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Thinking Styles of University Students in relation to Gender, Residence and Study Track

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Abstract*: The present study aimed at studying the thinking styles of University students in relation to gender, residence and study track. Total sample 200 University students was taken from different departments of H.P. University, Shimla. Thinking style inventory was used to assess the thinking styles of these students. The "t" test was applied to find out differences among male/ female, Rural/ Urban and professional/ non-professional students. The result of the study revealed that significant gender differences exists on Judicial and external styles of thinking. Professional and non-professional students also differed on Judicial and external thinking style. However, rural and urban university students did not differ from each other on any thinking styles.*

Keywords *: Thinking styles, Gender, Residence and Study Track*

Introduction

The Universities in the third world countries today are on the threshold of a new era population explosion, rapid advancement and expansion of new areas of knowledge increased reliance on aid in the solution of social and scientific problems have all contributed to the reshaping of the responsibilities and goals of the Universities. Education is not mere imparting information in some selected subjects. Acquisition of knowledge is only one of the outcomes of education. The role of education now is to help the educated to discover himself to develop his innate abilities and above all to cultivate desirable attitudes and values. In the 21st century higher education will have to develop further goal. Higher education is supposed to be discharging the function of not only teaching but also research. According to Webster New world dictionary a style is distinctive or characteristic manner or method of acting or performing. Style represent a set of preference. In an examination of the literature on styles, Grigorenko and Sternberg (1995) found three major approaches to style (i) Cognition-

centered (ii) personality centered (iii) activity centered. Sternberg has identified 13 thinking styles based on functions, forms, levels, scope and learning. These thinking styles have been shown below:

Functions	Forms	Levels	Scope	Learning
Legislative	Monarchic	Global	Internal	Liberal
Executive	Hierarchic	Local	External	Conservative
Judicial	Anarchic			

Thinking style can be used as learning device to help the individual learners or groups to understand their particular thinking styles. It can be used to predict their academic and career choices. It can be used as a criterion for choosing instructional method or matching college students to various educational outcomes may be enhanced optimally. Thinking styles render a great help to students, teachers, guidance workers, curriculum designers as well as educational manager in the improvement to total teaching learning process.

Review of Related studies

Related literature is the base or foundation on which the structure of further studies is laid.

Mc Glove (1980) and Levy (1980) found that women students were superior in left hemisphere style and men in right hemisphere style of thinking. Rama and Vats (1983) found that females were having higher scores in right hemisphere styles of thinking in comparison to males but the differences in mean scores was not statistically significant. Soliman (1989) reported that males scored significantly higher than females on the right hemispheres styles of thinking. Further, males scores significantly higher than females on the left hemisphere style of thinking. Also females scored significantly higher than males on the integrative styles of thinking. Hebencht (1990), Manfort (1990), Grigorenko and Sternberg (1997) did not find any significant difference in the styles of thinking of male and female. Both male and female students had almost similar thinking styles.

Verma (1994) , Zhang and Sachs (1997) and Sood (2000) observed that students belonging different residential localities did not show any significant differences in their thinking style. Mohan Sundaram and Kumar (2000) reported that urban students were found to have more inclination towards right hemispheric thinking style and rural students were found to possess more likely toward the use of left hemispheric thinking style. Verma (2001) found that rural territory students were more inclined to use hierarchical style of thinking and the urban territory student were more prone to use oligarchic style than their counterpart students.

Silbey (1980) reported that science and engineering fields tended to possess left hemisphere style of thinking where as students majoring in arts, literature, education, nursing, law and communication fields tended to possess right brain dominant style. Lavach (1991) reported that humanities subjects depended on a more diffuse and perhaps, divergent thinking style. They exhibited right hemisphere style whereas natural science subjects appear to prefer a more integrated of left hemisphere style. The similar preference for styles of thinking was

exhibited by social science students. Sternberg and Grigorenko (1995) reported a significant effect of disciplines/ subject on thinking styles. Humanities teacher were found more liberal than science teacher and science teacher were found more local than humanities teachers. The studies cited above revealed that in India there is a need for conduct such studies.

Objectives of the Study

The following objectives were formulated for the study:

1. To find out the differences in thinking styles of male and female university students.
2. To find out the differences in thinking styles of rural and urban university students.
3. To find out the differences in thinking styles of Professional and non-professional university students.

Hypotheses of the Study

The following hypotheses were formulated for the study :-

1. There will be significant differences in thinking styles in respect of male and female university students.
2. There will be significant differences in thinking styles in respect of rural and urban university students.
3. There will be significant differences in thinking styles in respect of professional and non-professional university students.

Methodology of the Study

Depending upon the objectives of the study, the descriptive research method was deemed appropriate and suitable and was used to the study.

Sample

In the present study all students of final year enrolled in two professional (Law, B.Ed) and non-professional (Sociology, History, Economics and English) regular courses in H.P. University Shimla. The sample consisted of 200 students 100 professional and 100 non-professional. The sample was selected through stratified random sampling technique from University of H.P.

Tool

A standardized tool called thinking style inventory (TSI) developed by Sternberg. The original inventory has 104 items that comprise 13 scales. But the short version has only 26 items, 2 items for each scale.

Statistical techniques used

In order to analyze the data “t” test statistical technique was applied.

THE RESULTS

(A) Comparison of thinking styles of male and female university students

The Table-I gives statistical calculated finding out the differences between means of thinking styles of male and female students.

Table-1: Significance of Difference in mean scores of Thinking Style in respect of Male and Female Students

Sr. No.	Variables	Male Group (N-98)	Female Group (N-102)	"t" values
1.	Legislative Style	M=8.5 SD=1.46	M=8.2 SD=1.38	1.66 NS
2.	Executive Style	M=7.97 SD=1.410	M=7.91 SD=1.27	0.304 NS
3.	Judicial Style	M=7.43 SD=1.64	M=6.79 SD=1.44	2.90**
4.	Global Style	M=5.84 SD=1.85	M=5.69 SD=1.67	0.564NS
5.	Local Style	M=7.081 SD=1.603	M=6.941 SD=1.440	0.650 NS
6.	Liberal Style	M=7.785 SD=1.682	M=7.578 SD=1.381	0.950 NS
7.	Conservative Style	M=6.714 SD=1.492	M=6.950 SD=1.423	1.15 NS
8.	Hierarchic Style	M=7.744 SD=1.664	M=7.55 SD=1.332	0.917 NS
9.	Monarchic Style	M=5.86 SD=1.97	M=5.54 SD=1.85	1.176 NS
10.	Oligarchic Style	M=7.38 SD=1.86	M=7.03 SD=1.754	1.361 NS
11.	Anarchic Style	M=7.95 SD=1.49	M=7.931 SD=1.380	.0867 NS
12.	Internal Style	M=7.132 SD=1.797	M=7.088 SD=1.548	.187 NS
13.	External Style	M=7.663 SD=1.844	M=7.019 SD=1.823	2.48*

(NS= Not significant at .05 level),(*= Significance at .05 level),

(**= Significance at .01 level), df= 198

Table-I shows that out of obtained 13 "t" values 11 were found to be non-significant. These "t" values make the comparison of male and female students on 11 thinking styles. This the result implies that male and female university students did not differ significantly on legislative, executive, global, local, liberal, conservative, hierarchic, monarchic, oligarchic, anarchic and internal styles of thinking. Hence null hypothesis in case of 11 thinking styles was accepted. Table-I also reveals that "t" values (2.90, 2.48) was found to be significant. It means that both the groups differ significantly on Judicial and external style of thinking. Mean values of male group was greater than the mean value of female students. Male

students were more prone towards judicial and external thinking styles than the female students. Hence, the null hypothesis was rejected in case of two "t" values.

(B) Comparison of thinking styles of Rural and Urban university students

Table-2 provides "t" value along with means and standard deviation of scores of thinking styles in respect of Rural and Urban university student.

Table-2 : Significance of Difference in mean scores of Thinking Style in respect of Rural and Urban Students

Sr. No.	Variables	Rural Group (N-91)	Urban Group (N-109)	"t" values
1.	Legislative Style	M=8.25 SD=1.52	M=8.39 SD=1.34	0.691 NS
2.	Executive Style	M=7.91 SD=1.46	M=7.96 SD=1.23	0.265 NS
3.	Judicial Style	M=6.99 SD=1.55	M=7.20 SD=1.58	0.958 NS
4.	Global Style	M=5.82 SD=1.93	M=5.72 SD=1.60	0.427 NS
5.	Local Style	M=6.91 SD=1.61	M=7.09 SD=1.44	0.823 NS
6.	Liberal Style	M=7.54 SD=1.54	M=7.79 SD=1.53	1.190 NS
7.	Conservative Style	M=6.74 SD=1.39	M=6.92 SD=1.51	0.880 NS
8.	Hierarchic Style	M=7.76 SD=1.59	M=7.55 SD=1.42	0.963 NS
9.	Monarchic Style	M=5.53 SD=1.77	M=5.83 SD=2.02	1.147 NS
10.	Oligarchic Style	M=7.25 SD=1.80	M=7.16 SD=1.82	0.376 NS
11.	Anarchic Style	M=7.89 SD=1.49	M=7.98 SD=1.38	0.447 NS
12.	Internal Style	M=6.98 SD=1.78	M=7.22 SD=1.57	1.00 NS
13.	External Style	M=7.20 SD=1.74	M=7.44 SD=1.95	0.89 NS

(NS= Not significant at .05 level), df= 198

Table-2 reveals that all the 13 "t" values came out to be non-significant at 0.05 level of significance with df 198. These "t" values makes the comparison of rural and urban students on these thinking styles. The result implies that rural and urban students did not differ significantly on legislative, executive, judicial, global, local, liberal, conservative, hierarchic, monarchic, oligarchic, internal and external thinking styles. It may also be inferred that the mean differences of thinking styles in respect of rural and urban students were not true. Differences in mean scores may be ascribed due to chance factor and sampling fluctuation. Hence the null hypothesis was accepted.

(C) Comparison of thinking styles of professional and non-professional university students

Table-3 provides "t" values alongwith mean and standard deviation of scores of thinking styles in respect of professional and non-professional university students.

Table-3 : Significance of Difference in mean scores of Thinking Style in respect of Professional and Non-Professional Students

Sr. No.	Variables	Professional (N=100)	Non-Professional (N-100)	"t" values
1.	Legislative Style	M=8.49 SD=1.27	M=8.17 SD=1.56	1.594 NS
2.	Executive Style	M=8.09 SD=1.29	M=7.79 SD=1.37	1.549 NS
3.	Judicial Style	M=7.43 SD=1.49	M=6.78 SD=1.59	2.990**
4.	Global Style	M=5.85 SD=1.81	M=5.68 SD=1.70	0.683 NS
5.	Local Style	M=7.07 SD=1.51	M=6.95 SD=1.54	0.557 NS
6.	Liberal Style	M=7.88 SD=1.53	M=7.48 SD=1.52	1.853 NS
7.	Conservative Style	M=7 SD=1.48	M=6.67 SD=1.43	1.606 NS
8.	Hierarchic Style	M=7.74 SD=1.43	M=7.55 SD=1.58	0.893 NS
9.	Monarchic Style	M=5.69 SD=1.95	M=5.7 SD=1.88	.0369 NS
10.	Oligarchic Style	M=7.29 SD=1.91	M=7.11 SD=1.70	0.702 NS
11.	Anarchic Style	M=8.12 SD=1.26	M=7.76 SD=1.57	1.789 NS
12.	Internal Style	M=7.19 SD=1.74	M=7.03 SD=1.60	0.676 NS
13.	External Style	M=7.59 SD=1.72	M=7.08 SD=1.96	1.96*

(NS= Not significant at .05 level), (*= Significance at .05 level),

(**= Significance at .01 level),df= 198

Table-3 reveals that 11 "t" values found to be non-significant at .05 level of significance with dif 198. These "t" values makes the comparison of professional and non-professional students on legislative, executive, globe, local, liberal, conservative, hierarchic, monarchic, oligarchic, anarchic and internal thinking styles. The result implies that both the groups did not differ significantly on these style.

Table-3 further reveals that two "t" values (2.990, 1.96) found to be significant at 0.01 and 0.05 level of significance. It may be said that professional students were more prone towards

Judicial and External thinking styles than the non-professional student. Hence, research hypothesis was accepted in case of two thinking styles that is judicial and external thinking style.

Major Findings

After the analysis and interpretation of data, the Investigator reached at the following findings:

i. Male and female students differed significantly with respect to judicial and external styles of thinking. Further male students were found to adopt judicial and external style more than female students. However, legislative, executive, global, local, liberal, conservative, hierarchic, monarchic, oligarchic, anarchic and internal style of male and female students were found to be similar.

ii. Rural and urban students did not exhibit any significant differences on any thinking styles.

iii. Professional and non-professional student differed significantly with respect two thinking styles namely Judicial and External style. Professional students were found to be superior in Judicial and external style than their counterparts.

Educational Implications

The present research being descriptive one has some educational implications. First of all it gives the message to the prospective researcher they should explore gender, residence and study track related differences in students thinking styles. In order to have broad generalization in the field concerned. It has also message to the teachers to take care of motivational and learning aspects of the students based on systematic diagnosis. Needed remedial instructions. He/she should try to accommodate individual differences with regard to thinking styles of the students in his teaching styles. So that learning performance of the students may be improve to maximum extent. Instructional designer also can take advantage of the findings of the study. In designing the instruction and textbook material educational administrators may also try to build up the educational environment of the institution conducive to level of motivation diversity in thinking styles of the students.

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