Research Article

Thinking Styles and Academic Achievement of XI Standard Students

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ABSTRACT

The main objective of the study is to find out the relationship between thinking styles and academic achievement of XI standard students. Thinking Styles Inventory constructed by Sternberg (2007) was used to collect the relevant data. Marks obtained in quarterly examinations of XI standard students have been taken for estimating their academic achievement. The sample consists of 339 XI standard students of whom 177 are male and 162 are female. The data are analysed by 't' test and Karl Pearson's product moment correlation. The results indicate that there is no significant relationship between idealistic, pragmatic and analytic thinking styles and academic achievement of XI standard students. There is significant relationship between synthetic and realistic thinking styles and academic achievement of XI standard students.

Keywords: thinking styles, academic achievement, higher secondary students, cognition, learning styles

INTRODUCTION

Thinking is the cognitive process. It refers to the process and thought and refers the mind content during the continuity of that process. According to Ross (1951), 'Thinking is mental activity in its cognitive aspect or mental activity with regard to psychological aspects'. The term 'thinking' is an activity which consists essentially of a connected flow of ideas which are directed towards 8ome end or purpose. It includes the styles namely synthetic, idealistic, pragmatic, analytic and realistic.

Education is the process of human development. Intellectual or mental development is possible by improving the power of thinking. For the improvement of thinking process, the

teacher should try to understand his students and the devices for better thinking. Teaching and instructions are planned and organised for improving the power of thinking. Objectives of teaching learning and instruction, curriculum development, preparing text books and instructional material, methods and techniques of teaching, models of teaching, evaluation and diagnosis, and remedial teaching and instruction are the main devices which are being used for improving the power of thinking. Thinking process starts \vith sensation which is organized in cognition to have the perception. It is always directed towards achieving some purpose in genuine.

SIGNIFICANCE OF THE STUDY

Thinking style is a term used in cognitive psychology to describe the way individuals think, perceive and remember information. It differs from thinking ability or level, the latter being measured by aptitude tests. It is a key concept in the areas of education and management. If a pupil has thinking (cognitive) style that is similar to that of his or her teacher, the changes that the pupil will have a more positive learning experience is improved. The term achievement refers to the knowledge attained or skills developed in the school subjects usually designed by test scores or by marks assigned by students. Achievement of the students depends upon so many factors. Thinking is one of the factors. When the factor is in positive way, it will lead the students towards better achievement. Therefore the investigator wants to know the relationship between thinking styles and academic achievement of XI standard students.

OBJECTIVES

1. To find out whether there is any significant difference between male and female XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
2. To find out whether there is any significant difference between rural and urban school XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
3. To find out whether there is any significant difference between XI standard students from nuclear family and joint family in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
4. To find out whether there is any significant difference between arts group and science group XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.

5. To find out whether there is any significant difference between male and female XI standard students in their academic achievement.
6. To find out whether there is any significant difference between rural and urban school XI standard students in their academic achievement.
7. To find out whether there is any significant difference between XI standard students rom nuclear family and joint family in their academic achievement.
8. To find out whether there is any significant difference between arts group and science group XJ standard students in their academic achievement.
9. To find out whether there is any significant relationship between thinking styles and academic achievement of XI standard students.

NULL HYPOTHESES

1. There is no significant difference between male and female XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic 1hinking styles.
2. There is no significant difference between rural and urban school XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
3. There is no significant difference between XI standard students from nuclear family and joint family in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
4. There is no significant difference between arts group and science group XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
5. There is no significant difference between male and female XI standard students in their academic achievement.
6. There is no significant difference between rural and urban school XI standard students in their academic achievement.
7. There is no significant difference between XI standard students from nuclear family and joint family in their academic achievement.
8. There is no significant difference between arts group and science group XI standard students in their academic achievement.
9. There is no significant relationship between thinking styles and academic achievement of XI standard students.

METHODOLOGY

The investigator adopted survey method. The population for the present study is XI standard students studying in Thuckalay Educational District. The investigator has used stratified random sampling technique for collecting the data. The stratification has been done on the basis of sex, location of school, type of family and group of study. The sample consists of 339 XI standard students from 12 schools. Among them 177 are male and 162 are female students. Thinking styles inventory constructed by Sternberg (2007) was used for collecting the data. Marks obtained in quarterly examinations of XI standard students have been taken for estimating their academic achievement. 't' test and Karl Pearson's product moment correlation were used to analyse the data in this study.

ANALYSIS OF DATA

Table 1

Difference Between Male and Female XI Standard Students in Their Thinking Styles

Dimensions of Thinking Styles	Male (N=l 77)		Female (N=l62)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Synthetic	4.43	1.612	4.48	1.597	0.299	NS
Idealistic	3.49	1.197	3.64	1.331	1.091	NS
Pragmatic	3.71	l.419	4.02	1.550	1.894	NS
Analytic	2.87	l.378	2.68	1.331	1.298	NS
Realistic	3.49	1.771	3.19	1.665	1.641	NS

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between male and female XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.

Table 2

Difference Between Rura] and Urban School XI Standard Students in Their Thinking Styles

Dimensions of Thinking Styles	Rural (N=l58)		Urban (N=181)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Synthetic	4.04	1.480	4.82	1.621	4.629	S
Idealistic	3.50	1.353	3.62	1.180	0.855	NS

Pragmatic	3.61	1.522	4.08	1.428	2.918	S
Analytic	3.18	1.281	2.43	1.325	5.348	S
Realistic	3.66	1.603	3.07	1.785	3.252	S

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between rural and urban school XI standard students in their idealistic thinking style, but there is significant difference between rural and urban school XI standard students in their synthetic, pragmatic, analytic and realistic thinking styles. While comparing the mean scores of rural and urban school XI standard students, the urban school XI standard students are better in their synthetic and pragmatic thinking styles. While comparing the mean scores of rural and urban school XI standard students, the rural school XI standard students are better in their analytic and realistic thinking styles.

Table 3

Difference Between l XI Standard Students From Nuclear Family and Joint Family in Their Thinking Styles

Dimensions of Thinking Styles	Nuc1ear Famil y (N=158)		Joint Family (N=181)		Calcu]ated 't 'value	Remarks at 5 %]evel
	Mean	S.D	Mean	S.D		
Synthetic	4.46	1.632	4.43	1.448	0.109	NS
Idealistic	3.46	1.207	4.13	1.415	3.256	S
Pragmatic	3.87	1.439	3.79	1.747	0.307	NS
Analytic	2.79	1.326	2.70	1.526	0.427	NS
Realistic	3.42	1.733	2.94	1.646	1.919	NS

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between XI standard students from nuclear family and joint family in their synthetic, pragmatic, analytic and realistic thinking styles, but there is significant difference between XI standard students from nuclear family and joint family in their idealistic thinking style. While comparing the mean scores of XI standard students from nuclear family and joint family, the XI standard students from joint family are better in their idealistic thinking style.

Table 4

Difference Between Arts Group and Science Group School XI Standard Students in Their Thinking Styles

Dimensions of Thinking Styles	Arts (N=l23)		Science (N=216)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Synthetic	4.26	1.448	4.56	1.678	1.757	NS
Idealistic	3.76	1.363	3.45	1.192	2.053	S
Pragmatic	3.83	1.513	3.88	1.478	0.270	NS
Analytic	2.59	1.317	2.88	1.371	1.925	NS
Realistic	3.56	1.820	3.22	1.661	1.700	NS

(At 5% level of significance, the table value of 't' is J.96)

It is inferred from the above table that there is no significant difference between arts group and science group XI standard students in their synthetic, pragmatic, analytic and realistic thinking styles, but there is significant difference between arts group and science group XI standard students in their idealistic thinking style. While comparing the mean scores of arts group and science group XI standard students, the aits group XI standard students are better in their idealistic thinking style.

Table 5

Difference Between Male and Female XI Standard Students in Their Thinking Styles

Dimensions of Thinking Styles	Male (N=l 77)		Female (N=l 62)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Academic Achievement	658.20	209.131	610.54	212.535	2.078	S

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is significant difference between male and female XI standard students in their academic achievement. While comparing the mean scores of male and female XI standard students, the male XI standard students are better in their academic achievement.

Table 6

Difference Between Rural and Urban School XI Standard Students in Their Thinking Styles

Dimensions of Thinking Styles	Rural (N=158)		Urbane (N=181)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Academic Achievement	634.08	198.273	636.60	223.479	0.110	NS

It is inferred from the above table that there is no significant difference between rural and urban school XI standard students in their academic achievement.

Table 7

Difference Between I XI Standard Students From Nuclear Family and Joint Family in Their Thinking Styles

Dimensions of Thinking Styles	Nuclear Family (N=286)		Joint Family (N=53)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Academic achievement	629.77	212.209	665.94	208.907	1.155	NS

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between XI standard students from nuclearfamily and joint family in their academic achievement.

Table 8

Difference Between l XI Standard Students From Nuclear Family and Joint Family in Their Thinking Styles

Dimensions of Thinking Styles	Arts (N=l23)		Science (N=216)		Calculated 't 'value	Remarks at 5 % level
	Mean	S.D	Mean	S.D		
Academic achievement	626.14	200.237	640.71	218.388	0.623	NS

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between arts group and science group XI standard students in their academic achievement.

Table 9

Relationship Between Thinking Styles and Academic Achievement of XI Standard Students

Dimensions of Thinking Styles	Calculated 'y' value	Remarks at 5% level
Synthetic	0.127	S
Idealistic	0.039	NS
Pragmatic	0.021	NS
Analytic	0.029	NS
Realistic	0.144	S

(At 5% level of significance for 337 df the table value of 'y' is 0.098)

It is inferred from the above table that there is no significant relationship between idealistic, pragmatic and analytic thinking styles and academic achievement of XI standard students, but there is significant relationship between synthetic and realistic thinking styles and academic achievement of XI standard students.

FINDINGS

- There is no significant difference between male and female XI standard students in their synthetic, idealistic, pragmatic, analytic and realistic thinking styles.
- There is no significant difference between rural and urban school XI standard students in their idealistic thinking style, but there is significant difference between rural and urban school XI standard students in their synthetic, pragmatic, analytic and realistic thinking styles. While comparing the mean scores of rural and urban school XI standard students, the urban school XI standard students are better in their synthetic and pragmatic thinking styles. While comparing the mean scores of rural and urban school XI standard students, the rural school XI standard students are better in their analytic and realistic thinking styles.
- There is no significant difference between XI standard students from nuclear family and joint family in their synthetic, pragmatic, analytic and realistic thinking styles, but

there is significant difference between XI standard students from nuclear family and joint family in their idealistic thinking style. While comparing the mean scores of XI standard students from nuclear family and joint family, the XI standard students from joint family are better in their idealistic thinking style.

- There is no significant difference between ar1s group and science group XI standard students in their synthetic, pragmatic, analytic and realistic thinking styles, but there is significant difference between arts group and science group XI standard students in their idealistic thinking style. While comparing the mean scores of arts group and science group XI standard students, the arts group XI standard students are better in their idealistic thinking style.
- There is significant difference between male and female XI standard students in their academic achievement. While comparing the mean scores of male and female XI standard students, the male XI standard students are better in their academic achievement.
- There is no significant difference between rural and urban school XI standard students in their academic achievement.
- There is no significant difference between XI standard students from nuclear family and joint family in their academic achievement.
- There is no significant difference between arts group and science group XI standard students in their academic achievement.
- There is no significant relationship between idealistic, pragmatic and analytic thinking styles and academic achievement of XI standard students, but there is significant relationship between synthetic and realistic thinking styles and academic achievement of XI standard students.

INTERPRETATIONS

The 't' test result shows that the urban school XI standard students are better than the rural school XI standard students in their synthetic and pragmatic thinking styles. This may be due to the fact that the urban is the place where the technological activities and research works are done effectively and this is the prior cause for those who are coming from urban area to receive works more than the pupil who are coming from the villages.

The 't' test result shows that the rural school XI standard students are better than the urban school XI standard students in their analytic and realistic thinking styles. This may be due to the fact that they are totally different from urban students. Rural students could understand the suffering of their parents and so they are able to lead their studies in a good way. From this we could understand that the rural school students are able to make their family background better than the urban students.

The 't' test result shows that the XI standard students from joint family are better than the XI standard students from nuclear family in their idealistic thinking style. This may be due to the fact that the joint family students have a number of members at their home. So their ideas may be in such a way that their pattern of thinking would be idealistic. From joint family, the student is able to come out with many personalities and ideas, ,vhich ,vill be helpful for them to face current problems in their life. So the students from joint family have clear efficiency in learning than the students from nuclear family.

The 't' test result shows that the arts group XI standard students are better than the science group XI standard students in their idealistic thinking style. This may be due to the fact that the arts group students are able to learn about the life histories of great personalities and their philosophies, but the science group students get involved only in their subjects and not the basic learning of life. This makes the arts group students better than the science group students in their idealistic thinking style.

The 't' test result shows that the male XI standard students are better than the female XI standard students in their academic achievement. This may be due to the fact that, boys are frank enough to speak to all ,while comparing to the girls. Boys have so many experiences and situations which they might have come across. Unlike boys girls are shy enough and finds disturbance while speaking with others. This shows that boys have guts to face any problems but girls are emotionally weak. Thus boys are better than girls.

The 'y' test result shows that there is significant relationship between synthetic and realistic thinking styles and academic achievement of XI standard students. This may be due to the fact that the XI standard students have good thinking capability. They have the will power to bring out victory. Only by their way of thinking, the students could make the academic achievement possible. It acts as a base for the achievement within a student. This is possible only through good education which is attained through different activities practised inside the class room.

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