

**IMPACT OF DEMOGRAPHIC VARIABLES ON THINKING STYLE OF  
SECONDARY SCHOOL STUDENTS**

**Dr. Neerja Gautam (Asso. Prof.)**

**Ms. Amandeep Kaur**

D.A.V. College of Edu. for Women, Amritsar

**Abstract**

*Generally styles are classified as cognitive style, learning style and thinking style. Cognitive styles are the ways of organizing information. Learning styles are about the ways of learning something and thinking styles describe how one prefers to think. It is foremost important for the teachers to focus their attention on students' favored thinking style before imparting the subject matter. Various researchers found that students taught through their preferred thinking styles results in increased and improved attitudes towards learning. Style of Thinking scale by Venkataraman was administered on 250 secondary school students studying in 10+1 standard randomly selected from 8 schools in Amritsar District. Gender, stream of study, management category and locality of schools are taken as demographic variables to be studied as independent factors. Various researchers found that students taught through their preferred thinking styles results in increased and improved attitudes towards learning.*

**Introduction**

Individual difference in human performance is an important area of interest in behavioral science. Intelligence, personality etc are some of the constructs developed for explaining individual difference. Generally styles are classified as cognitive style, learning style and thinking style. Cognitive styles are the ways of organizing information. Learning styles are about the ways of learning something and thinking styles describe how one prefers to think.

Actually 'thinking' is a very complex process. Thinking consists of the cognitive rearrangement or manipulation of both the information from the environment and the symbols stored in the long time memory. Thinking is the form of information processing that goes on during the period between a stimulus event and response to it.

**Sternberg (1994)** believed that intellectual abilities could not be understood without knowing how individuals reacting to environmental situation. In accord with his belief, he developed the mental self-governing theory which hypothesized that people govern their daily activities with different strategies. He called these different strategies “thinking style”. Sternberg proposed 13 thinking styles within five dimensions of mental self- government.

The human brain is divided into two hemispheres right and left. According to recent research, people who are right brain dominant and those who are left brain dominant process information and respond in different ways.

### **Right brain verses Left brain**

**a) Right brain:** The right side of the brain is best at expressive and creative tasks. The right cerebral hemisphere, which controls the left side of the body, is called the minor subordinate or mute side.

Some of the abilities that are popularly associated with the right side of the brain include:

- Images
- Intuition
- Creativity
- Recognizing faces
- Expressing emotions
- Music

In general the right dominated students enjoy the social aspects in class. An advice for teacher is to keep these students activated, give them the opportunity to write assignment or essays in creative ways.

**b)Left brain:** The left side of the brain is considered to be adept at tasks that involve logic, language and analytical thinking. The left brain is often described as being better at:

- Logic
- Critical thinking
- Number
- Language
- Reasoning

The left brain students are in general good with number and enjoy science class. A person who is left brained is often said to be more logical, analytical and objective.

**Right Brain and Left Brain Characteristics-**

| <b>Right Hemisphere</b>   | <b>Left Hemisphere</b>  |
|---|---|
| <p><b>Holistic:</b></p> <ul style="list-style-type: none"> <li>Processes information from whole to part starts with the answer and see the big picture, not details first.</li> </ul> | <p><b>Linear:</b></p> <ul style="list-style-type: none"> <li>Processes information from part to whole, takes pieces, lines them up and arrange them in logical order then it draw conclusions.</li> </ul> |
| <p><b>Random:</b></p> <ul style="list-style-type: none"> <li>Fits from one task to another.</li> <li>Gets many things done but without having addressed priorities.</li> </ul>        | <p><b>Sequential:</b></p> <ul style="list-style-type: none"> <li>Is a list maker and would enjoy making a master schedule and doing daily planning</li> </ul>   |
| <p><b>Concrete:</b></p> <ul style="list-style-type: none"> <li>Wants to see, feel or touch real objects.</li> <li>Prefers connectedness.</li> </ul>                                   | <p><b>Symbolic:</b></p> <ul style="list-style-type: none"> <li>Has no trouble processing symbol such as letters, words and mathematical notations.</li> <li>Is good at memorizing.</li> </ul>             |
| <p><b>Intuitive:</b></p> <ul style="list-style-type: none"> <li>Prefers elusive and manipulating objects.</li> <li>Prefers open ended questions.</li> </ul>                           | <p><b>Logical:</b></p> <ul style="list-style-type: none"> <li>Looks at differences.</li> <li>Prefers multiple choice tests.</li> <li>Sees cause and effect.</li> </ul>                                    |
| <p><b>Non-Verbal:</b></p> <ul style="list-style-type: none"> <li>Knows what something means but often has trouble finding the right words.</li> </ul>                                 | <p><b>Verbal:</b></p> <ul style="list-style-type: none"> <li>Has little trouble expressing him/her in words.</li> </ul>   |
| <p><b>Fantasy-Oriented:</b></p> <ul style="list-style-type: none"> <li>Is creative</li> <li>Is sometimes unaware of consequences.</li> </ul>  | <p><b>Reality-Based:</b></p> <ul style="list-style-type: none"> <li>Deals with things the way they are.</li> <li>Makes up rules to follow when there are no rules.</li> </ul>                             |

Abdual Gafoor and Lauanya (2008) indicated that local thinking style suits achievement in physics. Executive, Anarchic styles negatively affect physics achievement. External thinking favours achievement while conservative thinking negatively affected students' achievement.

Enaus, Harkins and Young (2008) found the public school teachers in Canada significantly different in their teaching style and there is a relationship between learning style and cognitive styles. Chua Yan Piaw (2013) noticed that there exists significant difference between the male and female students. Male students were better in elaborating creative idea than the female students. However there was no significant difference between male and female students on other four components of creative thinking ability. There was significant difference where the right brain styled student performed better than left brain styled. Result indicates that gender and thinking style were significant factors of creative thinking ability V. Bansal and Sangal (2014) found that male and female students do not significantly differ on their learning and thinking style. Rural students were also found not to be differing on their learning-thinking style as compared to their urban counterparts. It can be concluded on the basis of obtained findings that students' learning and thinking style was independent to gender and their residential background. Monika Sood (2014) indicated that creativity had effect on legislative and liberal thinking styles and stream had significant influence on monarchic and external thinking style. Whereas interaction between creativity and stream emerged out with reference to only one thinking style i.e. Internal thinking style.

There are literally as many ways of thinking as there are people in the world. Students come to the classrooms with a lot of creative ideas. Schools and other institutions value certain ways of thinking than others. So, the investigator felt that it is a need to analyze the impact of gender, stream of study, management category of schools and locality of the schools.

### **SIGNIFICANCE OF THE STUDY**

Thinking style plays a very important role in the attainment of ideal, harmonious development and academic achievement. Thinking includes many mental processes such as attention, classification, reasoning and generalization. Thinking style can be changed according to the age, time and experience. Every individual has own thinking style and it is

not fixed. Individual may have one preferred style in one stage and another in other stage. It is very important to recognize the preferred styles of students for developing intelligence and creativity in the fields with preferred style in academic area.

It is foremost important for the teachers to focus their attention on students' favored thinking style before imparting the subject matter. If they fail to do so, the consequences may be serious, because the teachers may tend to confuse style of students mind. Students who have same thinking style of teachers are benefited. Otherwise the students whose style is different from teacher's styles are labeled as "Slow" or "Dull". When students are taught through their preferred thinking style it results in increased and improved attitudes towards learning.

#### **OBJECTIVES OF THE STUDY**

1. To study the impact of gender on thinking style of secondary school students.
2. To study the impact of stream of study on thinking style of secondary school students.
3. To study the impact of management category of school on thinking style of secondary school students.
4. To study the impact of locality on thinking style of secondary school students.

#### **HYPOTHESES OF THE STUDY**

1. There exists no significant impact of gender on thinking style of secondary school students.
2. There exists no significant impact of stream of study on thinking style of secondary school students.
3. There exists no significant impact of management category of school on thinking style of secondary school students.
4. There exists no significant impact of locality on thinking style of secondary school students.

**RESEARCH DESIGN:** For the present study Descriptive survey method of investigation was used.

**SAMPLE:** Sample of the present study consisted of 250 students with gender, stream of study, locality and management of the school as demographic variables.

**RESULTS AND DISCUSSIONS:** In order to assess whether the impact of demographic variables exists on all the three categories i.e. right hemisphere, left hemisphere and whole hemisphere of thinking style of secondary school students is significant or not chi-square was calculated.

**Table-1**

**Showing chi-square value for thinking style w.r.t gender and management of school**

| Group | Chi-value | Degree of freedom | Level of significance |
|-------|-----------|-------------------|-----------------------|
| Boys  | 0.1608    | 2                 | Insignificant         |
| Girls |           |                   |                       |

**Table -2**

|            |      |   |               |
|------------|------|---|---------------|
| Private    | 0.54 | 2 | Insignificant |
| Government |      |   |               |

**Showing category wise distribution of thinking style with regard to stream of study**

| Stream →<br>Category ↓ | Arts     | Science  | Total |
|------------------------|----------|----------|-------|
| R                      | 73(66.5) | 60(66.5) | 133   |
| L                      | 45(44.5) | 47(44.5) | 92    |
| W                      | 7(12.5)  | 18(12.5) | 25    |
| Total                  | 125      | 125      | 250   |

Note: value inside ( ) is expected value (fe) and value outside ( ) is observed value (fo).

**Table-3**

**Showing chi-square value for thinking style with regard to stream of study**

| Group   | Chi-value | Degree of freedom | Level of significance |
|---------|-----------|-------------------|-----------------------|
| Arts    | 6.143*    | 2                 | Significant           |
| Science |           |                   |                       |

\*at.05 level of significance

**Table-4**

**Showing category-wise distribution of thinking style with regard to locality of school**

| Locality →<br>Category ↓ | Urban  | Rural  | Total |
|--------------------------|--------|--------|-------|
| <b>R</b>                 | 63(68) | 73(68) | 136   |
| <b>L</b>                 | 41(43) | 45(43) | 86    |
| <b>W</b>                 | 21(14) | 7(14)  | 28    |
| <b>Total</b>             | 125    | 125    | 250   |

Note: value inside ( ) is expected value (fe) and value outside ( ) is observed value (fo).

**Table-5**

**Showing chi-square value for thinking style with regard to locality of school.**

| Group        | Chi-value | Degree of freedom | Level of significance |
|--------------|-----------|-------------------|-----------------------|
| <b>Urban</b> | 7.926*    | 2                 | Significant           |
| <b>Rural</b> |           |                   |                       |

\*at 0.05 level of significance

As far as impact of gender and management category of school on thinking style is concerned it is clear from the above mentioned tables that calculated value of chi-square is less than tabulated value at 0.05 levels with 2 degree of freedom as against the impact of stream of study and locality of the school. Hence no statistically significant impact exists of the gender and management of school on thinking style of students.

- It may safely be concluded that thinking style of students is independent of gender.
- It may safely be concluded that thinking style of students is independent of management of the school.

Whereas it was found that statistically significant impact exists of stream of study and locality of school on thinking style of secondary school students.

- It may safely be concluded that stream of study has statistically significant impact on thinking style of secondary school students which is in favors of arts students.
- It may safely be concluded that locality of school has statistically significant impact on thinking style of secondary school students which is in favour of rural students.

P. Ramakrishnan and C. Naseema (2013) revealed that locality of school is found to be influencing the thinking styles of students. Urban pupils have significantly high legislative thinking style and rural pupil have significantly high judicial and monarchic thinking style.

### **CONCLUSION**

On the basis of the above stated results, it may be concluded that various demographic variables like stream of study and locality of the school as against gender and management of the school do have their impact on thinking style of students. Thinking style can be changed according to the age, time and experience. Every individual has own thinking style and it is not fixed. Individual may have one preferred style in one stage and another in other stage. It is very important to recognize the preferred styles of students for developing intelligence and creativity in the fields with preferred style in academic area which results in better teaching and learning.

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