International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

STATISTICAL ANALYSIS OF THINKING STYLES OF TEACHER EDUCATORS

S.V.Saji Rekha[1], D.Beula Shiny[2]

[1]Lecturer, Department of Tamil, Sun College of Education, Erachakulam, Kanyakumari,Tamil Nadu
[2]Assistant Professor, Department of Psychology, Sun College of Education, Erachakulam, Kanyakumari,Tamil Nadu

Abstract

Thinking style is the way one acquire knowledge, organize thoughts from views and opinion apply human values to solve problems and make decisions. Teacher educators along with teaching competency and thinking style create quality teachers.

In this paper, level of thinking styles of teacher educators were analyzed with respect to their gender, marital status, habit of reading newspaper, computer literacy, qualified degree, age, teaching experience, salary and number of publications. The data was collected through statistical tools and techniques from various B.Ed colleges in Kanyakumari District, Tamil Nadu, India. Results were compared with different thinking styles and finally recommendations were given.

Keywords: *Thinking style, Teacher educators, statistical technique, SATSS*

1. Introduction

Thinking style is the characteristic way of processing information. It's the way of acquiring knowledge, organizing thoughts, forming views and opinions, applying values, planning, making decisions, solving problems and expressing one to others.

In the present study thinking styles refers to the sum of scores obtained by adding the scores of six dimensions of the tool namely, ''Sherlin Amaladoss Thinking Style Scale' (SATSS).

2. Literature review

This review involves the systematic identification, location and analysis of documents containing related to the research problem.

Harish G.C (2011) investigated a study on Integrated thinking Styles on Achievement in Mathematics School Students and the findings of the study revealed that, there was a significant difference between the mean scores of group and gender in their post test achievement with respect to total integrated Thinking styles.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Celine, Pereira and Sibu (2010) demonstrated a study on Reflective thinking Strategy and concluded that achievement of the secondary school students taught through reflective thinking strategy of teaching was higher than that of pupils taught conventional method of direct instruction.

Gafoor K and Abdul (2010) implemented a study on Relationship of Thinking Styles with Physics Academic Achievement among Higher Secondary Students of Kerala that whether thinking styles that favour short-term and long term achievement in science were different.

Gafoor, Abdul and Velayudhan (2010) presented a study on influence of Congruence between thinking Styles of Student Teachers and Educators on Student Teachers Course Satisfaction and tried to find out the effect of thinking styles and congruence on the selected back ground variables of the study.

Celestine, Wilfeed and Annaraja (2008) demonstrated a study on Effectiveness of Teaching Thinking styles on Achievement in Mathematics of IX Standard Students to find out the significant difference between pre-test and post-test scores of control group and experimental group and the significant relationship between achievement in mathematics and thinking styles of the experimental group students.

Regis, Vengo and Annaraja (2008) implemented a study on Thinking Styles and Cerebral Dominance of Biology Students at Higher Secondary Level to find out the level of thinking style of higher secondary students in biology with reference to sex and the relationship between thinking styles and cerebral dominance.

Abdul Gafoor and Lavanya (2007) presented a study on Interaction of Thinking Styles and Intelligence Effect on Science Achievement to find out whether there was any significant difference in the interaction effect of thinking styles and intelligence on science achievement of higher secondary school students.

Mahendra Reddy Sarsani (2006) implemented a study on a Model for the correlates of Students Creative Thinking to find out the correlates of students creative thinking.

Ben, Suneeth and Alphonse Raj (2004) implemented a study on Relationship between Mind Style and Aesthetic Attitude of Teacher Educators to find out the relationship between sex, age and mind style dimensions of teacher educators.

Gyanani and Saxeena (2004) demonstrated a study on Frustration Reaction Patterns as a Function of Gender, Cognitive Style and Conformity at Different Age Levels to find out the relationship between frustration reaction and predictive variables such as gender, cognitive style and conformity at three stages of cognitive development.

3. Methodology

After analyzing the characteristics of the study, the investigator has taken a survey regarding thinking styles of teacher educator from various B.Ed colleges. The collected data was analyzed with statistical technique. The datasheet includes general information about the respondents regarding name of the gender, age, marital status, qualified degree, teaching experience, newspaper reading, computer literacy, and number of publications.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Thinking Styles Scale consisted of 75 items of thinking styles and were categorized into six Dimensions namely, Idiosyncratic Thinking Style, Flexible thinking Style, Scientific Thinking Style, Consequent Thinking Style, Creative Thinking Style Confused Thinking Style.

4. Results and Discussions

The data was collected through various tools and techniques for statistical techniques.

Hypothesis: 1

Table 1.1
Level of thinking styles and Its Dimensions

Dimensions	Low		Average		High	
	N	%	N	%	N	%
Idiosyncratic Thinking Style	41	27.3	58	38.7	51	34
Flexible Thinking Style	42	28.0	71	47.3	37	24.7
Scientific Thinking Style	41	27.3	68	45.3	41	27.3
Consequent Thinking Style	38	25.3	68	45.3	44	29.3
Creative Thinking Style	38	25.3	70	46.7	42	28.0
Confused Thinking Style	40	26.7	71	47.3	39	26

It is observed from the above table that 38.7 %, 47.3%, 45.3%, 45.3%, 46.7%, 47.3 % of teacher educators are average level of thinking styles in various dimensions.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 2

Table 1.2
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Gender

Dimensions	Male N=46		Female N=104		t value	p value	Remarks
	Mean	S.D	Mean	S.D			
Idiosyncratic Thinking Style	60.500	5.5847	59.183	5.667	1.319	0.189	N.S
Flexible Thinking Style	53.70	5.573	54.01	6.640	0.280	0.780	N.S
Scientific Thinking Style	47.02	5.791	49.03	6.140	2.256	0.026	S
Consequent Thinking Style	44.89	6.664	47.14	5.289	2.216	0.28	N.S
Creative Thinking Style	52.11	6.631	53.30	7.149	0.960	0.339	N.S
Confused Thinking Style	29.09	10.082	31.68	9.601	1.504	0.135	N.S
Thinking Styles	287.30	27.483	29.75	28.374	1.496	0.137	N.S

It is observed from the above table that there is no significant difference between thinking styles and its various dimensions such as idiosyncratic thinking style, flexible thinking style, consequent thinking style, creative thinking style, confused thinking style of teacher educators with respect to their gender, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But there is significant difference between Scientific Thinking Style. Since the 'p' value is less than 0.05. Hence it is understood that female teacher educators (49.43) are better than male teacher educators (47.02).

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 3

Table 1.3
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Marital Status

Dimensions	Married N=141		Un married N=9		t value	p value	Remarks
	Mean	S.D	Mean	S.D			
Idiosyncratic Thinking Style	59.56	5.7883	59.889	3.0596	0.165	0.86	N.S
Flexible Thinking Style	53.84	6.429	55.00	4.243	0.531	0.596	N.S
Scientific Thinking Style	48.84	6.071	46.33	6.745	0.195	0.234	N.S
Consequent Thinking Style	46.55	5.785	44.89	6.451	0.831	0.407	N.S
Creative Thinking Style	52.79	7.120	55.11	4.256	0.963	0.337	N.S
Confused Thinking Style	30.74	9.830	33.11	9.400	0.702	0.484	N.S
Thinking Styles	294.33	25.154	292.34	28.484	0.204	0.839	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions with respective to their marital status, since 'p' value is greater than 0.05. Hence the null hypothesis is accepted.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 4

Table 1.4

Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Habit of Newspaper Reading

Dimensions	Yes N=146		No N=4		t value	p value	Remarks
	Mean	S.D	Mean	S.D			
Idiosyncratic Thinking Style	59.63	5.72	57.77	1..0450	0.657	0.512	N.S
Flexible Thinking Style	54.02	6.31	50.00	5.88	1.259	0.210	N.S
Scientific Thinking Style	48.80	6.07	44.50	7	1.394	0.165	N.S
Consequent Thinking Style	46.52	5.85	43.75	3.40	0.942	0.348	N.S
Creative Thinking Style	53.0479	6.93848	48.7500	8.84590	1.215	0.226	N.S
Confused Thinking Style	31.1233	9.79788	22.2500	4.34933	1.802	0.74	N.S
Thinking Styles	293.16	28.160	267.300	18.565	1.844	0.067	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions with respective to Their Habit of Newspaper Reading, since 'p' value is greater than 0.05. Hence the null hypothesis is accepted.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 5

Table 1.5

Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Computer Literacy

Dimensions	Yes N=134		No N=16		t value	p value	Remarks
	Mean	S.D	Mean	S.D			
Idiosyncratic Thinking Style	59.797	5.5865	57.875	6.2915	1.283	0.202	N.S
Flexible Thinking Style	53.98	6.457	53.38	5.377	0.358	0.721	N.S
Scientific Thinking Style	48.59	6.089	49.31	6.620	0.446	0.656	N.S
Consequent Thinking Style	46.19	5.762	57.875	6.2915	1.504	0.135	N.S
Creative Thinking Style	53.98	6.457	53.75	6.424	0.517	0.606	N.S
Confused Thinking Style	35.30	10.132	30.13	4.440	1.878	0.042	S
Thinking Styles	291.63	28.492	298.94	25.887	1.005	0.317	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions such as idiosyncratic thinking style, flexible thinking style, consequent thinking style, creative thinking style of teacher educators with respect to their computer literacy, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But, there is significant difference between Thinking styles and its dimensions of confused thinking style, since the `p' value is less than 0.05. By

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

comparing the mean scores it is understood that teacher educators those who have computer literacy are better than teacher educators those who have not computer literacy in confused thinking style.

Hypothesis: 6

Table 1.6
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Qualified Degree

Dimensions	Source	Sum of square	df	Mean square	Calculated 'F' value	P value	Remarks
Idiosyncratic Thinking Style	Between	221.120	3	73.707	2.368	0.073	N.S
	Within	4545.253	146	31.132			
Flexible Thinking Style	Between	155.724	3	51.908	1.310	0.02*	S
	Within	5786.150	146	39.631			
Scientific Thinking Style	Between	116.696	3	38.8991.40	1.040	0.03*	S
	Within	5461.197	146	37.405			
Consequent Thinking Style	Between	222.859	3	74.286	2.251	0.085	N.S
	Within	4818.314	146	33.002			
Creative Thinking Style	Between	486.586	3	162.195	3.482	0.078	N.S
	Within	6800.748	146	46.580			
Confused Thinking Style	Between	1063.432	3	354.477	3.915	0.060	N.S
	Within	13219.641	146	90.545			
Thinking Styles	Between	9348.561	3	3116.187	3.161	0.081	N.S
	Within	109336.772	146	748.882			

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

It is observed from the above table that there is no significant difference between thinking styles and its dimensions such as idiosyncratic thinking style, consequent thinking style, creative thinking style, confused thinking style of teacher educators with respect to with respect to their qualified degree, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But, there is significant difference between thinking styles and its dimensions of flexibility thinking style and Scientific Thinking Style since the `p' value is less than 0.05.

Hypothesis: 7

Table 1.7
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their age

Dimensions	df	Calculated $\chi 2$ Value	p value	Remarks
Idiosyncratic Thinking Style	4	4.149	0.386	N.S
Flexible Thinking Style		7.632	0.106	N.S
Scientific Thinking Style		5.066	0.281	N.S
Consequent Thinking Style		1.365	0.850	N.S
Creative Thinking Style		6.804	0.147	N.S
Confused Thinking Style		6.461	0.167	N.S
Thinking Styles		6.695	0.153	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions with respective to their age, since ‘p’ value is greater than 0.05. Hence the null hypothesis is accepted.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 8

Table 1.8

Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their teaching Experience

Dimensions	df	Calculated $\chi 2$ Value	P value	Remarks
Idiosyncratic Thinking Style	4	12.603	0.01*	S
Flexible Thinking Style		4.559	0.336	N.S
Scientific Thinking Style		1.778	0.776	N.S
Consequent Thinking Style		4.167	0.384	N.S
Creative Thinking Style		0.546	0.969	N.S
Confused Thinking Style		5.017	0.286	N.S
Thinking Styles		1.897	0.755	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions such flexible thinking style, consequent thinking style, creative thinking style, confused thinking style of teacher educators with respect to with respect to teaching experience, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But, there is significant difference between Thinking styles and its dimensions of idiosyncratic thinking style since the `p' value is less than 0.05.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 9

Table 1.9
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Salary

Dimensions	df	Calculated $\chi 2$ Value	p value	Remarks
Idiosyncratic Thinking Style	4	3.142	0.534	N.S
Flexible Thinking Style		0.462	0.977	N.S
Scientific Thinking Style		1.808	0.771	N.S
Consequent Thinking Style		5.211	0.266	N.S
Creative Thinking Style		2.410	0.661	N.S
Confused Thinking Style		12.963	0.01*	S
Thinking Styles		3.337	0.503	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions such Idiosyncratic Thinking Style, flexible thinking style, consequent thinking style, creative thinking style, of teacher educators with respect to with respect to their salary, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But, there is significant difference between thinking styles and its dimensions of confused thinking style since the `p' value is less than 0.05.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

Hypothesis: 10

Table 1.10
Difference between Thinking Styles and Its Dimensions of Teacher Educators with respect to their Number of publications

Dimensions	df	Calculated $\chi 2$ Value	p value	Remarks
Idiosyncratic Thinking Style	4	10.508	0.105	N.S
Flexible Thinking Style		4.811	0.568	N.S
Scientific Thinking Style		2.659	0.850	N.S
Consequent Thinking Style		17.806	0.00*	N.S
Creative Thinking Style		8.276	0.219	N.S
Confused Thinking Style		13.346	0.03*	S
Thinking Styles		7.476	0.279	N.S

It is observed from the above table that there is no significant difference between thinking styles and its dimensions such idiosyncratic thinking Style, flexible thinking style, , creative thinking style, of teacher educators with respect to with respect to their number of publications, since the `p' value is greater than 0.05. Hence the null hypothesis is accepted. But, there is significant difference between thinking styles and its dimensions of consequent thinking style and confused thinking style since the `p' value is less than 0.05.

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

5. Conclusions and Recommendations

In this paper, a survey was taken to collect the data, information regarding thinking styles in various dimensions with respect to their gender, marital status, habit of reading newspaper, computer literacy, qualified degree, age, teaching experience, salary and number of publications. The survey includes 150 teacher educators from Kanyakumari district.

1. a) 38.8% of teacher educators have average level of thinking styles and its dimensions of idiosyncratic thinking style.
   b) 47.3% of teacher educators have average level of thinking styles and its dimensions of flexible thinking style.
   c) 45.3% of teacher educators have average level of thinking styles and its dimensions of idiosyncratic thinking style.
   d) 45.3% of teacher educators have average level of thinking styles and its dimensions of consequent thinking style.
   e) 46.7% of teacher educators have average level of thinking styles and its dimensions of creative thinking style.
   f) 47.3% of teacher educators have average level of thinking styles and its dimensions of confused thinking style respectively.
2. There is significant difference between male and female teacher educators in their thinking styles and its dimension of scientific thinking style, By comparing the mean scores it is understood that female teacher educators (49.43) are better than male teacher educators (47.02) in their thinking Style and its dimensions of Scientific thinking Style.
3. There is no significant difference between thinking styles and its dimensions of teacher educators with respect to their marital status
4. There is no significant difference between thinking Styles and its dimensions of teacher educators with respect to their habit of newspaper reading
5. There is significant difference between thinking styles and its dimensions of idiosyncratic thinking style, consequent thinking style, confused thinking style. By comparing the mean scores it is understood that teacher educators those who have computer literacy are better than teacher educators those who have not computer literacy in idiosyncratic thinking style, consequent thinking style, confused thinking style.
6. There is significant difference in the thinking styles and its dimensions of teacher educators with respect to their qualifying degree.
7. There is no significant difference between thinking styles and its dimensions of teacher educators and their age.
8. There is no significant difference between thinking styles and its dimensions of teacher educators and their teaching experience.
9. There is significant difference between thinking styles and its dimensions of confused thinking, style of teacher educators and their salary.
10. There is significant difference between thinking styles and its dimensions of idiosyncratic thinking style, flexible winking style, scientific thinking style, consequent thinking style, creative thinking style, confused thinking style of teacher educators and their number of publications.

The following recommendations were given for the teacher educators regarding thinking styles,

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 3, No. 1, March - May, 2018
Pages 1-14 | Cosmos Impact Factor (Germany): 5.195
Received: 01.03.2018 Published : 05.03.2018

- Develop a healthy friendship with the fellow members, which may contribute much professional and personal wellbeing with interpersonal skills and desired thinking styles.
- Usage of Internet in a moderate range and habit of reading newspaper are advocated.
- Introduce thinking styles development and thinking styles programmes in teacher training courses.
- Conduct in-service training programme for teacher educators to improve their thinking styles
- Special training programmes should be organized to improve the thinking styles of teacher educators.

References

1. Harish (2011), "Integrated critical thinking skills on achievement in mathematics of secondary school students", Edutracks, vol .10, no.8, pp 28-30.
2. Celestine, Pereira and Sibu Netto (2010), "Reflective thinking strategy: a noval practice for teaching and learning", Research and Reflections on Education, vol. 5, no.2, pp 8-13.
3. Gafoor K and Abdul (2010), "Relationship of Thinking Styles with Physics Academic Achievement among Higher Secondary Students of Kerala", Indian Educational review, vol .46, no.1, pp 50-63.
4. Gafoor, Abdul and Velayudhan (2010), "Influence of Congruence between thinking Styles of Student Teachers and Educators on Student Teachers Course Satisfaction", Indian Journal of teacher Education, vol.7, no.1, pp. 25-41.
5. Celestine, Wilfeed and Annaraja (2008), "Effectiveness of teaching thinking skills on achievement in mathematics of IX standard students", Compendium of on Educational Research (2000-2010).
6. Regis, Vengo and Annaraja (2008), "Thinking styles and cerebral & dominance biology students at higher secondary level", Edutracks, vol.11, no.4.
7. Abdul Gafoor and Lavanya (2007), "Interaction of Thinking Styles and Intelligence Effect on Science Achievement", International Education, vol .20, no.1, pp 50.
8. Mahendra Reddy Sarsani (2006), "Model for the correlates of students creative thinking", Edutracks, vol.6, No.2.
9. Ben, Suneeth and Alphonse Raj (2004), "Relationship between Mind Style and Aesthetic Attitude of Teacher Educators", Compendium of Educational Research, (2000-2010).
10. Gyanani and Saxeena (2004), "Frustration reaction patterns as a function of gender cognitive, style and conformity at different reer choices for high achieving students", Edutracks, vol .49, no.2.