



REASONING ABILITY AMONG HIGH SCHOOL STUDENTS

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ABSTRACT

Reasoning is a special mental capacity and stepwise thinking with a purpose or goal in mind. It requires the formation of concepts and the power of making judgements by the individual. It is a process of thinking involving inference or of solving problems by employing general principles. A study was conducted to investigate reasoning ability of high school students. The study included the categorical variables gender, locality of the school, type of school management, type of school, medium of instruction, parental educational qualification, parental occupation, type of family, family annual income, religion and community. Reasoning ability scale was developed by the researcher. Suitable objectives were framed and set the hypotheses to test the objectives. Normative survey method was adopted and total 985 high school students were standard selected randomly from the higher schools in Vellore District. The collected data was statically analysed by using percentage analysis, 't'- test , 'F'- test and Post hoc test techniques. The findings of this study indicates that the male high school students are having high reasoning ability than the female students whereas the urban high school students are having high reasoning ability than the rural counterparts.

KEY WORDS: Reasoning Ability, High school students.

INTRODUCTION

Reasoning is the process of higher order thinking where general principles are employed to draw relevant inferences. It is a kind of thinking, yet all kinds of thinking cannot be termed reasoning. It is a word used to describe the mental recognition of cause – and – effect relationship. It may be the prediction of an event from an observed cause or the inference of a cause from an observed event.

Reasoning is said to be a typical productive thinking process and systematic advanced stage in the complex process of one's organized thinking. The reasoning ability is the ability to think logically and solve problems in a new situation that is independent of required knowledge.

REVIEW OF RELATED LITERATURE

Sunisha (2016) has made a study on development of mathematical reasoning based on constructivist approach among the students. The study reveals that level of mathematical reasoning ability had increased by the use of constructivist approach.

Ehtesham Anwar .,(2015) studied the reasoning ability of secondary school students in relation to their intelligence. The findings of the revealed that there was no significant difference in the reasoning ability of male and female secondary school students.

TITLE OF THE PROBLEM

The problem entitled as “**REASONING ABILITY AMONG HIGH SCHOOL STUDENTS**”.

OPERATIONAL DEFINITIONS**REASONING ABILITY**

Reasoning Ability is the capacity to think logically and solve problems in new situations that is independent of acquired prior knowledge.

HIGH SCHOOL STUDENTS

High school students refers, those students are studying in 9th and 10th standard.

OBJECTIVES OF THE STUDY

- To find the level of reasoning ability of high school students is moderate
- To study the significant difference between the reasoning ability of high school students based on the select sub samples gender, locality of the school, type of school management, type of school, medium of instruction, parental educational qualification, parental occupation, type of family, family annual income, religion and community

HYPOTHESES OF THE STUDY

- The level of reasoning ability of high school students is moderate
- There is no significant difference in the reasoning ability of high school students based on the select sub samples gender, locality of the school, type of school management, type of school, medium of instruction, parental educational qualification, parental occupation, type of family, family annual income, religion and community

RESEARCH METHOD OF THE STUDY

Normative survey method was adopted in the study. The present study is focused to find out the correlation between the learning strategies in mathematics and learning styles of IX standard students. After selecting the title of the study, the sample, tools, variables and statistical technique were finalized for this study. The population of the present study includes high school students studying in government, government aided and private schools. Stratified random sampling technique was used for the selection of 985 high school students studying in government, government aided and private schools from Vellore district. Reasoning ability scale was developed by the researcher. The collected data was statically analysed by using percentage analysis, ‘t’- test , ‘F’- test and Post hoc test techniques.

TESTING THE HYPOTHESIS**Hypothesis - 1**

The level of reasoning ability of high school students is average in nature

TABLE – 1
LEVEL OF REASONING ABILITY OF HIGH SCHOOL STUDENTS

DIMENSIONS	RANGE OF SCORES	N	%
Low Reasoning Ability	1 – 5	236	23.96
Average Reasoning Ability	6 – 11	662	67.20
High reasoning Ability	12 – 28	87	8.83

From the above table it is understood that the among 985, low reasoning ability of high school students 236 (23.96 %), average reasoning ability of high school students 662 (67.20 %) whereas high school students high reasoning ability of high school students 87 (8.83 %),of reasoning ability.

HYPOTHESES - 2

There is no significant difference in the reasoning ability of high school students based on the select sub samples gender, locality of the school, type of school management, type of school, medium of instruction, parental educational qualification, parental occupation, type of family, family annual income, religion and community.

TABLE – 2
MEAN DIFFERENCES IN REASONING ABILITY OF HIGH SCHOOL STUDENTS BASED ON DEMOGRAPHIC VARIABLES

SUBSAMPLES		N	M	SD	t VALUE	P VALUE
Gender	Male	443	7.85	3.079	2.16*	0.298
	Female	542	7.45	2.729		
Locality of the school	Rural	687	7.62	2.850	0.18	0.982
	Urban	298	7.66	3.007		
Type of school Management	Government	741	7.67	2.806	0.78	0.193
	Private	244	7.49	3.165		
Medium of Instruction	Tamil	634	7.64	2.872	0.22	0.485
	English	351	7.60	2.946		
Type of family	Nuclear	758	7.63	2.951	0.07	0.572
	Joint	227	7.65	2.712		

S – Significant NS – Not Significant

From the above table it is inferred that P values are greater than at 0.05, the null hypothesis is accepted at 5% level in four cases, with regard to reasoning ability whereas that P value is less than at 0.05, the null hypothesis is rejected at 5% level in remaining one case.

Result

- There is a significance difference between male and female high school students with regard to reasoning ability.
- There is a significance difference between rural and urban high school students with regard to reasoning ability.
- There is no significance difference between government and private high school students with regard to reasoning ability.
- There is no significance difference between Tamil and English medium high school students with regard to reasoning ability.
- There is no significance difference between nuclear and joint family high school students with regard to reasoning ability.

TABLE –3

MEAN DIFFERENCES IN REASONING ABILITY OF HIGH SCHOOL STUDENTS BASED ON DEMOGRAPHIC VARIABLES

VARIABLES	SOURCES	SS	Df	MSS	F VALUE	P VALUE
Type of school	Between	13.317	2	6.659	0.79	0.453
	Within	8244.687	982	8.396		
	Total	8258.004	984			
Parental Educational Qualification	Between	12.950	2	6.475	0.77	0.463
	Within	8245.054	982	8.396		
	Total	8258.004	984			
Parental Occupation	Between	98.955	2	49.478	5.96**	0.003
	Within	8159.049	982	8.309		
	Total	8258.004	984			
Family Annual income	Between	44.125	2	22.062	2.64	0.072
	Within	8213.879	982	8.364		
	Total	8258.004	984			
Religion	Between	4.515	2	2.258	0.27	0.761
	Within	8253.489	982	8.405		
	Total	8258.004	984			
Community	Between	83.847	3	27.949	3.35*	0.018
	Within	8174.157	981	8.332		
	Total	8258.004	984			

S – Significant NS – Not Significant ** Significant at 1 % level * Significant at 5 % level

From the above table, it is found that obtained “F” values are less than the table value required at 2, 982 degrees of freedom at 0.05 level in four cases, the null hypothesis is accepted at 5% level in these cases meanwhile “F” values are greater than the table value required at 2, 982 degrees of freedom at 0.05 level in remaining two cases, the null hypothesis is accepted at 5% level in these cases with regard to reasoning ability.

Result

- There is no significance difference between high school students studying in the co – education, boys and girls in their level of reasoning ability.
- There is no significance difference between high school students studying in the Co – education, Boys and Girls in their reasoning ability.
- There is no significant difference among the high school students whose parents are of farmer, private and government sector with regard to reasoning ability.
- There is no significant difference among the high school students of different religions with regard to reasoning ability.
- There is significant difference among the high school students of different communities with regard to reasoning ability.

As the calculated “F” ratio was significant in two demographic variables namely parental educational qualification and community, post hoc test has been applied to find out whether the difference in the reasoning ability mean scores is significant or not. The post hoc tests are given in table 3

TABLE - 3

SCHEFFE’S TEST FOR SIGNIFICANT DIFFERENCES IN REASONING ABILITY OF HIGH SCHOOL STUDENTS

Demographic Variables		Farmer	Private	Government Sector
Parental Educational Qualification	Farmer	-	-	-
	Private	0.249	-	-
	Government Sector	1.131**	1.380**	-
Demographic Variables		FC	BC	MBC
Community	FC	-	-	-
	BC	0.471	-	-
	MBC	0.380	0.851*	-
	SC and ST	0.034	0.437	0.414

From the above table it is noticed that

- Farmer and government sector occupation of parents in high school students and private and government sector occupation of parents in high school students differ in reasoning ability.
- FC and MBC community high school students differ in reasoning ability.

MAJOR FINDINGS OF THE STUDY

- There is a significance difference between male and female high school students with regard to reasoning ability. Specifically, the result reveals that the male high school students are having high reasoning ability than the female counterparts.
- There is a significance difference between rural and urban high school students with regard to reasoning ability. Specifically, the result reveals that the urban high school students are having high reasoning ability than the rural counterparts.
- There is no significance difference between government and private high school students with regard to reasoning ability. Specifically, the result reveals that the government high school students are having high reasoning ability than the private counterparts.
- There is no significance difference between Tamil and English medium high school students with regard to reasoning ability. , the result reveals that the English medium high school students are having high reasoning ability than the Tamil medium students counterparts.
- There is no significance difference between nuclear and joint family high school students with regard to reasoning ability. Specifically, the results reveals that the nuclear family high school students are having high mean scores of reasoning ability than the joint family high school students counterparts.
- There is no significance difference between high school students studying in the co – education, boys and girls in their level of reasoning ability. Specifically, the result reveals that high school students studying in the co – education have higher mean scores in reasoning ability than the those students studying inboys and girls in their level of reasoning ability counterparts.
- There is no significance difference between high school students studying in the Co – education, Boys and Girls in their reasoning ability.The result reveals that the high school students whose fathers are college education have higher mean scoresin reasoning ability than the students whose fathers are illiterate and school education counterparts.
- There is no significant difference among the high school students whose parents are of farmer, private and government sector with regard to reasoning ability. The result reveals that the high school students whose fathers are government sector occupation have higher mean scores in reasoning ability than those students whose fathers are farmer and private sector occupation counterparts.
- There is no significant difference among the high school students of different religions with regard to reasoning ability. The result reveals that high school students of Christian religion have higher mean scores in reasoning ability than those students of Hindu and Islam religion counterparts

- There is significant difference among the high school students of different communities with regard to reasoning ability. The result reveals that high school students of BC community have higher mean scores in reasoning ability than those students of FC, MBC and SC and ST community counterparts. Farmer and government sector occupation of parents in high school students and private and government sector occupation of parents in high school students differ in reasoning ability whereas FC and MBC community high school students differ in reasoning ability.

DISCUSSION OF THE STUDY

EhteshamAnwar .,(2015) studied the reasoning ability of secondary school students in relation to their intelligence. The findings of the revealed that there was no significant difference in the reasoning ability of male and female secondary school students. These findings is not confirm to present study and they that there is a significance difference between male and female high school students with regard to reasoning ability.

CONCLUSION

The findings of this study indicates that the male high school students are having high reasoning ability than the female students whereas the urban high school students are having high reasoning ability than the rural counterparts.

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