



# The Relationship between Thinking Style and Gender in High School Students

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Available online at: [www.isca.in](http://www.isca.in), [www.isca.me](http://www.isca.me)

Received 7<sup>th</sup> January 2014, revised 31<sup>st</sup> April 2014, accepted 14<sup>th</sup> May 2014

## Abstract

Various researches show that thinking style is correlated with creativity, problem-solving, decision-making, educational and vocational advancement and different elements such as gender could affect the thinking style. Thus, this correlation research aimed to study the relationship between thinking style and gender. All the male and female students of district 13 of Tehran were taken as statistical universe. The sampling method was cluster sampling. The sample was composed of 200 students (100 males and 100 females). The Sternberg-Wagner inventory was used including five thinking style: Legislative, Judicative, Executive, Introspective and Extra tensive. The data was analyzed by SPSS software and Independent T-Test was used to compare the males and females mean. Given the findings of this research the males' mean of legislative thinking style ( $T = 3.47$ ,  $df=198$ ) and Introspective thinking style ( $T=3.06$ ,  $df=198$ ) was more than those of females and this difference was significant while the females mean in judicative, executive and extra tensive thinking style was more than those of males and this difference was significant in 2styles : judicative ( $T=5.36$ ,  $df=198$ ) and extra tensive ( $T=3.2$ ,  $df=198$ ) with  $p<0.05$  but difference was not significant in executive thinking style ( $T=2.03$ ,  $df=198$ ).

**Keywords:** Thinking style, gender, male students, female student.

## Introduction

All of us are confronted with some challenges and problems. However, ever body responds to his/her problems in a specific way. Some, while being faced with some problems, attempt to resolve and prevent them by correct and precise evaluation and using support system<sup>1</sup>. Smart behavior is a combination of cognitive, social and emotional components<sup>2</sup>.

Based on the triad theory of intelligence, conceptually intelligent people are ones who invest on their strengths and modify their own weaknesses, and a major part of such an investment is dependent on a matching between individual abilities and thought style which is chosen by him/her preferably<sup>3</sup>. A style is a way of thinking, to modify the style is not synonymous with ability but it is the way to use individual abilities. It is difficult to distinguish between styles and ability, the ability refers to the fact that how well a person can do something but the style means how the person likes to do job. Abilities prediction is measured through tests. Individual ability effects on educational and occupational performance of the human being. The fact that people prefer how to think can be as important as how to think well<sup>3</sup>.

Thinking styles include different types: Legislative, Judicative, Executive, Introspective and Extratensive. Generally, people with different thinking styles would like to use their abilities in different ways and relative to their thinking type, they present different responses. De bono addresses importance of success:

“Source of all human forces is thinking. Even though by being very expert in this regard, we need still to think better and better”<sup>4</sup>. Investigation about thinking styles and cognitive styles is derived from studies related to social, physiological and psychological aspects. Realizing and recognizing models related with thinking styles are actually one of the psychological fundamental developments in 20<sup>th</sup> Century. Individuals have stable and distinct ability to encrypt, store and process their data which is basically independent from intelligence<sup>5</sup>.

Sternberg and Grigorenko choose 199 students of primary schools for a research related to thinking styles and educational performance. This research shows that correlation is positive between legislative thinking style with creative thinking (0.19) and judicative thinking style with creative thinking (0.20) but there is negative correlation between executive style with creative thinking are (-0.16)<sup>6</sup>. Sternberg addresses that thinking styles of women and men are different because specific styles may be encouraged and punished and men's scores in comparison with women's are higher in legislative and internal thinking styles and it is lower in judging style<sup>7</sup>.

Zhang and Sternberg study thinking styles of Hong Kong and Chinese students<sup>2</sup>. Difference between females and males is significant in thinking style inventory so that male and female students are different in legislative, judicative, general, free and internal thinking styles, and in all cases males' scores are higher than females'<sup>8</sup>.

With respect to the four one-dimensional models, the styles such as field independence, reflective style, divergent thinking style, and achieving approach that are located at one pole, often show positive contributions to various learning performances<sup>9,10</sup>. Different studies suggest that thinking styles are correlated with creative process, problem solving, decision making, educational success as well as achievement, training methods and educational evaluation and also different factors including culture, age, parenting style of parents, socioeconomic status and above all gender are effective on thinking style<sup>11</sup>.

There are several factors of educational success. As Vakili et al show effects of marital status, grade, state of health, and the number of daily contacts with other people on education. Since students do not have much time to sleep, rest and leisure activities due to spend time high for studying and doing their research works, then this problem can be effective on physical health domains. Improving of quality of life may be applied to improve education quality<sup>12</sup>.

Besides, Awareness of one's own thinking, awareness of the content of one's conceptions, an active monitoring of one's cognitive processes, an attempt to regulate one's cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organize their methods of attack on problems in general<sup>13</sup>.

Abilities prediction is measured through tests. Individual ability is effective on his/her educational and occupational performance, but thinking style is also effective on individual performance significantly. The fact that people prefer how to think can be as important as how well they think<sup>14</sup>. Therefore, this study intended to evaluate thinking style type among male and female students, because such recognition will result in educational and occupational development. The hypothesis examined in present study was that thinking styles in two genders of female and male is different.

## Material and Methods

This investigation was descriptive and correlation-type. The statistical society included all students of high schools of district 13 of Tehran. Sampling method was cluster type and sample size included 200 students (i.e. 100 female students and 100 male students). These subjects were chosen from different high schools of district 13 of Tehran with cluster method.

Thinking styles inventory of Sternberg- Wagner was used to collect data which measured five thinking styles (i.e. Legislative, Judicative, Executive, Introspective and Extratensive). The people who have legislative thinking would like to do tasks in a style that they prefer. The legislators like to enact their own laws and to address issues that previously had not been planning and organizing. People with executive

thinking style would like to follow rules and laws and accept the duties which had been planned and organized in advance. The people having judicative thinking style like to evaluate laws and plans. They know some items preferred in which opinions are analyzed and evaluated. The introspective people are dealt with internal affairs and often tend to Withdrawal from others and sometimes social ignorance. Extratensive individuals are often sociable and try to work with others as much as possible and perform more successfully in group activities<sup>15</sup>.

The Sternberg inventory has 40 questions. Sternberg et al do a complete study in concerned with validity and justifiability of thinking style inventory (the inventory has a validity coefficient of 78%)<sup>15</sup>.

In present study, the inventory was distributed among 200 subjects. These subjects included 100 males and 100 females. Students completed Sternberg-Wagner inventory then results were analyzed by SPSS. Ethical considerations in present study were awareness of research objective, voluntary participation in the test and confidentiality of the subject's characteristics and information.

## Results and Discussion

Using T-Test in two independent groups (females and males), difference was significant in 4 thinking styles: Legislative, judicative, Introspective and extratensive (i.e.  $p < 0.05$ ). This difference was higher in legislative and introspective styles in male and in judicative and extratensive styles in female. Executive style mean in females was higher than males but it was not significant. Obtained results are presented in following table and figure.

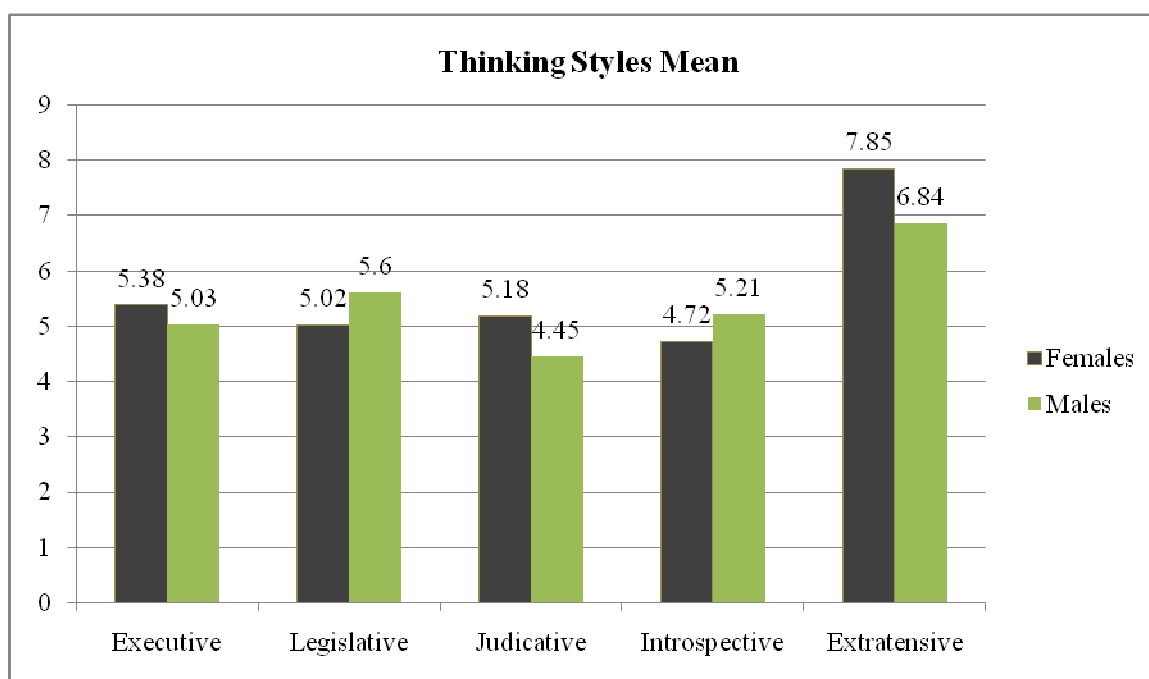
Thinking is one of the issues which historically has been interested by permanently philosophers because they pay attention to the fact that human owes his/her civilization and culture to think<sup>4</sup>. Sternberg and Grigorenko believe that study and recognition of thinking styles are important because thinking style builds a bridge between personality study and recognition. Therefore, to recognize thinking style is useful and necessary to predict educational success in educational opportunities<sup>6</sup>.

Also, thinking style is important and critical to predict occupational choices and success. Since a society's prosperity and dignity is dependent upon its education and according to how much educational and occupational environments are synchronized or conflicted with the individuals' thinking style, they can have stronger or weaker presence in their different educational and occupational phases.

Thinking related constructions expand our imagination against what people are able to do and also approach our imagination towards what people prefer.

**Table-1**  
**Results of T-Test of the thinking styles in males and females**

Thinking Styles	Groups	Mean	Standard Deviation	Degree of Freedom	T-Test	P value
Executive	Male	5.03	1.41	198	2.035	0.43
	Female	5.38	0.97			
Legislative	Male	5.6	1.05	198	3.47	0.001
	Female	5.02	1.25			
Judicative	Male	4.45	1.05	198	5.36	0.001
	Female	5.18	0.98			
Introspective	Male	5.21	0.85	198	3.06	0.003
	Female	4.72	1.38			
Extratensive	Male	6.84	1.82	198	3.2	0.002
	Female	7.85	2.56			



**Figure-1**  
**Thinking styles mean in 2 groups (males and females)**

Realizing thinking style helps to better find a reply for the question why some activities are suitable and some are not. Absolutely, abilities to success are very important in education but it is not the only factor because the individuals' thinking style (i.e. a person prefers how to think) also can be as important as how well he/she thinks. Most of the students who are categorized in poor training class have potential and ability to be successful, but teachers are unable to realize their thinking and learning styles and do training in such a way not compatible with their thinking style. What is important to improve performance is not individual ability but is compatibility of individual thinking style with his/her charged duties. Since gender is considered as an effective and important factor in individual thinking style kind, recognizing thinking styles

between males and females seems to be critical in order to improve individual performance. Therefore, paying attention to thinking style seems to be a necessary issue in order to improve individual performance<sup>7</sup>.

Previous studies performed by Sternberg and Grigorenko suggest difference of thinking styles between males and females. Our results were also in line with previous researches. This study showed that there are some differences between thinking style of male and female students. Male students mostly had legislator and introspective thinking styles, that is, boys actually would like to do tasks in their own method, tend to construct, invent and design and often like to work alone, concentrate on their internal world and rely on themselves;

while girls frequently had judging, operational and outward-oriented thinking styles. In fact, female students often judge and evaluate individuals and tasks, tend to obey commands and orders, and what they hear, like to work with others, concentrate on external world and they are somewhat dependent on the others to do tasks.

## Conclusion

Ultimately, since thinking style is an important and necessary indicator to improve performance and individual success in educational and occupational areas, it seems reasonable that in schools and offices suitable activities with each person's thinking style be planned according to each his/her gender. This will result in the best performance with lower energy and time and abundant enthusiasm. It is proposed that in next studies, compatibility effect between individuals' thinking style and type of designated activity in educational and occupational success be examined, because by such a way we will be able to find that how much thinking style would be an effective indicator in educational and occupational success.

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