

Difference in Functional Thinking Styles of High, Average and Low Achieving Prospective Teachers

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Abstract

The purpose of the present study was to examine the differences in functional thinking styles (Legislative, Executive and Judicial) of low, average, and high achieving prospective teachers. In the beginning over 501 secondary prospective teachers (B.Ed. students) from eight private B.Ed. Institutions of Himachal Pradesh were selected randomly. Hindi Adapted version of Thinking Styles Inventory (TSI) developed by Sternberg and Wagner was used to assess prospective teachers' functional thinking styles. Results indicate that there exist significant differences in functional (Legislative, Executive and Judicial) thinking styles of high, average and low achieving prospective teachers. High and Average achieving prospective teachers scored significantly higher on Legislative, Executive and Judicial styles as compare to Low achieving prospective teachers.

KEYWORDS: legislative, executive, judicial, self-government

INTRODUCTION

In managing our activities, we choose styles with which we feel comfortable (Sternberg, 1988, 1997). Thinking styles are defined as our preferred ways of using the abilities that we have. As one of the latest theories of styles, Sternberg's (1988, 1997) theory of mental self-government, is drawing increasing interest among scholars. Using government as a metaphor, Sternberg argued that just as there are many ways of governing a society, people have many ways of managing or governing their activities, and they do so in a style with which they feel comfortable. In addition, peoples' thinking styles vary depending on the stylistic demands of a given situation and are at least partially socialized, suggesting that they can be modified.

In his triarchic theory, Sternberg suggested that the synthetic distribution of human intelligence can be explained by combinations of environment and experience (Sternberg, 1985). Further, Sternberg also outlines the various thinking styles that explain self-control of the mind and intelligence. These thinking styles are divided into five main categories (Sternberg, 1994): functions of mental self-government, forms of mental self-government, levels of mental self-government, orientations of mental self-government, and ideologies of mental self-government. A government has, in brief, three functions: legislative, executive, and judicial. When applying these functions to human beings, these functions transform into the following thinking styles (i) legislative—the inclination to construct one's own style and rules in order to handle unexpected problems independently; (ii) executive—the inclination to follow rules and deal with expected problems; and (iii) judicial—the inclination to assess regulations and programs, make regulations, and hold one's own opinions or ideas (Sternberg, 1997) (Lin, 1999). These three thinking styles coexist, influencing and relating to each other in different ways and to varying extents depending on the situation. According to Sternberg, people adopt

different thinking styles depending on the requirements of certain circumstances or job functions.

The relationship between thinking styles and academic achievement has received a great attention over the last two decades (Albaili, 2006, Sternberg, 1997, Sternberg & Wagner, 1992). Researchers have shown that certain thinking styles could be used as notable predictors of students' academic achievement and performance. Sternberg and Grigorenko (1993) found that Judicial and Legislative thinking styles correlated positively to students' success in a variety of academic tasks, the Executive thinking style tended to correlate negatively to success in these tasks. Zhang and Sternberg, (1998) found that the Executive were positively and Legislative style tended to contribute negatively to academic achievement. Furthermore, Cano-Garcia & Hughes, (2000) found that the higher academic achievers tended to be those who preferred to adhere to existing rules and procedures (Executive style), and who preferred not to create, formulate, and plan for problem solutions (Legislative style in a negative sense). In another study, Bernardo, Zhang and Callueng (2002) found that judicial style was positively related to academic achievement among Filipino students. Zhang (2004) found that the judicial style was significantly contributed to the prediction of students' academic achievement. From these studies we can conclude that students' thinking styles contribute to their academic achievement beyond what can be explained by their abilities, as assessed by both self-rating and performance tests (Grigorenko & Sternberg, 1997; Sternberg & Grigorenko, 1995; Zhang, 1999b, 2001a, 2001b; Zhang & Sternberg, 1998). No study has been found on difference in functional styles of high, average and low achieving prospective teachers. Accepting the triarchic theory, this study investigates the difference in functional thinking styles of high, average and low achieving prospective teachers

METHOD

In the Present study, descriptive research method was employed as the purpose of the study was to simply explore the difference in functional thinking styles of high, average and low achieving prospective teachers.

SAMPLE

The initial sample for the study comprised 501 secondary prospective teachers (B.Ed. students) from eight private B.Ed. Institutions of Himachal Pradesh. These subjects were of both the gender and from both the streams science and arts. First of all institutions were selected as per convenience. Thereafter, two sections from each of the institutions were taken randomly. Thus sampling of the subjects was done through random cluster technique. Subjects were classified according to levels of academic achievements by using $M \pm SD$ formula. Those who scored $M + SD$ or above were identified as high achievers and those who scored $M - SD$ or below were designated as low achievers. Rests of the subjects were regarded as average achievers. Equal number of high, average and low achieving prospective teachers was selected from their group by using table of random number.

TOOL USED

Hindi Adapted version of Thinking Styles Inventory (TSI) developed by Sternberg and Wagner was used to assess participants thinking styles. This is a short form, consisting of 65 items. The inventory has 13 scales, with 5 items on each scale. On original TSI, the respondents are asked to rate themselves on a 7 point scale anchored by 1-which indicates the statement does not characterize them at all, 7-which indicates that the statement

characterize them extremely well. These 13 scales correspond to the 13 thinking styles described in Sternberg’s theory of mental self-government. Sternberg and Wagner (1992) collected norms for various age groups on the long version of the TSI (which contains 104 items, 8 for each of the 13 scales) for their college sample, scale reliabilities ranged from .42 (monarchic) to .88 (External), with median of .78. The thinking styles inventory has also proved to be reasonably reliable and valid for identifying thinking styles of university students in HongKong. For example, while the alpha coefficients in Sternberg’s (1994) study ranged .44 to .88, those in Zhang and Sachs’s (1997) study ranged from .53 to .87 and in another study of Zhang between .46 and .89.

RESULTS AND DISCUSSION

Table 1

‘t’ Values Showing Significance of Difference in Mean Scores of Functional Thinking Styles in respect of High, Average and Low Achieving Prospective Teachers

Functional Thinking Styles	High Achievers Gp1 N=60	Average Achievers Gp2 N=60	Low Achievers Gp3 N=60	Gp1 vs Gp2	Gp1 vs Gp3	Gp2 vs Gp3
Legislative	M = 21.23, SD = 2.90	M = 21.12, SD = 2.24	M = 19.60, SD = 1.93	t = 0.25 NS	t = 3.63**	t = 3.97**
Executive	M = 21.60 SD = 2.45	M = 21.47 SD = 2.07	M = 19.48 SD = 2.97	t = 0.32NS	t = 4.25**	t = 4.24**
Judicial	M = 20.35 SD = 2.69	M = 19.35 SD = 2.97	M = 18.42 SD = 3.02	t = 1.25NS	t = 5.96**	t = 3.65**

** = Significant at .01 level, NS = Not significant at .05 level

In case of Legislative thinking style, the table 1 discloses that there was no significant difference between the means of groups 1 and 2 on legislative thinking style as the first obtained ‘t’ value (.25) was not found significant at .05 level of significance. Table 1 further indicates that the second ‘t’ value for groups 1 and 3 was found to be significant at .01 level of confidence with df 118. Further, mean score (21.23>19.6) was in favour of high achieving group. From this it may be inferred that high achieving prospective teachers were having more inclination toward legislative thinking style than low achieving prospective teachers. It may also be observed from the Table 1 that groups 2 and 3 differed significantly and mean was in favour of group 2 i.e. average achieving group. From this it may be concluded that average achieving prospective teachers were more legislative in thinking style than low achieving prospective teachers.

For executive thinking style, Table 1 shows that the first ‘t’ value (.32) of groups 1 and 2 was non-significant. It indicates that high achieving and average achieving groups

did not differ significantly with reference to executive thinking style. It may be seen further in Table 1 that the second 't' value (4.25) was significant at .01. Further mean score was in favour of group 1 ($M = 21.60 > M = 19.48$). This suggests that high achieving prospective teachers were higher on executive thinking style than low achieving prospective teachers. Also, the third 't' value equal to 4.24 was significant at .01 level. This pointed out that there was a significant difference in executive thinking style of average and low achieving prospective teachers. Since average achieving group was having greater mean score than low achieving group ($M = 21.47 > M = 19.48$), it may be said that average achieving prospective teachers tended to be more executive in their thinking style than low achieving prospective teachers.

In case of Judicial thinking style, Table 1 further discloses that 't' value of 5.96 for group 1 and group 3 was found to be significance ($P < .05$). It implies that there was a true difference in mean scores of judicial style of the group 1 and group 2. Further, mean score of group 1 was greater than group 3 ($M = 20.35 > M = 18.42$). It means prospective teachers with high academic achievement tended to prefer judicial style more than those prospective teachers who had low academic achievement. It may further be seen from Table 1 that group 2 and group 3 also differed significantly on judicial style as obtained 't' value 3.65 was found to be significant at .05 level of confidence. Also, mean score of average achieving group was greater than that of low achieving group ($M = 19.35 > M = 18.42$). From this it may be concluded that average achieving prospective teachers tended to use judicial style more than low achieving prospective teachers. The 't' value (1.25) for group 1 and group 2 was not significant at .05 level. Therefore both the groups did not differ significantly with reference to their preference for judicial style. It means high and average achieving prospective teachers were alike in their preference for the use of judicial thinking style.

The present study examined the differences among differences in thinking styles among low, average, and high achieving prospective teachers. Analysis indicated that there exist significant differences in functional (Legislative, Executive and Judicial) thinking styles of high, average and low achieving prospective teachers. High achievers had stronger preference for Legislative, Executive and Judicial Thinking Styles than low achieving prospective teachers. These results appeared to be inconformity with the findings of Grigorenko & Stenberg (1997) and Zhang (2001) with reference to fresh three thinking styles. These results are partially supported by Stenberg and Grigorenko's (1993) study, who found that the Judicial and Legislative styles correlated positively to a student's success in a variety of academic tasks. These results would lend support to the notion that students who adapted thinking styles that require respect for authority (Executive), those who tended to adapt thinking styles that are creativity generating (Legislative) tended to be more successful in their academic achievement. Prospective teachers in the faculties of education should be educated about thinking style and about the things that influence thinking styles. In addition, they should be educated about weak and strong points of these thinking styles. Curriculum of education faculty and their programs should include activities, projects and programs that would help students to have different thinking styles.

REFERENCES

- Albaili, M. A. (2006). Reliability and Validity of the Thinking Styles Inventory: Evidence from United Arab Emirates. *Proceedings Of The 2006 Joint Annual Conference Of The Australian Psychological Society And New Zealand Psychological Society*, Auckland, New Zealand, 26-30 September, 2006.
- Bernardo, A.B.; Zhang, L.F. and Callueng C.M. (2002) Thinking Styles and Academic Achievement among Filipino Students. *The Journal of Genetic Psychology*, Vol. 163 (2), 149-163.
- Cano-Garcia, F., & Hughes, E.H. (2000). Learning and Thinking Styles: An Analysis of Their Interrelationship and Influence on Academic Achievement. *Educational Psychology*, 20 (4), 413-430.
- Grigorenko, E. L., & Sternberg, R. J. (1993). *Thinking Styles in Teaching Inventory*. Unpublished Test, Yale University, New Haven, Ct.
- Grigorenko, E. L., & Sternberg, R. J. (1997). Styles of Thinking, Abilities, and Academic Performance. *Exceptional Children*, 63(3), 295–312.
- Lin, S.(1999) Guiding Principles of Thinking Styles, unpublished.
- Sternberg, R. J. (1994) Thinking styles: Theory and assessment at the interface between intelligence and personality. In R. J. Sternberg & P. Ruzgis (Eds.), *Personality and intelligence* (pp. 169-187). New York: Cambridge University Press.
- Sternberg, R. J. (1997). *Thinking Styles*. New York: Cambridge University Press.
- Sternberg, R. J., & Grigorenko, E. L. (1995) Styles of thinking in the school. *European Journal for High Ability*, 6, 201-219.
- Sternberg, R. J., & Wagner, R. K. (1992). *Thinking Styles Inventory*. Unpublished Test, Yale University, New Haven, Ct.
- Sternberg, R.J. (1985) Human Intelligence: The Model is the Message, *Science*, 230 (4730), 1111–1118
- Sternberg, R.J. (1994) Allowing for Thinking Styles, *Educational Leadership*, 52 (3), 36–40
- Zhang L.F. (2001) Do Thinking Style Contribute to Academic Achievement Beyond Self-Rated Abilities. *The Journal of Psychology*, 135 (6), 621-637.
- Zhang, L. F. (1999a). A Comparison of U.S. And Chinese University Students' Cognitive Development: The Cross-Cultural Applicability of Perry's Theory. *The Journal Of Psychology*, 133(4), 425–439.
- Zhang, L. F. (2000b). Relationship between Thinking Styles Inventory and Study Process Questionnaire. *Personality and Individual Differences*, 29, 841–856.
- Zhang, L. F. (2001a). Approaches and Thinking Styles in Teaching. *The Journal Of Psychology*, 135(5), 547–561.
- Zhang, L. F. (2004). Revisiting the Predictive Power of Thinking Styles for Academic Performance. *The Journal of Psychology*, 138, 351-370
- Zhang, L. F., & Sachs, J. (1997). Assessing thinking styles in the theory of mental self-government: A Hong Kong validity study. *Psychological Reports*, 81, 915-928.
- Zhang, L. F., & Sternberg, R. J. (1998). Thinking Styles, Abilities, and Academic Achievement among Hong Kong University Students. *Educational Research Journal*, 13, 41–62.