



IDENTIFYING COGNITIVE STYLES OF B.Ed. TRAINEES IN RELATION TO GENDER, MEDIUM OF INSTRUCTION, LOCALITY AND TYPES OF MANAGEMENT

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ABSTRACT

In this paper, an attempt has been made to study the cognitive styles of B.Ed trainees in Chennai District of TamilNadu. Cognitive styles like perception, remembering, problem solving, thinking, memory, reasoning and intelligence etc, influence the behaviour of students in learning process. These are the factors which are responsible to mould the student behaviour and learning. For this purpose sample of 1200 B.Ed trainees from the government, aided and private colleges of Chennai 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 significant of difference between the various groups 't'- test was applied. Results indicated that there is no significant difference between male and female B.Ed trainees regarding systematic and intuitive cognitive style. Also, there is significant difference between Tamil and English medium B.Ed trainees regarding systematic and intuitive cognitive styles. Also, there is significant difference among the different Locality of college B.Ed. trainees with respect to Intuitive and Overall Cognitive Styles. Moreover, there is significant difference among the B.Ed. trainees studying in the different types of management with respect to Overall Cognitive Styles.

Key words: *Cognitive Style, Thinking, B.Ed. trainees and Gender, Medium of Instruction, Locality and Types of Management*

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 learning environment, knowledge of student cognitive style preferences assists educators to better understand their students. As we all know learning is a dynamic

activity. It unfolds a world of knowledge, information, experience and education. Nevertheless the cognitive styles of students influence their learning styles. Cognitive styles may impact on their behaviour. Cognitive styles are important in development of students 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 identifies the ways individuals react to different situations. Cognitive style describes consistencies in using cognitive processes. It includes stable attitudes, preferences or habitual strategies that distinguish the individual styles of perceiving, remembering, thinking and solving problems. Cognitive Styles may be directed towards personal actions and facilitate improvement in the quality of life and general teaching. The present reach study explored the role of Cognitive Styles of B.Ed. trainees.

MEANING AND DEFINITION OF COGNITIVE STYLES

Cognitive style is the ways that individuals prefer in the process of adapting new knowledge to existing one, evaluating new information and adapting new knowledge to their lives.

Messick's (1995) definition "cognitive styles are characteristic modes of perceiving, remembering, thinking, problem solving, decision making that are reflective of information processing regularities that develop in congenial ways".

REVIEW OF RELATED LITERATURE

Philip, et al., (2017) conducted the effects of cognitive style and gender on adolescents' problem solving ability. This study selected sample 240 B.Ed. students (109 males and 131 females; mean age = 16.5 years; SD = 2.56) were participants in the study. The Group Embedded Figures Test was used to classify participants into field independent ($n = 127$) and field dependent ($n = 113$) cognitive styles. A 16×14 puzzle box was used to test problem solving ability. *F*-statistics revealed significant main effects of cognitive style ($p < .001$) and gender ($p < .001$) on problem solving. Adolescents possessing the field independent cognitive style solved more puzzle task than adolescents possessing the field dependent cognitive style. Male adolescents outperformed female adolescents on the problem solving task. Effect size (ES) values of 0.43 and 0.27 for cognitive style and gender respectively showed that the results were reliable.

Balasubramaniam and Rajaguru (2016) conducted a study on cognitive styles of student teachers. This study was based on data collected from 75 students teachers studying from college of education. This study was adopted random sampling technique used collect the data. This study results indicate that the student teachers possess the three types of cognitive styles. This study was found that there is a significant difference between male and female student teachers and there is no significant difference between rural and urban student teachers in their cognitive style. Also, found that exist association in cognitive styles of teachers based on variation in their gender.

Siddiqui Fakeha Salahuddin (2015) made a study of cognitive style of B.Ed. college students of science stream with respect to gender and locality. It has reveals that there is significant difference between male and female B.Ed. college students of science stream in their systematic and intuitive cognitive styles. Also, it has found that there is no significant difference between rural and urban B.Ed. college students in their cognitive style.

Bruno (2015) investigated the relationships among field dependent- independent cognitive styles and gender, career choice, and academic achievement of secondary school students in Nigeria. The instrument for data collection was Group Embedded Figure Test (GEFT). The results revealed that (1) higher proportion of the male respondents were field independent while a higher proportion of the female respondents were field dependent; (2) there was a significant relationship between field dependent-field independent cognitive style and gender; (3) Field independent students had a higher mean achievement in sciences than the field dependent students while field dependent students had a higher mean achievement in arts than the field independent students; (4) there was a significant relationship between field dependent-field independent cognitive styles and career choice of the students.

Siddiqui Fakeha Salahuddin (2015) made a study of cognitive style of B.Ed. college students of science stream with respect to gender and locality. It has reveals that there is significant difference between male and female B.Ed. college students of science stream in their systematic and intuitive cognitive styles. Also, it has found that there is no significant difference between rural and urban B.Ed. college students in their cognitive style.

Krishna Mohan (2015) conducted a study on cognitive styles of student teachers in relation to their social and emotional intelligence. The study results showed that indicates systematic style wise distribution of the Student Teachers. Out of the total of 600 Student Teachers, 163 Student Teachers were having low systematic style, 297 Student Teachers were having moderate systematic style. Also, 140 Student Teachers were having low Intuitive style, 339 Student Teachers were having moderate Intuitive style, 121 Student Intuitive style. Therefore, it may be inferred that, the Intuitive style among Student Teachers with urban locality appear to be better than Student Teachers with rural locality and it was statistically significant. However, based on the mean scores, it may be said that female Student Teachers seem to be better than male Student Teachers in Systematic Style. However, male Student Teachers seem to be better than female Student Teachers in Intuitive Style. There appears to be positive and moderate association between Systematic Style and there appears to be positive and significant association between Cognitive styles and all dimensions of Social Intelligence and also between Cognitive Styles and Emotional Intelligence.

Prakash (2013) studied cognitive styles using the Cognitive Style Inventory. In this study of 300 rural senior students selected randomly, the results revealed that the difference between the male and the female undergraduate students on systematic cognitive style as well as on intuitive cognitive style was insignificant.

Maria Saroja and Amalraj (2012) conducted a study on relationship between cognitive style and academic achievement of prospective teachers of biological science. Survey method was used in this study. This study was selected samples consist of 500 perspective teachers of biological science studying in college of education. The cognitive style Inventory (CSI) developed by Praveen Kumar Jha (2001) has been used for collection data. This study found that there is significant difference between male and female prospective

teachers and the results showed that there is significant difference between women and co-education college biological science prospective teachers and also the research shows that there is significant relationship between cognitive style and academic achievement of prospective teachers.

Rezaeian (2012) studied the possible relationship between field dependent independent cognitive style and foreign language proficiency considering some other variables as sex and age in Iranian language learners. The research sample included 148 students studying at Level Ten at the Iran Language Institute. The other 146 students including 68 males and 78 females were university students at Shiraz University. The ILI students were at the age cohort of 15-17 years, and university students were at the age cohort of 22-26years. They were given the Group Embedded Figure Test to determine the cognitive style, and Oxford Placement Test to measure the proficiency of the students. The results indicated that field dependence-independence was a significant factor affecting the performance of the students on the proficiency test. Furthermore, age and sex were found to affect the degree of field dependence-independence in Iranian language learners.

Antony Raj and Amalraj (2011) conducted a study on cognitive style and academic achievement of outgoing undergraduate history students. The study results showed that the majority of outgoing undergraduate history students has moderate level of systematic style, intuitive style and cognitive styles. Also, that there is no significant difference between male and female outgoing undergraduate students and the study revealed that there is no significant difference between rural and urban outgoing undergraduate students and there is no significant difference between autonomous and non-autonomous college outgoing undergraduate history students in their cognitive style. Moreover, shows that there is significant relation between cognitive styles and academic achievement of undergraduate history students.

Basu Sarah (2010) made a study on the cognitive development of prospective teachers at elementary and secondary level. The study revealed that majority of the prospective elementary and secondary teachers function at the formal operational level of cognitive development of the prospective elementary and secondary school teacher. Also there is no significant differences between male and female came to light when the levels of cognitive development of male and female prospective elementary and secondary school teachers were compared.

Rangaiah, Mewa and Gadheri (2009) studied the cognitive styles among children and adults in urban and tribal contexts. Story Pictorial Embedded Figure Test (SPEFT) was employed to assess the cognitive styles. The sample consisted of 70 adults and 30 children in each group. The results showed that the urban sample were psychologically more differentiated compared to tribes; urban sample had taken more response scores and less time to complete the test than the rural tribal sample. Tribal children were found to be quicker than tribal adults in completing the test. Urban children were less differentiated psychologically compared to the adults in urban context. However, urban children were psychologically more differentiated compared to tribal children.

Theen and Melissa (2008) investigated the impact of gender, ethnicity and cognitive styles on achievement of students in general paper. The sample comprised of 152 upper six students (60 boys and 92 girls). The GEFT test was used to measure students' cognitive styles. The results obtained showed that 69 (45.39%) students have field-dependent cognitive style and 83 (54.61%) students have field-independent cognitive

style. Further, the girls' achievement was significantly higher than that of boys. Also there were positive correlation between students' cognitive style and achievement in general paper.

Balkis and Isiker (2005) studied the relationship between thinking styles and personality types on a sample of 367 third-year students at Turkish university studying variety of disciplines. The participants responded to both the Thinking Styles Inventory and the Self-Directed Search scale. The obtained results indicated that there were significant positive relationships between thinking styles and personality types. Analysis of t-tests indicated that there were meaningful statistical relationships between thinking styles, gender differences and fields of study for all participants. It was also revealed that Social Science students utilized more conservative styles of thinking, compared to students in other major disciplines.

SIGNIFICANCE OF THE STUDY

Cognitive style refers to the preferred way individual processes information. It describes a person's typical mode of thinking, remembering or problem solving. Cognition is considered as part of conscious perceiving, learning and thinking by cognitive psychologists. There are different cognitive learning styles for each person. Each of us have our own styles of learning and thinking. Knowledge of these similarities and differences is crucial in education. While accepting that students will interact with, and deal with, curricular learning experiences in their own individual manner, curriculum is often based upon understanding of the shared elements of the learning processes. One important strategy is to address the instructional implications for cognitive learning styles. The study may provide some information for curriculum designers and classroom teachers in order to utilize relevant approaches to enhance meaningful cognitive styles. Therefore, cognitive styles are needed for every student and teacher. The present study is attempt to find out the differences in cognitive styles of gender, medium of instruction, locality and types of school management in B.Ed. trainees and such type of study has conducted in Chennai District in Tamil Nadu.

OBJECTIVE OF THE STUDY

Following objectives were framed in this study:

- To find out if there is any significant difference in cognitive styles among B.Ed. trainees with regard to gender, medium of instruction, locality and types of management

HYPOTHESES OF THE STUDY

Following hypotheses were tested in this study:

- There is no significant difference between the male and female B.Ed. trainees in their cognitive styles.
- There is no significant difference between the Tamil and English B.Ed. trainees in their cognitive styles.
- There is no significant difference among the B.Ed. trainees studying in the different locality of college in their cognitive styles.
- There is no significant difference among the B.Ed. trainees studying in the different types of management of college in their cognitive styles.

METHODOLOGY

In order to collect the data survey method under descriptive method of research was used. All the trainees of B.Ed. colleges of Chennai district constituted the population for the study. The sample of the study consisted of 1200 B.Ed. trainees of the Chennai district. The investigator employed the survey method in the present study. This method involves collecting data in order to test the null hypothesis concerning the current status of the cognitive styles of the B.Ed. trainees. **Tool Used:** For the collection of necessary information for this study, investigators used cognitive style inventory developed and standardized by Dr. Praveen Kumar Jha (2001). **Data analysis:** Differences between two groups in the mean scores of variables are studied using 't' test and P value of the statistical techniques are used to verify the hypotheses formulated for this study.

ANALYSIS AND INTERPRETATION OF DATA

Null Hypotheses - 1

There is no significant difference between the male and female B.Ed. trainees in their cognitive styles.

The cognitive styles scores male and female B.Ed. trainee were analyzed and the details are given in table 1

Table 1

Significant difference between male and female B.Ed. trainees with respect to their Cognitive Styles

Cognitive Styles	Gender				t values	P Values
	Male (N=600)		Female (N=600)			
	Mean	SD	Mean	SD		
Systematic	56.91	8.56	57.06	7.94	0.332	0.740
Intuitive	56.32	8.89	56.58	8.29	0.514	0.607
Overall Cognitive Styles	113.23	12.29	113.64	11.70	0.597	0.551

Note: 1. ** denotes significant at 1% level
2. * denotes significant at 5% level

Since P value is greater than 0.05, null hypothesis is accepted at 5% level with respect to Systematic, Intuitive and Overall Cognitive Styles. Hence, there is no significant difference between male and female B.Ed. trainees with respect to Systematic, Intuitive and Overall Cognitive Styles. It may be due to the fact that the male and female B.Ed. trainee there is no difference cognitive and systematic, hard work and dedication.

Null Hypotheses - 2

There is no significant difference between Tamil and English medium B.Ed. trainees in their cognitive styles.

The cognitive styles scores of Tamil and English medium B.Ed. trainees were analysed and the details are given in table 2

Table 2
Significant difference between Tamil and English medium B.Ed. trainees with respect to their Cognitive Styles

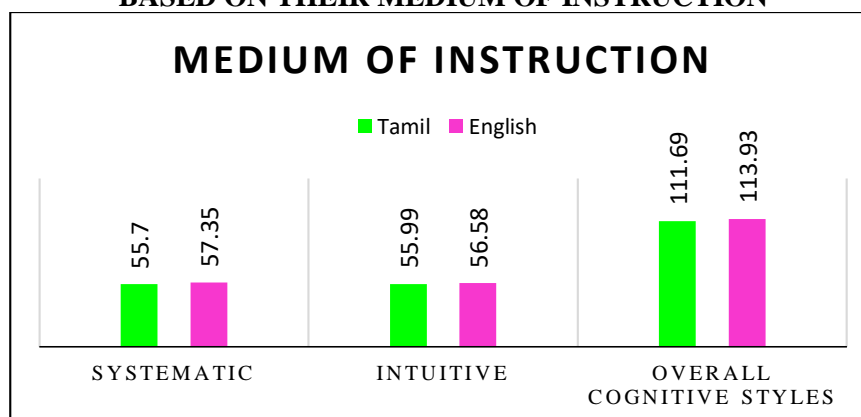
Cognitive Styles	Medium of Instruction				t values	P Values
	Tamil (N=257)		English (N=943)			
	Mean	SD	Mean	SD		
Systematic	55.70	8.74	57.35	8.08	2.879	0.004*
Intuitive	55.99	10.05	56.58	8.13	0.978	0.328
Overall Cognitive Styles	111.69	14.26	113.93	11.23	2.682	0.007*

Note : 1. ** denotes significant at 1% level

2. * denotes significant at 5% level

Since P value is less than 0.05, the null hypothesis is rejected at 5% level with respect to Systematic and Overall Cognitive Styles. Hence, there is significant difference between Tamil medium and English medium B.Ed. trainee with respect to Systematic and Overall Cognitive Styles. Based on mean score the English medium B.Ed. trainee having higher level of Overall Cognitive Styles as compared to the Tamil medium B.Ed. trainee. It may be due to the fact in the English medium B.Ed. trainee, the management give lot of chances to develop linguistic, creative thinking opportunity and understanding language skills for the B.Ed. trainee. Since P value is greater than 0.05, the null hypothesis is accepted at 5% level with respect to Intuitive. Hence, there is no significant difference between Tamil medium and English medium B.Ed. trainee with respect to Intuitive.

FIGURE 2
MEAN DIFFERENCE BETWEEN THE B.ED. TRAINEE WITH RESPECT TO COGNITIVE STYLES BASED ON THEIR MEDIUM OF INSTRUCTION



Null Hypotheses - 3

There is no significant difference among the B.Ed. trainees studying in the different Locality of college in their cognitive styles.

The P values has been applied to find out whether there is any significant difference among the B.Ed. trainees studying in the different Locality of college in their cognitive styles and the details are given in table 3

Table 3
ANOVA for judging the significant difference among the B.Ed. trainees studying in the different Locality of college in their Cognitive Styles

Cognitive Styles	Locality						F Ratios	P Values
	Rural (371)		Urban (764)		Semi-Urban (65)			
	Mean	SD	Mean	SD	Mean	SD		
Systematic	57.63	8.53	56.63	8.03	57.51	9.07	1.965	0.141
Intuitive	57.32 ^{ab}	8.74	55.90 ^a	8.44	57.94 ^b	9.02	4.457	0.012*
Overall Cognitive Styles	114.94^{ab}	12.32	112.53^a	11.65	115.45^b	13.21	6.078	0.002*

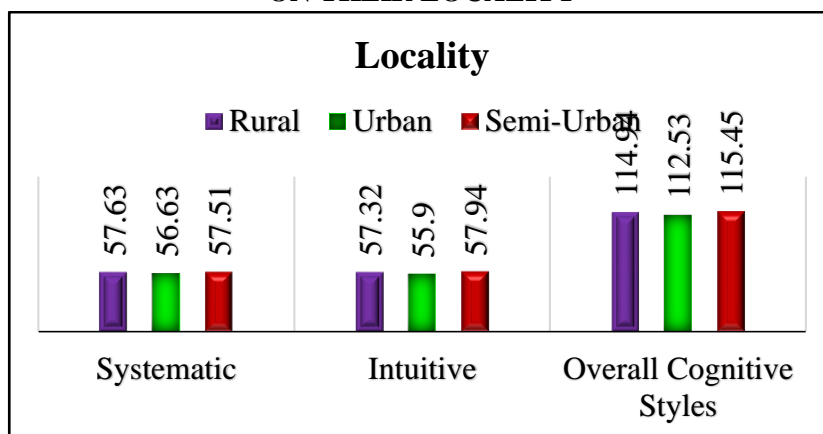
Note: 1. ** denotes significant at 1% level
2. * denotes significant at 5% level
3. Different alphabet among Type of School denotes significant at 5% level using Duncan Multiple Range Test (DMRT)

Since P value is less than 0.05, null hypothesis is rejected at 5% level with respect to Intuitive and Overall Cognitive Styles. Hence, there is significant difference among the different Locality of college B.Ed. trainees with respect to Intuitive and Overall Cognitive Styles. Based on Duncan Multiple Range Test (DMRT), in urban Locality B.Ed. trainee are significantly differed with semi urban Locality B.Ed. trainee at 5% level, but rural Locality B.Ed. trainee there is no significant difference between urban and semi urban Locality B.Ed. trainee in Intuitive and Overall Cognitive Styles. Based on mean score, the semi urban B.Ed. trainee having higher level of overall cognitive styles as compared to the urban and rural B.Ed. trainee. It may be due to the fact that the semi urban B.Ed. trainee always works with proper plan, hard work and dedication but urban and rural B.Ed. trainee do not have this.

Since P value is greater than 0.05, null hypothesis is accepted at 5% level with respect to Systematic. Hence, there is no significant difference among the different Locality of college B.Ed. trainees with respect to Systematic.

FIGURE 3

MEAN DIFFERENCE AMONG THE B.ED. TRAINEE WITH RESPECT TO COGNITIVE STYLES BASED ON THEIR LOCALITY



Null Hypotheses - 4

There is no significant difference among the B.Ed. trainees studying in the different types of management of college in their cognitive styles.

The P values has been applied to find out whether there is any significant difference among the B.Ed. trainees studying in the different types of management of college in their cognitive styles and the details are given in table 4

Table 4

ANOVA for judging the significant difference among the B.Ed. trainees studying in the different types of management of college in their Cognitive Styles

Cognitive Styles	Types of Management						F Ratios	P Values
	Government (400)		Aided (400)		Self - Finance (400)			
	Mean	SD	Mean	SD	Mean	SD		
Systematic	56.64	8.60	57.48	8.54	56.83	7.57	1.138	0.321
Intuitive	56.41	8.77	57.14	8.69	55.80	8.28	2.456	0.086
Overall Cognitive Styles	113.04^{ab}	12.23	114.62^b	12.49	112.63^a	11.17	3.077	0.046*

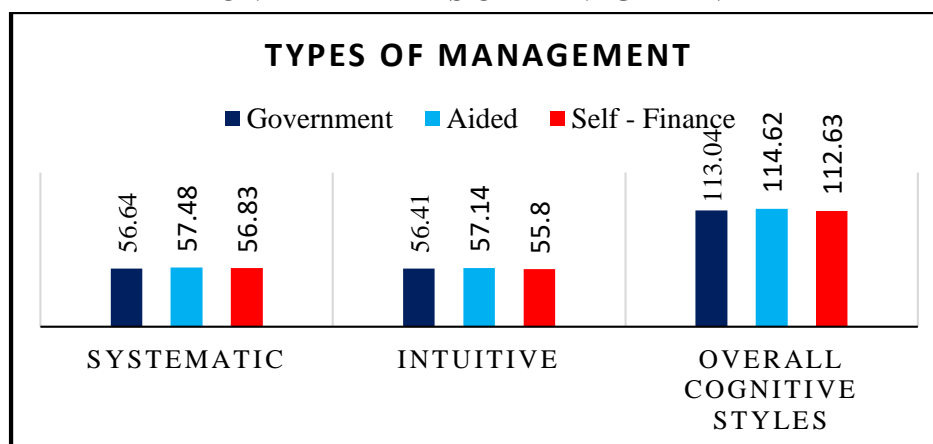
Note: 1. ** denotes significant at 1% level
 2. * denotes significant at 5% level
 3. Different alphabet among Type of School denotes significant at 5% level using Duncan Multiple Range Test (DMRT)

Since P value is less than 0.05, null hypothesis is rejected at 5% level with respect to Overall Cognitive Styles. Hence, there is significant difference among the B.Ed. trainees studying in the different types of management with respect to Overall Cognitive Styles. Based on Duncan Multiple Range Test (DMRT), in self-finance college B.Ed. trainee are significant differed with Government and aided college B.Ed. trainee at 5% level, but Government college B.Ed. trainee there no significant difference between self-finance and aided college B.Ed. trainee in their Overall Cognitive Styles. Based on mean score, the aided college B.Ed. trainee having higher level of overall cognitive styles as compared to the government and private B.Ed. trainee. This is due to the fact that the aided college B.Ed. trainee are given opportunities and activities to develop the skills of Critical thinking, Decision making, cognitive styles and systematic etc.,

Since P value is greater than 0.05, null hypothesis is accepted at 5% level with respect to Systematic and Intuitive. Hence, there is no significant difference among the different types of management of college B.Ed. trainees with respect to Systematic and Intuitive.

FIGURE 4

MEAN DIFFERENCE AMONG THE B.ED. TRAINEE WITH RESPECT TO COGNITIVE STYLES BASED ON THEIR TYPES OF MANAGEMENT



FINDINGS AND DISCUSSION OF THE STUDY

- There is no significant difference between male and female B.Ed. trainees with respect to Systematic, Intuitive and Overall Cognitive Styles. It may be due to the fact that the male and female B.Ed. trainee there is no difference cognitive and systematic, hard work and dedication. The result of the present study was supported by the findings of Antony Raj and Amalraj (2011), Basu Sarah (2010). The present finding is contradictory to the studies carried out by Siddiqui Fakeha Salahuddin (2015), Philip, et al., (2017), Bruno (2015), Rezaeian (2012), Theen and Melissa (2008), Balkis and Isiker (2005), Balasubramaniam and Rajaguru (2016), Prakash (2013), Maria Saroja and Amalraj (2012), Mishra, Tauwab and Gupta (2000).
- There is significant difference between Tamil medium and English medium B.Ed. trainee with respect to Systematic and Overall Cognitive Styles. It may be due to the fact in the Tamil medium and English medium B.Ed. trainee, the management give lot of chances to develop linguistic, creative thinking, equal opportunity and understanding language skills for the B.Ed. trainee.
- There is significant difference among the different Locality of college B.Ed. trainees with respect to Intuitive and Overall Cognitive Styles. It is due to the fact that the semi urban B.Ed. trainee having higher level of overall cognitive styles as compared to the urban and rural B.Ed. trainee. Observed that the urban Locality B.Ed. trainee are significantly differed with semi urban Locality B.Ed. trainee. It may be due to the fact that the semi urban B.Ed. trainee always works with proper plan, hard work and dedication but urban and rural B.Ed. trainee do not have this. The result of the present study was supported by the findings of Rangaiah, Mewa and Gadheri (2009). The present finding is contradictory to the studies carried out by Siddiqui Fakeha Salahuddin (2015), Balasubramaniam and Rajaguru (2016), Krishna Mohan (2015), Antony Raj and Amalraj (2011).
- There is significant difference among the B.Ed. trainees studying in the different types of college with respect to Overall Cognitive Styles. It is due to the fact that the aided college B.Ed. trainee having higher level of overall cognitive styles as compared to the government and private B.Ed.

trainee. Observed that the self-finance college B.Ed. trainee is significant differed with Government and aided college B.Ed. trainee. This is due to the fact that the all colleges B.Ed. trainee are given lot of practices or activities to develop the skills of critical thinking, creativity, time management, problem solving etc.,.

SUGGESTIONS FOR FURTHER RESEARCH

- Similar study can be conducted with predominant one group of gender is encouraged.
- Similar study can be conducted taking into account other variables and at primary and higher levels of education.
- A variety of learning content presentation methods addressing learners different cognitive styles should be employed (i.e, visuals, video, audio, interactive exercises etc.) with well-guided instructions and scaffolding activities.
- Similar study can be analyzed by different statistical techniques for verifying the results.

CONCLUSION

The study aimed to know the cognitive styles among the B.Ed. trainees and how it is related with gender, medium of instruction, locality, types of school management. 1200 B.Ed. trainees have been selected randomly from Chennai district of Tamilnadu. After collecting the data, they were analysed using statistical techniques such as mean values, standard deviation, t-test. The result reveals that there is no significant difference between male and female B.Ed. students with respect to Systematic, Intuitive and Overall Cognitive styles. And there is significant difference between Tamil and English B.Ed. trainees with respect to Systematic cognitive style, and Overall Cognitive styles. Also, there is significant difference among the different Locality of college B.Ed. trainees with respect to Intuitive and Overall Cognitive Styles. Moreover, there is significant difference among the B.Ed. trainees studying in the different types of management with respect to Overall Cognitive Styles.

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