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## THINKING SKILLS AND INTEREST IN LEARNING AMONG SECONDARY SCHOOL STUDENTS OF KOTTAYAM DISTRICT

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### Abstract

*This article is related to a survey conducted among the Secondary Students of Kottayam districts. This study is conducted i) to find the difference in Thinking Skills with respect to a) Gender b) Locale of the school and c) Type of management of the school and ii) to study the difference in Interest in Learning with respect to a) Gender b) Locale of the school and c) Type of management of the school*

*The study was conducted on a sample of 520 Secondary Students randomly selected from the secondary schools of Kottayam district. The tools used for the data collection are 'Test on Thinking Skills' (TTS) and 'Learning Interest Inventory' (LII) constructed and standardized by the investigators. The data were analysed using the descriptive statistical technique Mean, Standard Deviation, and the inferential statistical technique, test of significance of difference between means for large independent sample. The findings of the study are 1) There is significant difference between the means of scores on Thinking Skills a) of Male and Female students of secondary schools and b) of the students from Urban and Rural secondary schools. 2) There is no significant difference between the means of scores on Thinking Skills of the students from Government and Aided secondary schools. 3) There is significant difference between the means of scores on Interest in Learning a) of Male and Female students of secondary schools and b) of the students from Government and Aided secondary schools. 4) There is no significant difference in the means of scores on Interest in Learning between the students from Urban and Rural secondary schools.*

**Key words:** *Thinking skills, Interest in learning, Gender, Locality, Type of management.*

## Introduction

Education is the development of all those capacities in the individual which enables him to control his environment and fulfill his possibilities (John Dewey, 1940). Education is an essential human virtue. The chief task of education is to shape man, or to guide the evolving dynamism through which man forms himself as a man. For the overall development of the student, education is essential and it is the principal tool of his growth and development. Education or learning can play a vital role in improving the quality of one's life and the socio-economic condition of the nation. For better education or learning, Thinking Skills and Interest in Learning are very important and essential.

Thinking is a complex process and the highest mental activity present in an individual. Thinking is the manipulation of mental representation of information. The representation may be a word, a visual image, a sound, or data in any other modality. During thinking this representation of information is transformed into a new and different form for the purpose of answering a question, solving a problem, or aiding in reaching a goal. The important nature of thinking is an internal mental process, always purposeful and goal directed behaviour. The various elements used in thinking process are referred to as tools of thinking. The important tools are images, concepts, symbols and signs and language. The quality and level of thinking depends primarily on three factors: sensation, perception and concepts. Thinking is a complex process that depends on many other factors associated with a person, they are the way the student senses a problem, the way how he perceives the problem and how he makes generalizations from it. The thinking skills possessed by a student that determines his academic achievement.

Interest is another important factor that determines the outcomes of learning. Interests may be defined as a set of subjective feelings about something that draws the individual's attention. Interest is linked with the person wants, motives, drives and basic needs. Interests are innate as well as acquired dispositions. Interests get changed as a result of maturation and learning. They are not fixed and permanent. Pursuit of one's interest provides strength to an individual to resist fatigue. The pattern of interest undergoes a vast change with age- from infants to old men. The teacher can make the students more interested in learning by helping him to set proper aims and objectives of the learning activities before introducing the lesson, select and organize the content in a suitable way by keeping in view all the psychological principles, use appropriate methods and teaching aids, exploit the basic drives like curiosity, constructiveness, acquisition and self-assertion. Development of Interest in Learning of students is essential for their better performance in learning and academic achievement.

In view of the importance of Thinking Skills and Interest in Learning, for the successful accomplishment of the learning task, the research studies on the Thinking Skills and Interest in Learning among school students and the effective strategies to develop them among school students are most relevant. Hence the investigator decided to conduct the present study entitled "Thinking Skills and Interest in Learning among Secondary School Students".

## Need and Significance of the Study

Thinking is the highest and most essential mental activity present in man for his development. All human achievements and progress are simply the products of thought. The evolution of culture, art, literature, science and technology are all the results of thinking. A person with higher thinking ability achieves academic excellence. Thinking skills help the students to select the right way of learning and find solutions for the problem that he faces in classroom and his whole life. Learning in students leads to their overall development and they become good citizen, that is the aim of education. The students with higher Thinking Skills are highly motivated towards learning and they attain good academic achievement. This

helps the child to achieve more and more in academics and he becomes more confident. Thereby the students' lives will be filled with happiness and they will become more successful.

We are living in a scientific era. The new ways of thinking and purposeful actions are necessary in students' life. The development of Thinking Skills is essential and is an important factor in the learning process. It helps the student to become a successful learner and also helps him to choose the right career.

The benefits of developing thinking ability are manifold. By developing one's Thinking Skills one can make achievements; can become successful; can shine in social life; can attain emotional, social and economic maturity and so on. By developing one's thinking abilities it is possible to transform one's aggressive tendencies, bad temper and other negative tendencies creatively and constructively. It has been found by Dr. Edward de Bono that when school students were taught to think effectively, their ill-temper and aggressive tendencies reduced significantly.

The Interest in Learning is also another important factor in the learning process. Interest in Learning helps the child to attain good academic achievement and thereby he is motivated to learn. That leads the student to a successful career and life. If the student possesses Interest in Learning, he would achieve academic excellence.

This study focuses on the importance developing Thinking Skills and Interest in Learning among students for better learning and shows its significance in the learning process. A successful learner starts with having an Interest in Learning and essential Thinking Skills. Interest in Learning and Thinking Skills let the student relax, remember, focus and absorb information as he learns. Then he will be ready to welcome new experiences and recognize many different kinds of learning opportunities. Here the investigator felt the need to study about Thinking Skills and Interest in Learning among secondary school students.

### ***Objectives of the Study***

The objectives of the study are

- 1) To study the difference in Thinking Skills with respect to
  - a) Gender
  - b) Locale of the school
  - c) Type of management of the school
  
- 2) To study the difference in Interest in Learning with respect to
  - a) Gender
  - b) Locale of the school
  - c) Type of management of the school

### ***Hypothesis of the Study***

1. There is significant difference between the means of scores on Thinking Skills among Secondary Students with respect to
  - a) Gender
  - b) Locale of the school
  - c) Type of management of the school

2. There is significant difference between the means of scores on Interest in Learning among Secondary Students with respect to
  - a) Gender
  - b) Locale of the school
  - c) Type of management of the school

### **Methodology of the Study**

The method adopted for the present study was descriptive survey method. The data pertaining to the study were collected from a sample of 520 ninth standard students randomly selected from the secondary schools of Kottayam district. The population of the study includes all the students of standard nine of secondary schools of Kottayam District. Primary data were collected using standardized self - constructed tools namely, Test on Thinking Skills (TTS) and Learning Interest Inventory (LII).

The Test on Thinking Skills (TTS) includes eight subtests– Classifying, Comparing, Defining problems, Formulating Questions, Identifying attributes and components, Identifying relationships and patterns, Identifying errors and Inferring. Thinking tasks related to four content areas- Science, Mathematics, Social Science and Life related experiences – are included in each of the subtests. Each of the subtest includes eight items. The maximum attainable score in the test is 64. The split half reliability of the test is .871. The validity of the test was established based on the expert opinion. The Learning Interest Inventory (LII) comprising 32 items in three dimensions - Home Learning, Classroom or School Learning and Society Learning. The maximum attainable score on the inventory is 32. The split half reliability coefficient of the inventory is .847. The validity of the test was established based on expert opinion.

The statistical technique used in the study includes the descriptive statistics -Mean, Standard Deviation, and the inferential statistics, test of significance of difference between means for independent sample.

### **Analysis and Findings**

#### **Analysis and interpretation of the difference in Thinking Skills among Male and Female students**

The first objective of the study was to study the difference between the means of scores on Thinking Skills among the Male and Female Secondary Students. The investigator analysed and interpreted the data using inferential statistics namely the test of significance, two-tailed for large independent sample. For this the investigator formulated the following null hypothesis.

$H_{01}$  : There is no significant difference between the means of scores on Thinking Skills of the Male and Female Secondary Students.

In order to test this hypothesis, the investigators used SPSS (version 20.00). The investigators fixed the level of significance ( $p$  value) as .05. If the  $p$  value exceeds .05 or if the  $t$  value is less than 1.96 then the null hypothesis is accepted. The details of analysis are given in table 1.

Table 1:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Thinking Skills with regard to Gender*

Variable	Gender	Number	Mean	SD	<i>t</i>	df	<i>p</i> value	Mean difference
	F	198	26.65	7.732				
Thinking Skills	M	322	23.88	7.432	4.063	518	0.000	2.770

\* Note. *p* = Probability of Type I Error, *df*- Degrees of Freedom

From the table 1, the investigator observes that the obtained *t* value,  $t(518) = 4.063$ ,  $p < .05$ . The *t* value is greater than the theoretical value 1.96 at .05 level with degrees of freedom 518. Therefore, the null hypothesis  $H_01$  is not accepted with respect to the scores on Thinking Skills. It indicates that there is significant difference in the means of scores on Thinking Skills between Male and Female Secondary School Students. The means of scores on Thinking Skills of Male students is 23.88 and that of Female students is 26.65. The mean difference is 2.770. Therefore, it is clear that Female students are superior in Thinking Skills to Male students.

### **Analysis and interpretation of the difference in Thinking Skills with respect to Locale of the school**

In order to find out the difference in the means of scores on Thinking Skills based on locale, the investigator analysed and interpreted the data using inferential statistics namely the test of significance, two-tailed for large independent sample. The investigator formulated the null hypothesis  $H_02$  for the purpose of testing.

**$H_02$ :** There is no significant difference in the means of scores on Thinking Skills among the students of secondary schools situated in the Urban and Rural areas.

The investigator analysed data with the help of SPSS and the results are detailed in the table 2 given below.

Table 2:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Thinking Skills with regard to Locale of the school*

Variable	Locality	Number	Mean	SD	<i>t</i>	df	<i>p</i>	Mean difference
	Urban	253	25.71	8.184				
Thinking Skills	Rural	267	24.2	7.064	2.255	518	0.025	1.509

Table 2 shows that the obtained  $t$  value,  $t(518) = 2.255$ ,  $p < .05$ . The  $t$  value is greater than the theoretical value 1.96 at .05 level with degrees of freedom 518. In the light of this, the null hypothesis  $H_02$  is not accepted with respect to the total scores on Thinking Skills. It indicates that there is significant difference in the means of scores on Thinking Skills between the students from schools situated in Urban and Rural areas. The means of scores on Thinking Skills of Urban students is 25.71 and that of Rural students is 24.2. The mean difference is 1.509. Therefore, it is clear that the students from Urban schools are superior in Thinking Skills compared with the students from Rural schools.

### Analysis and interpretation of the difference in Thinking Skills with respect to Type of Management of school

The first objective of the study was to find if there is any significant difference between the means of scores on Thinking Skills among the students of Government and Aided secondary schools. The investigator analysed and interpreted the pertaining data using inferential statistics namely the test of significance, two-tailed for large independent sample. For this the investigator formulated the following null hypothesis.

**$H_03$ :** There is no significant difference in the means of scores on Thinking Skills among the students from Government and Aided secondary schools.

The investigator presented the results in the table 3.

Table 3:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Thinking Skills with regard to Type of Management of schools*

Variable	Type of Management	Number	Mean	SD	t value	df	p value	Mean difference
Thinking Skills	Government	251	25.2	7.778	0.744	518	0.457	0.5
	Aided	269	24.7	7.554				

From the table 3, it is evident that the obtained  $t$  value,  $t(518) = 0.744$ ,  $p > .05$ . The  $t$  value is less than the theoretical value 1.96 at .05 level with degrees of freedom 518. So the obtained critical ratio value is not significant at .05 level. Therefore, the null hypothesis  $H_03$  is accepted with respect to the total scores on Thinking Skills. It indicates that there is no significant difference in the means of scores on Thinking Skills between the students from Government and Aided secondary schools.

### Analysis and interpretation of the difference in Interest in Learning regarding Gender

The second objective of the study was to find if there is any significant difference between the means of scores on Interest in Learning among the male and female students of secondary schools. The investigator analysed and interpreted the data using inferential statistics namely the test of significance, two-tailed for large independent sample. For this the investigators formulated the following null hypothesis. **H<sub>04</sub>** : There is no significant difference between the means of scores on Interest in Learning among the Male and Female students of secondary schools.

The details of the analysis are given in the table 4.

Table 4:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Interest in Learning with regard to Gender*

Variable	Gender	Number	Mean	SD	t value	df	p value	Mean difference
Interest in Learning	F	198	10.53	4.65	2.627	518	.009	1.094
	M	322	9.43	4.585				

From the table 4, it is clear that the obtained  $t$  value is  $t(518) = 2.627$ ,  $p < .05$ . This  $t$  value is greater than the theoretical value 1.96 at .05 level with degrees of freedom 518. Therefore, the null hypothesis  $H_{04}$  is not accepted with respect to the scores on Interest in Learning. It indicates that there is significant difference in the means of scores on Interest in Learning between Male and Female students of secondary schools. The mean of scores on Interest in Learning of Male students is 9.43 and that of Female students is 10.53. The mean difference is 1.094. Therefore, it is clear that Female students possess high in Interest in Learning compared with Male students.

### Analysis and interpretation of the difference in Interest in Learning with respect to Locale of the school

In order to find out the difference in the means of the scores on Interest in Learning based on locale, the investigators analysed and interpreted the data using inferential statistics namely the test of significance, two-tailed for large independent sample. The null hypothesis  $H_{05}$  formulated for the purpose of testing is

**H<sub>05</sub>**: There is no significant difference in the means of scores on Interest in Learning among the students of secondary schools situated in the Urban and Rural areas.

The results are detailed in the table 5 given below.

Table 5:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Interest in Learning with regard to Locale of the school*

Variable	Locality	Number	Mean	SD	t value	df	p value	Mean difference
Interest in Learning	Urban	253	9.72	4.55	0.597	518	0.551	0.243
	Rural	267	9.97	4.717				

Table 5 shows that the obtained  $t$  value,  $t(518) = 0.597$ ,  $p > .05$ . It is less than the theoretical value 1.96 at .05 level with degrees of freedom 518. In the light of this, the null hypothesis  $H_0$  is accepted with respect to the total scores on Interest in Learning. It indicates that there is no significant difference in the means of scores on Interest in Learning between the students from schools situated in Urban and Rural areas.

### Analysis and interpretation of the difference in Interest in Learning regarding Type of Management of schools

The second objective of the study was to study the significant difference between the means of scores on Interest in Learning among the Government and Aided school students. The investigators analysed the data using inferential statistics namely the test of significance, two-tailed for large independent sample. For this the investigator formulated the following null hypothesis.

**$H_0$ :** There is no significant difference in the means of scores on Interest in Learning among the Government and Aided school students.

The results are detailed in the table 6.

Table 6:

*The Number (N), Mean (M), Standard Deviation (SD) and t value of the scores on Interest in Learning among the students from Government and Aided secondary schools*

Variable	Type of Management	Number	Mean	SD	t value	df	p value	Mean difference
Interest in Learning	Government	251	10.28	4.844	2.207	518	0.039	1.84
	Aided	269	9.44	4.404				

From the table 6, the investigator observes that the obtained  $t$  value is  $t(518) = 2.207$ ,  $p < .05$ . It is greater than the theoretical value 1.96 at .05 level with degrees of freedom 518. So the obtained  $t$  value is significant at .05 level. Therefore, the null hypothesis  $H_0$  is not accepted. It indicates that there is

significant difference in the means of scores on Interest in Learning between the students from Government and Aided secondary schools. The mean of scores on Interest in Learning of Government school students is 10.28 and that of Aided school students is 9.44. The mean difference is 1.84. Therefore, it is clear that students from Government schools possess high Interest in Learning compared with students from Aided schools.

### **Major findings of the Study**

The major findings of the study are given below.

- There is significant difference between the means of scores on Thinking Skills of Male and Female students of secondary schools. The Female students are superior in Thinking Skills to Male students.
- There is significant difference between the means of scores on Thinking Skills among the students from Urban and Rural secondary schools. The students from Urban schools are superior in Thinking Skills to students from Rural schools.
- There is no significant difference between the means of scores on Thinking Skills among the students from Government and Aided secondary schools.
- There is significant difference between the means of scores on Interest in Learning among Male and Female students of secondary schools. The Female students possess high Interest in Learning compared with Male students.
- There is no significant difference between the means of scores on Interest in Learning among the students from Urban and Rural secondary schools.
- There is significant difference between the means of scores on Interest in Learning among the students from Government and Aided secondary schools. The students from Government schools are superior in Interest in Learning to the students from Aided schools.

### **Educational implications of the Study**

- The present study helps to find out the students' Thinking Skills and Interest in Learning in order to assess their abilities, needs, opinions and knowledge about learning and education. The results of this study will have importance in planning and implementing the policies and services of current and future governmental and private sector programs and initiatives in the area of learning and education.
- The teacher should encourage the students to think in various directions and to search for different solutions of the problematic situation. This helps the students to develop new Thinking Skills and Interest in Learning.
- The study of Interest in Learning among the secondary school students of Kottayam district, points out the importance of providing conducive atmosphere in home, school and society for developing and maintaining Interest in Learning. The teachers and parents should provide good atmosphere in school and home to develop and maintain Interest in Learning.
- Development of Thinking Skills and Interest in Learning helps students to achieve goals and attain success. It brings more happiness into student's life and produces more energy.
- The teacher must be aware of the higher levels of Thinking Skills and Interest in Learning among female students and help them to maintain this level. At the same time teachers must encourage the male students to develop their Interest in Learning and Thinking Skills.

- The teacher must be aware of the higher levels of Thinking Skills among students from Urban secondary schools and help them to maintain this level. At the same time teachers must encourage the Rural students to develop their Thinking Skills.
- The teacher must be aware of the higher levels of Interest in Learning among students from Government schools and help them to maintain this level. At the same time teachers must encourage the students from Aided schools to develop their Interest in Learning.

## Conclusion

It is observed from the present study that there is difference in Thinking Skills with respect to gender and locale of the schools. The Female students are superior in Thinking Skills to Male students and the students from Urban schools are superior in Thinking Skills to students from Rural schools. It shows the need for motivating the Male students and Rural school students to develop and maintain Thinking Skills and the Female students and the students from Urban schools to maintain it. The results also show that the Thinking Skills of students do not differ with type of management of school. It is also observed from the present study that there is difference in Interest in Learning with respect to gender and type of management of school. The Female students possess high Interest in Learning to Male students and the students from the Government schools also show high Interest in Learning to the students from Aided schools. It also points out the importance of motivating the Male students and the students from the Aided schools to develop and maintain Interest in Learning and the Female students and the students from Government schools to maintain it. The result shows that Interest in Learning of students do not differ with locality of school.

The findings reveal that necessary steps should be taken in order to improve Thinking Skills and Learning Interest of students. The appropriate learning strategies should be adopted in the classroom so as to stimulate thinking and motivation. As male students are found to be inferior to female students in terms of Thinking Skills and Learning Interest, proper attention should be given to boost their interest and cognitive abilities.

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