

# Effectiveness of Mnemonic Strategies on Achievement in Geography among Secondary School Students

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## Abstract

The study entitled as "Effectiveness of Mnemonic Strategies for Achievement in Geography among Secondary School Students ". The intention of this work was to verify the impact and influence of Mnemonic strategies for improving learning of facts in geography. The data was collected from 40 students using experimental method. The results indicated that after the experimentation the students with moderate level of knowledge in Geography have improved to a great extent. The findings showed the experiment and intervention was effective in making the students to enhance their learning by using memory techniques. The Acronym, Acrostic and Visual Mnemonic Methods were the variables found to be used in this study.

**Key words:** Mnemonic Strategies, Achievement in Geography, Secondary School Students.

## Introduction:

Mnemonic technique is used for improving memory. This gives way to spell different words, remember concepts and memorise facts. Relevant information regarding important concepts terms and complex ideas are memorized through this method, Learner have to select the Mnemonic which one is suitable to them.

## Types of Mnemonic technique

### Spelling mnemonics

Spelling mnemonics helps to memorise the way to spell a difficult word by making use of phrases, patterns and rules.

### Feature mnemonics

This involves identifying a prominent characteristic of a person.

### Rhyming mnemonics

Rhyming mnemonics can be used to remember concepts using rhymes, rhythm or tunes

### Note organization mnemonics

This can be learnt better by organising them into notes. For example when you are getting ready for a presentation or in order to memorise a new idea, the idea can be organized into notes.

### Alliteration mnemonics

A person's name can be remembered by alliteration or repetition of the initial sound.

### Song mnemonics

The information that needs to be memorized can be inserted into a song to remember it easily.

### Organization mnemonics

A large group of words, numbers or other information can be easily memorized if you group them.

**Visual mnemonics**

Some people learn best by linking images together to create a story so as to connect the information.

**Acronym**

It is technique for remembering names, phrases or steps by using the first letter of each word to form a new, memorable word.

**Acrostic**

An invented sentence where the first letter of each word is a cue (indication) to an idea we needed to remember.

**Chunking**

This is a technique generally used when remembering numbers (separating numbers in groups).

**Word-length mnemonic**

It is a kind of memory aid used to remember numeral of a series in order.

**Need and significance of the study**

As teaching learning method students thinking skills can be enhanced through mnemonic strategies. Through this method the new learning material is linked to the previously learned material by make use of the clues. All the mnemonic techniques are based on the use of rhymes, tunes, styles, patterns etc. the students efforts can be refined and improved by this method. Creative strategies can be useful in many class room learning activities. Learning and retention can be improved by the memorization of complex words and concepts. It is helpful to students who are deficit in learning and memorizing facts.

The study is mainly focused on high school students. The researcher found difficulties in learning new terms in geography. Some terms in geography are very difficult to understand so the researcher is trying to solve the problem by using mnemonics.

**Methodology**

The present study is conducted among VII standard (Malayalam medium) students of a Govt. higher secondary School. The entire class is divided in to two groups, G 1 and G 2. Each group has 20 students. First group is considered as Control group (teaching the sample chapter blanket of the earth in normal way like lecture, discussion and Socratic method) and the Group 2 is considered as a experimental group (teaching the same unit by using mnemonic technique). Present study is based on both primary and secondary data. Sample of the study is 40 8<sup>th</sup> standard students. Various tools such as percentage analysis, statistical test (t –test) etc. are used to interpret the data.

**Tools used for the Present study****Achievement test**

Achievement test contains questions from the lesson. The students were asked to write a pre test on the topics major gases in atmosphere layers of atmosphere and Greenhouse effect. The test was used as pre test and post test for the experimentation.

**Mnemonic techniques and its lesson plan**

Mnemonic is a teaching learning technique to improve the learning capacity of students. Through cues it links the new knowledge to the previous knowledge. The fundamental categories of mnemonic are these of features, rhymes, tunes, and patterns etc. which are convenient to all subjects.

**Questionnaire**

Researchers used questionnaire for checking the status and difficulty level of geography learning.

**Objectives of the study**

To identify the problems related with Geography learning.

To evaluate the effectiveness of mnemonic strategies in Geography learning among secondary school students

**Hypothesis**

There is significant difference between controlled mean and experimental mean.

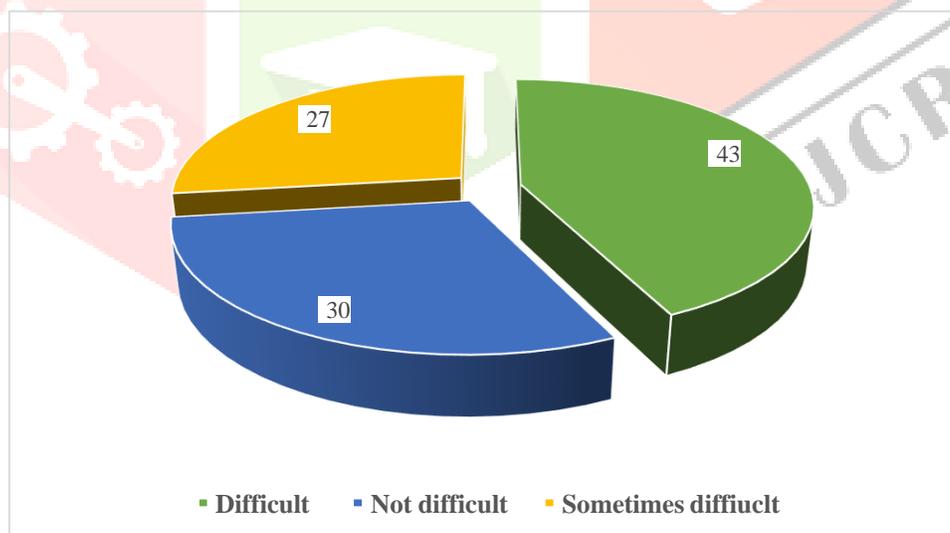
**Data Analysis and interpretation**

Table 1 shows the difficulty level of geography learning. The below table shows that 43% of students are facing difficulties in geography learning, only 30% are not difficult to learn geography concepts in the normal classroom method. 27 % sample shares that they have sometime face difficulties in geography learning.

TABLE 1			
Difficulty of Geography	Male	Female	Total
Difficult	8	9	17(43%)
Not difficult	6	6	12(30%)
Sometimes difficult	4	7	11(27%)
Grand Total	18	22	40(100%)

Source: based on sample data

Figure 1



Source: based on table 1

**Difficulty level of Geography**

Figure 1 is the graphical representation of table 1. It shows that majority of the students are facing difficulties in geography learning.

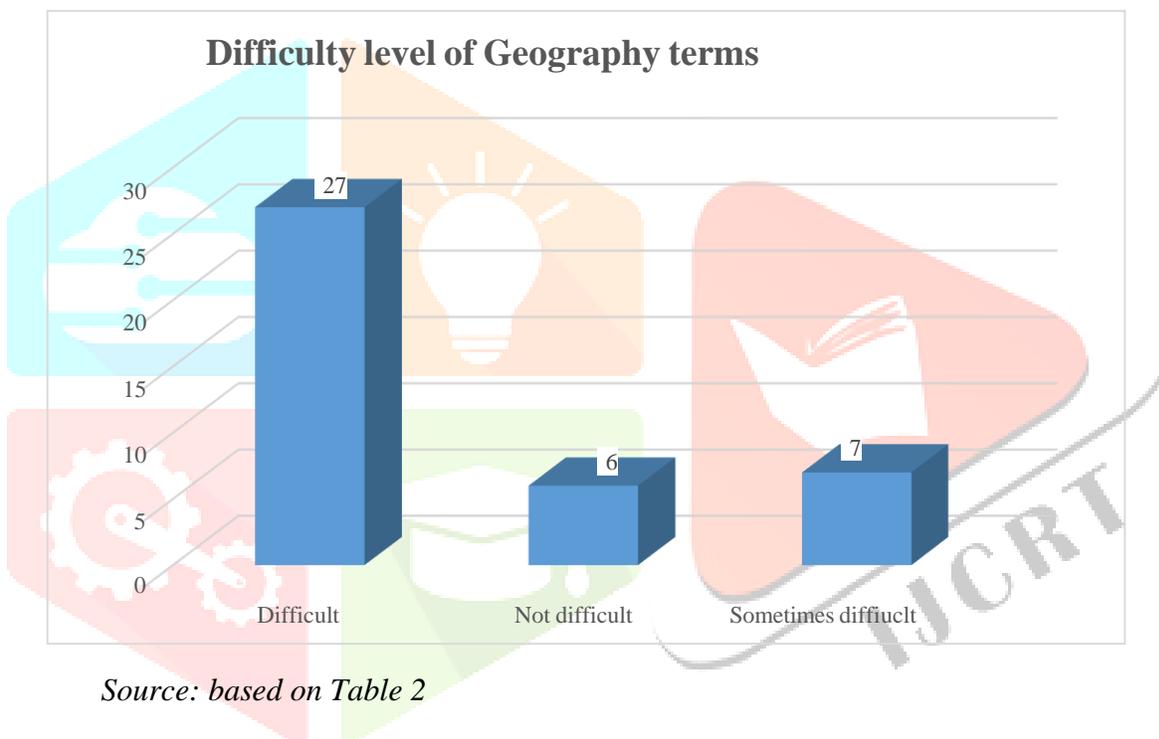
### Memorising difficult terms of Geography

Table 2 shows that memorising difficult terms are the problem of students in the matter of learning geographical terms and concept. It shows that 68% students are facing difficulties for memorizing the new terms and concept in geography. Only 15 percentages are not facing this difficulty.

Memorising difficult terms	Frequency	Percentage
Difficult	27	68
Not difficult	6	15
Sometimes difficult	7	18
Grand Total	40	100

*Source: based on sample data.*

Figure 2



*Source: based on Table 2*

Figure 2 is the graphical representation of the table 2. It shows that 68% students are facing difficulties for memorising the new terms and concept of geography. Only 15 percentages are not facing the problem.

### Hypothesis testing

The researcher set hypotheses to check the effectiveness of mnemonic techniques. Following are the hypotheses of the study.

There is significant difference between controlled mean and experimental mean.

The hypotheses are tested by using t-test on MS Excel. Table 3 shows the test result of the analysis.

<b>Table 3</b>		
<b>t-Test: Paired Two Sample for Means</b>		
	<i>Control group</i>	<i>Experimental group</i>
<b>Mean</b>	8.4	10.05
<b>Variance</b>	8.357894737	5.102631579
<b>Observations</b>	20	20
<b>Pearson Correlation</b>	0.14184483	
<b>Hypothesized Mean Difference</b>	0	
<b>df</b>	19	
<b>t Stat</b>	-2.16581926	
<b>P(T&lt;=t) one-tail</b>	0.021626639	
<b>t Critical one-tail</b>	1.729132812	
<b>P(T&lt;=t) two-tail</b>	<b>0.043253277</b>	
<b>t Critical two-tail</b>	2.093024054	

In the above table experimental mean is greater than the control mean. To prove the significance, the researcher use t- test with 0.05 alpha value. In the result the P value is less than the alpha value and table value is smaller than the statistics. The researcher accepted the hypotheses ie. “There is significant difference between controlled mean and experimental mean”. So it is concluded that mnemonic techniques are effective for learning geography.

#### **Achievement in Geography**

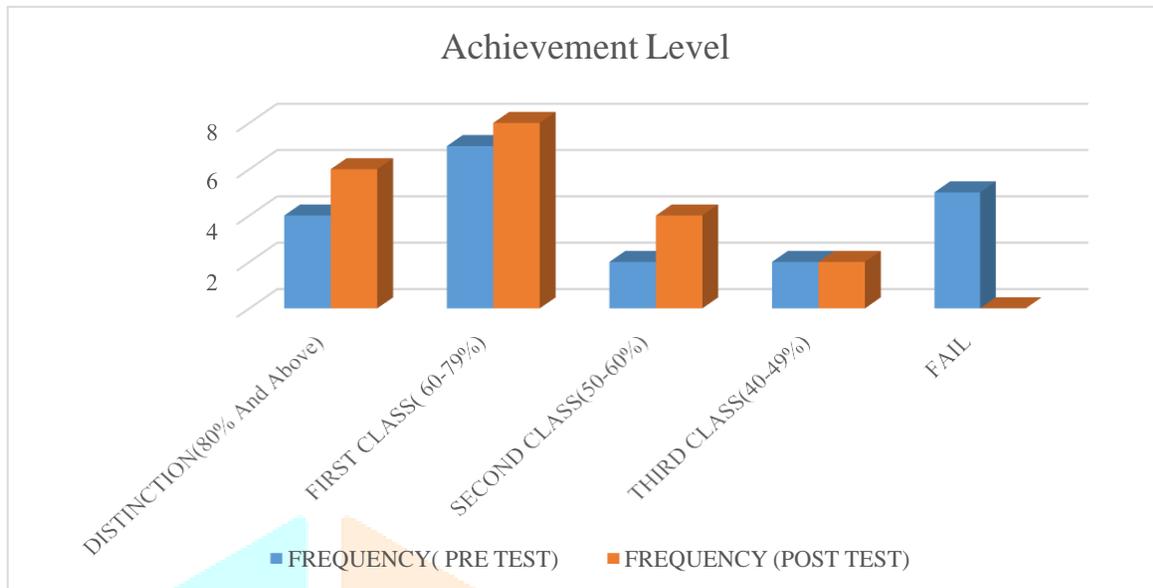
Table 4 shows the class wise analysis of achievement in Geography before and after experimentation. It shows that 20% of students achieve distinction that is above 80% in control group and there is an increase in the percentage of students to 30% (distinction) in the case of experimental group. The table also shows that there is decrease in the number of failure from 25 % to 0% (control to experimental group).

<b>Table 4</b>				
<b>Class wise analysis</b>				
<b>Class</b>	<b>Frequency ( Pre Test)</b>	<b>Percentage</b>	<b>Frequency (Post Test)</b>	<b>Percentage</b>
DISTINCTION(80% And Above)	4	20	6	30
FIRST CLASS( 60-79%)	7	35	8	40
SECOND CLASS(50-60%)	2	10	4	20
THIRD CLASS(40-49%)	2	10	2	10
FAIL	5	25	0	0
<b>GRAND TOTAL</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>

*Source: based on primary data.*

Figure.3 is the graphical representation of the table 4. It shows that 20% of students achieved distinction that is above 80% in control group and there is increase in the percentage of students to 30% (distinction) in the case of experimental group.

Figure 3



Source: based on primary data.

Mnemonic techniques are effective for encouraging students in learning of geography. It can also be applied for children with learning disabilities, mild mental retardation and emotional behavioral disabilities. Mnemonic strategies can be extended in other subject areas for facilitating learning experience.

### Findings

- 43% of students are facing difficulties in geography learning, only 30% students are easily learning geography concepts. 27% sample expresses that they have sometimes faced difficulties in geography learning.
- 68% students are facing difficulties for memorising the new terms and concept of geography. Only 15% have not that problem.
- Controlled mean is 8.4 and after using the mnemonic technique it increased to 10.04, it shows that mnemonic technique is effective for teaching geography.
- The value of t test is smaller than the alpha value and table value is less than the t statistics so researcher reject the null hypotheses and accept the alternative hypotheses that is “There is significant difference between controlled mean and experimental mean”.

### Conclusion

The study was entitled as Effectiveness of mnemonic techniques in achievement in geography concepts among high school students. The sample were 50 students from Government Higher secondary school. Based on the experimental method, samples were selected and they were taught a lesson from social science text books. Achievement test was conducted and evaluated. After the implementation of mnemonic strategies post test was conducted. The pre and post test scores were compared to test the hypothesis (t-test). The result implied that learning with mnemonic devices is better in memorization of geography concepts, So the null hypothesis was rejected and alternative hypotheses was accepted.

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