensitivity of the teachers in dealing with individual learners' differences in cognitive style in his/her classroom may be significant influence in facilitating learning. Following the identification of relative individual differences in cognitive style of students in a classroom, the teacher can provide a multiplicity of strategies and techniques to determine which seems to be most feasible in terms of class time and effectiveness for children. In other words, we can say that if a pupil has a cognitive style that is similar to that of his/her teacher, the chances are improved that the pupil will have a more positive learning experience. Moreover the study would be helpful for the school administrators, policy makers and teachers for designing

their teaching styles which would help in maximizing students learning. In view these aspects, the objectives of the present study are stated as under.

### Objectives

Following objectives were framed in this study:

- 1) To study the difference between male & female secondary school teachers regarding systematic cognitive style.
- 2) To study the difference between male & female secondary school teachers regarding intuitive cognitive style.
- 3) To study the difference between male & female secondary school teachers regarding integrated cognitive style.
- 4) To study the difference between male & female secondary school teachers regarding undifferentiated cognitive style.
- 5) To study the difference between male & female secondary school teachers regarding split cognitive style.

### Hypotheses

Following hypotheses were tested in this study:

H<sub>01</sub> There is no significant difference between male and female secondary school teachers regarding systematic cognitive style.

H<sub>02</sub> There is no significant difference between male & female secondary school teachers regarding intuitive cognitive style.

H<sub>03</sub> There is no significant difference between male & female secondary school teachers regarding integrated cognitive style.

H<sub>04</sub> There is no significant difference between male & female secondary school teachers regarding undifferentiated cognitive style.

H<sub>05</sub> There is no significant difference between male & female secondary school teachers regarding split cognitive style.

### Delimitations of The Study

- 1) The study was limited to the Kullu district only.
- 2) The investigators limited the study to the secondary school teachers only.

### Methodology

In order to collect the data survey method under descriptive method of research was used. All the teachers of secondary schools of Kullu district constituted the population for the study. The sample of the study consisted of 200 teachers (100 male and 100 females) of the Kullu district. For the collection of necessary information for this study, investigators used cognitive style inventory developed and standardized by Dr. Praveen Kumar Jha (2001) measures the ways of thinking, judging, remembering, storing information, decision making and believing in interpersonal relationship. The cognitive Style Inventory consists of 40 items which measure systematic cognitive style and intuitive cognitive style consisting of 20 items each on a five point Likert format. Five responses categorized as totally disagree (1), disagree (2), undecided (3), agree (4), and totally agree (5). The minimum and maximum score on both dimensions ranges between 20- 100. For the analysis of data and to test the hypotheses 't'- test was used.

### Analysis of Data

The analysis of data is presented in Table 1 and interpreted as

under:

Table 1: Differences in Cognitive Styles of Male and Female Senior Secondary School Teachers

Sr.	Cognitive Style	Group	N	Mean	SD	df	t	Re-sults
1	System-atic	Male	19	149.32	11.92	30	2.445	S*
		Fe-male	13	140.85	7.67			
2	Intuitive	Male	09	139.55	8.35	19	2.480	S*
		Fe-male	12	147.42	5.28			
3	Integrated	Male	25	163.68	7.33	39	1.403	NS
		Fe-male	16	160.31	7.61			
4	undiffer-entiated	Male	21	107	11.97	43	0.674	NS
		Fe-male	24	109.58	13.68			
5	Split	Male	27	145	8.56	59	0.697	NS
		Fe-male	34	146.44	7.27			

S\*- Significant at 0.05 Levels of Significance & NS- Not Significant at 0.05 Levels of Significance

It is observed from the above table that t- value of 1<sup>st</sup> and 2<sup>nd</sup> group was found significant at .05 levels. Therefore, it can be concluded that the  $H_{01}$  and  $H_{02}$  were rejected. Table 1 also indicated that remaining three groups were not found significant at 0.05 level of confidence. Hence, hypotheses  $H_{03}$ ,  $H_{04}$  and  $H_{05}$  were accepted.

### Findings of The Study

On the basis of the statistical analysis the investigators arrived on the following findings:

- Male and female secondary school teachers differed significantly on systematic cognitive style.
- Male and female secondary school teachers differed significantly on intuitive cognitive style.
- Male and female secondary school teachers do not differ significantly on integrated cognitive style.
- Male and female secondary school teachers do not differ significantly on undifferentiated cognitive style.
- Male and female secondary school teachers do not differ significantly on split cognitive style.

### Educational Implications

From the findings of the study it is evident that significant difference was found between male and female senior secondary schools teachers regarding systematic cognitive styles and intuitive cognitive style. It is important to consider cognitive styles as the central goal of instructions therefore; an environment should create by the school, by the govt that nurtures the capabilities of the teachers and develop teachers' potentials to the fullest. Teachers should be encouraged to use both systematic cognitive style and intuitive cognitive style for optimum results in decision making

in teaching-learning process. So, they can plan various teaching-learning strategies to enhance teaching effectiveness.

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