CHAPTER 5

SUMMARY AND CONCLUSION
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5.1 SUMMARY OF RESEARCH WORK

5.1.1 Importance of Memory

“Memory is the knowledge of a former state of mind after it has already once dropped from consciousness, or rather it is the knowledge of an event, or fact of which mean time we are not been thinking with the additional consciousness that we have thought or experienced before.” - William James

Memory is an integral part of our day to day life. In every work that we do and every form of communication, we rely completely on memory of past experiences, conversations, information and skills. It is also the most important and fundamental aspect of the teaching learning process. In the teaching learning process, the learner has to remember the information, knowledge and wisdom gathered by self and others. There is a definite process through which all this is stored in the brain. Memory is the process by which information is encoded, stored and retrieved.

Research has pointed out that the memory is stored in certain areas of the brain and sensory perceptions, which convey the stimuli to the brain have a certain way of decoding the information. All this has given new perspective to the memorization process. Although, people have memorized a vast amount of data like Vedas or holy text, the memorization processes used were not evolved beyond repetition, rote learning and association.

From the conventional rote method which was followed for ages, to creative new methods like making a story to remember unrelated words and phrases, research and study have made significant progress in the study of memorization.
Many educationists believed that memory and memorization were the lowest skills in the hierarchy of the learning process (Bloom’s Taxonomy) and so were unimportant. It was said that the other skills like understanding, applying, analyzing, evaluating and creating which were placed on a higher wrung were more significant and worth giving attention to. But some Psychologists and Educationists realized that memory / remembering is the most important aspect of the learning process and true to its place in the hierarchy it is the basis or fundamental aspect of any learning process. All the later mental processes are possible only if at the given moment the necessary information can be retrieved.

The mind is complex in its capabilities, but without memory it cannot perform the simplest of tasks. The memory is the storage capacity of the mind. Often neglected, often unappreciated until something occurs to make us take notice of it.

5.1.2 Mnemonics:

Thus, it becomes important to give a serious thought to memory and memorization. If memorization is the doorway to all mental and physical activities, it should be learnt in a systematic manner. There are various techniques through which this is possible. Mnemonics are memory techniques which make the process of memorization interesting and effective. These are methods in which any given information can be memorized using principles of association, attention, organization, meaningfulness and visualization.

Memory is formed from the time that we are born and it is a continuous process of events, experiences and situations which we receive through the senses. This vast information should be stored in a systematic manner so that it can be easily retrieved when necessary. This is like trying to locate a particular book from a huge library. If there is a proper catalogue, list made with reference to either subject, title or author of the books then finding the book is a very simple task but if all these lists or catalogues are unavailable, locating the book becomes a very tedious and confusing job.
Mnemonics are like these catalogues which help us memorize information in such a manner that it is stored in a very systematic method so that retrieving it is a simple task.

5.1.3 English Language Spellings

There are 26 letters, 44 sounds made by 5 vowels and 21 consonants in the English language. These form more than 2,50,000 words that make the English language and are listed in the Oxford Dictionary. English language used today is a result and product of many influences over the ages. Every Invasion, Revolution, Colonization and Migration which marked the events in History of the world left some traces in the English language in the form of new vocabulary which kept enriching this lingua franca.

As a result of this we see that the English spellings are very unsystematic. Some are based on Phonology, some are orthographic, and some have remained in their original forms, belonging to some other language from which they have been adopted. This also makes it difficult to memorize spellings as a particular rule cannot be applicable to their formation. Due to this spelling memorization has always been a challenge to teachers and learners.

5.1.4 Memory model

Every teacher uses a specific method to teach any given content. The methodology that the teacher follows is usually that which is learnt in teacher education. Over a period of time, the teacher modifies the various methodologies learnt on the basis of important factors like responses given by the students, challenges faced by the teacher, learning outcome, time factor and constitution of the students in the class. In a similar manner, methodologies which are researched and tested form models of teaching which can be followed by any teacher to seek predictable outcomes.
One such model which was used by the researcher was “The memory model”. This model was implemented following the steps given below.

The syntax of this model is:

Step 1 : Attending to the material. This is done using the techniques of underlining, listing, reflecting.

Step 2 : Developing connections. Make the material familiar by making connections using key words, link word system, or other mnemonics.

Step 3: Expanding Sensory Images. Techniques of exaggeration and ridiculous association are used. Images are revised.

Step 4: Practicing Recall. Practice recalling the material until it is completely learned.

5.1.5 Views of the researcher; Need & Significance of the present study:

Spellings are the building blocks of the English language and so they have to be learnt and used correctly while writing. But has the importance of teaching students to spell accurately been lost in the age of computers, spell checkers and SMS texting? Is spelling instruction being considered marginally important in schools today? The practices associated with traditional approaches to spelling instruction suggest that schools and teachers might place less value or importance on spelling as compared to other academic content areas. Usually in the lower classes a weekly spelling test is conducted for which the students are either given a list of words to memorize or the particular lesson in the text book on which the test is scheduled is assigned to the students for study. Many times this approach leaves the students to mechanically memorize the spellings for the test after which the words are forgotten easily. This leaves students as poor achievers as eventually the memorized spellings are forgotten and it also disorients teachers as far as the teaching of memorizing of spellings is concerned. Additionally the conventional wisdom
regarding the English spellings pattern is that they make no sense. No wonder a number of adults and students have trouble with spelling.

The significance of this research study is that the researcher has tried to teach the students to establish sense, and create meaning regarding a few spellings through Mnemonics. The knowledge of Mnemonics helped the students to work at their individual level to create their own personal associations to memorize spellings. These Mnemonics once taught can be used by them for any information that they need to memorize. These techniques will assist them through the enormous amount of information that they will encounter during their lives.

5.1.6 Statement of the Problem

To study the effectiveness of Memory Techniques and memory based model in memorizing of spellings for Std VI students.

5.1.7 Definitions

5.1.7.1 Conceptual Definitions

Effectiveness: A measure of the extent to which a specific intervention, procedure, regimen or service, when deployed in the field in routine circumstances, does what it is intended to do for a specified population.

Mnemonics:

Methods for aiding the memory

Any of several techniques or devices used to help remember or memorize names or concepts

Memory: The ability of the Brain to store, retain and subsequently recall information.
**Memorization:** Actively organizing and working with concepts or terminology to improve incorporating these concepts into memory.

### 5.1.7.2 Operational Definitions

**Effectiveness:** The strength of the learned response gathered after the implementation of the program based on Mnemonics and Memory Model.

**Mnemonics:** Certain Memory Techniques like Pyramid, Chunking, Acronym, Picture Making which aid in remembering English spellings

**Memory model:** A model of learning based on the memorization abilities of students to help them to memorize given spellings.

**Memorization:** The process of storing and retrieving spellings.

**Spellings:** Meaningful sequence of alphabetical letters

**Standard VI students:** Students who have passed their Std V examination and are studying in Std VI of SSC Board English Medium School

### 5.1.8 Research Objectives

1. To study the difference between spelling ability of boys and girls through their pre-test scores.

2. To prepare a program on Mnemonics and Memory based Model for learning English spellings.

3. To study the effectiveness of the memory model on the memorization skills of the students through post test.
4. To study the effect of the program on the spelling ability of boys and girls through their post test scores.

5.1.9 Research Assumptions

- Students have to learn new spellings in schools.
- Students make mistakes in writing correct spellings
- Memory techniques can effectively help in recollection of spellings
- Memory model can enhance memorization skills in students.

5.1.10(A) Research Hypotheses

1. There will be a significant difference between scores of boys and girls before the implementation of the program.

2. Program based on Memory techniques and Memory model is effective in memorizing English spellings.

3. There will be a significant difference between scores of boys and girls after the implementation of the program.

5.1.10 (B) Null Hypotheses

1. There will be no significant difference between scores of boys and girls before the implementation of the program.
2. Program based on Memory techniques and Memory model does not have significant difference in learning English spellings.

3. There will be no significant difference between scores of boys and girls after the implementation of the program.

5.1.11 Scope

- This research study was applicable to std VI students of Maharashtra state board schools.
- This research focused only on the various spellings that the students learn till std VI.

5.1.12 Limitations

Some limitations of this study were

- It is difficult to provide attention to students individually.
- Various factors like age, maturity, attention, interest, fatigue on the part of the students cannot be controlled.

5.1.13 De Limitations

- The research study was limited to students of English medium schools in Pune city.
- The research study was limited to students of std VI of English medium schools.
- The study focused on memorization of spellings.
Only memory techniques and memory model was used.

5.1.14 Review of the related literature

The researcher visited various libraries and websites in search of any literature/theses in the field of Mnemonics and memorization of spellings. The researcher was able to find considerable work and research being done in the teaching and learning of spellings. A thorough reading of the material showed that researches had been made on various types of spellings by identifying the pattern in their formations and various ways of teaching them to the students so that memorization would be effective. The different types of spelling formations that the researcher came across were inventive spellings, inflectional suffixes, morphography of spellings, word mapping in spellings and use of phonology in spellings.

The researcher could also study the different approaches that had been investigated by different educationists and linguists to teach spellings effectively. Methods like word sorting, inflectional spellings, whole person approach, use of word Olympic games, repetition, intentional spellings were understood. Through all the study material, the researcher came to know that specific visual Mnemonics had also been used for better spelling.

Although work had been done on the process of teaching and learning spellings, with rare contributions through Mnemonics, the researcher was unable to find the use of memory model as a teaching technique in spellings. The Mnemonics used by some researchers were very specific and their studies were limited to use of a single Mnemonic for the study. This made the researcher probe into thinking about the effectiveness of using Memory model for teaching spellings.

To provide the students with alternative ways of creating and using Mnemonics, the researcher decided to use five different Mnemonics through the Memory Model to teach students an effective way of memorizing spellings.
The given table is an overview of the various types of research and study material scrutinized by the researcher.

Table 5.1

Overview of types of related researches scrutinized

<table>
<thead>
<tr>
<th>Area Of research</th>
<th>Type of work</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ph.D. Theses</td>
</tr>
<tr>
<td>Memory and Mnemonics</td>
<td>3</td>
</tr>
<tr>
<td>Mastering Spellings</td>
<td>2</td>
</tr>
<tr>
<td>Strategies Used to spell</td>
<td>2</td>
</tr>
<tr>
<td>Classroom Instructions and</td>
<td>6</td>
</tr>
<tr>
<td>Meeting the needs of diverse</td>
<td>1</td>
</tr>
<tr>
<td>Study of spellings</td>
<td></td>
</tr>
</tbody>
</table>

5.1.15 Research Methodology

The study followed Experimental method of research.

The effectiveness of the memory techniques and memory based model on the memorization of spellings of the students was studied.

The research design for the study was Single group Pre test - Post Test design.

A sample of 53 students studying in standard VI of Jnana Prabodhini English Medium High School, Nigdi, Pune was chosen for the study.
5.1.16  **Program based on Mnemonics and Memory Model**

The study of related literature and researches helped the researcher to develop the idea of preparing a program based on the memory model and Mnemonics to teach English spellings to Std VI students.

As mentioned earlier, the researcher had decided to use 5 different Mnemonics through the Memory Model for this research. The five Mnemonics chosen were

- Pronunciation (Phonology)
- Acronyms
- Picture making
- Chunking
- Pyramid

It was necessary to know the extent to which the students were acquainted with spellings. Hence, a Pre Test Examination paper was prepared. Since, there was no standardized spelling test available, the researcher prepared a 100 marks spelling test based on the spellings learnt by the students till Std V. This test was verified by English language teachers and teacher educators.

A program consisting of 32 teaching periods of 30 min each was prepared and followed by the researcher. The researcher and the students studied and implemented the various Mnemonics that were taught. The students understood the Mnemonics and started enjoying the process. The researcher used many teaching aids which is a need of the Memory Model. The use of teaching aids, the imagination involved in Mnemonics and hands on experience given to every student proved to be beneficial for all the different type of learners that formed the group. This made the entire program successful as it catered to the needs of students who were different types of learners.
To conclude the program effectively, the researcher organized an exhibition in the school. In this exhibition, all the teaching aids used during the program, charts giving details about Mnemonics and spelling rules were displayed. The process of memorization was also explained and so were the various factors, activities and diet that contributed to healthy and enriched memory. All these were displayed for all the students, teaching and non teaching staff. As the exhibition was organized on an Open house day, the parents who came to the school also could benefit. This exhibition reaffirmed the importance of memory and made the visitors study the exhibits with curiosity and interest.

A Post test was prepared based on the same guidelines as followed in the Pre test. Post test was implemented on the same students who attended the program.

5.1.17 Data Analysis

5.1.17.1 Tools used for the study

- Pre test
- Program prepared on Mnemonics and Memory Model
- Post Test

Statistical Tools:

- Mean of Pre test and Post test scores.
- Standard Deviation values of Pre test and Post test scores.
- ‘t’ test
5.1.18 Findings of the statistical treatment

Following were the findings of the statistical treatment

Table 5.2

Findings of Data Analysis

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Hypothesis/ Objective</th>
<th>t' value</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hypothesis 1: There will be a significant difference between scores of boys and girls before the implementation of the program.</td>
<td>2.976</td>
<td>There is a significant difference between scores of boys and girls before the implementation of the program.</td>
</tr>
<tr>
<td>2</td>
<td>Hypothesis 2 : Program based on Memory techniques and Memory model is effective in memorizing English spellings.</td>
<td>9.459</td>
<td>There is a significant difference in the scores of pre test and post test of the total group</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>9.305</td>
<td>There is a significant difference in the scores of pre test and post test in case of Full Word questions</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>4.663</td>
<td>There is a significant difference in the scores of pre test and post test in case of questions on words with 1 alphabet less</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>2.866</td>
<td>There is a significant difference in the scores of pre test and post test in case of partial word questions</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>8.587</td>
<td>There is a significant difference in the scores of pre test and post test in case of memory questions</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>5.926</td>
<td>There is a significant difference in the scores of pre test and post test in case of boys</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>8.938</td>
<td>There is a significant difference in the scores of pre test and post test in case of girls</td>
</tr>
</tbody>
</table>
5.1.19 Findings made during research work

1. Memorization is the initial step towards enhancing the learning process and eventually intellectual abilities.

2. Script writing improves spelling as a comparison with printed words (Bhatia and Bhatia, 2007, Page 332)

3. Factors contributing to good memory are health of the learner, attentiveness of the learner, distinct and vivid impressions and repetition insights.

4. Factors for improving memorization:
   5. Browse through a good dictionary
   6. Introduce a fixed number of new words into your vocabulary every day
   7. Be conscious about new words in the language.
   8. Learning a musical instrument or music can improve the memory
   9. A good diet and exercise helps your memory as you age
   10. Sufficient sleep improves memory
   11. Calculations may harm your short term memory
   12. Dieting affects the memory adversely
   13. Small children have better memories than their parents.
14. Caffeine can improve memory
15. Forgotten memories can be accessed through hypnosis
16. Stress can make you forgetful temporarily
17. Ecstasy can also make you forgetful temporarily
18. Noisy places make it harder to remember
19. Horses have a good memory
20. Playing Bridge can boost the memory
21. Learning a new language enhances memory
22. Cooking is a cure to memory loss
23. Herbs like Turmeric, Ginger and Cinnamon improve memory
24. Meditation, “Pranayam” (Breathing exercises) and Yoga are useful for healthy memory
25. Vitamin B is a miracle memory supplement
26. Solving puzzles, Preparing Jigsaw puzzles and working on Crosswords or Sudoku provide the Brain with necessary exercise to enhance and enrich memory.

5.2 CONCLUSIONS

The complete study has been a learning experience. Right from the time that the idea was conceived till the program reached its final stage of report writing, every moment proved enriching as it gave an insight into several things like the working of the mind, the interest, potential and inclination of the students and the pitfalls of the current educational pattern.
While studying for the preparation of the program on Mnemonics through the Memory Model, the researcher found facts based on research work and articles, that rote learning is uninteresting and temporary. The program made the children participate actively (both physically and mentally) in the learning process. Thus, the learning became interesting, innovative and permanent.

The experience gained by the researcher during the classroom interactions was both demanding and encouraging demanding. Once the children were introduced to the various memory techniques it made them more imaginative, participating and experimenting. Their positive attitude and enthusiasm was enough receipt about the success of the program. Every new technique introduced brought lots of feedback in the form of questions, ideas, inquiries and prompt implementations.

5.3 EDUCATIONAL IMPLICATIONS OF THE STUDY

If Mnemonics is introduced in the school curriculum then it will be a bold step towards child centered education. Students will get ample opportunities to use their imaginative, creative and intellectual powers.

From the teacher’s point of view too, this program will prove helpful as the teacher can rely on Mnemonics to make the learning of any study material interesting and permanent. The teacher can also use his/her imaginative and creative skills to prepare new strategies for memorizing.

The lesson plans can be prepared in such a manner that Mnemonics applicable to the particular topic can be introduced while teaching the lesson itself making memorization a part of the teaching-learning process, whenever necessary.
Mnemonics is not topic or subject bound, but it can be extended and applied to any topic, subject or learning material.

Mnemonics does not have any age limit. It can be taught and used by anyone and everyone belonging to any age group.

Spellings should be taught through Mnemonics by language teachers as a regular practice of teaching learning.

Language teachers should have a course on Mnemonics during their pre-service training.

School curriculum should include Mnemonics as they will assist the students for processing the information throughout their life.

5.4 SUGGESTIONS FOR FURTHER RESEARCH:

1. A study of the effectiveness of the Memory Model in different school subjects and various contents.

2. A study of the effectiveness of Mnemonics on various school subjects.

3. A comparative study of the effect of Mnemonics on both English medium and vernacular medium students.

4. A study of the effectiveness of introducing Mnemonics during the teacher’s training program.

5. A comparative study of the effectiveness of introducing Mnemonics during pre-service training and in-service training.

6. To study the effect of Mnemonics to develop creativity in school children.
7. To study the effect of Mnemonics on the learning outcomes with regards to all subjects and content.

8. Retention studies can be conducted on topics taught through memory model.

5.5 EPILOGUE

Memorization of English spellings poses a problem for most of the students. A few techniques of memorization are used by teachers during the primary stages of education when English language is introduced. The students, then, fend for themselves and device methods to memorize spellings. Some succeed, some do not. The want for teaching proper methods for memorization, not only for spellings, but also for various other subjects and data is not catered to in our curricula.

This study gave the researcher an opportunity to study the process of memorization and look at it creatively so that methodologies could be created to make it interesting and meaningful. The entire process from thinking about the topic of study to planning and implementing it became a thought provoking activity.

The report writing with data analysis gave meaning to all the different ideas conceived and practiced in the classroom. Every moment was cherished as it gave a deep understanding of so many aspects like teaching learning, interest, creativity, establishing meaning, expecting right responses and once they were found, their analysis and the wonderful experience of working with young genius minds who kept the researcher busy outside the classroom also.

This study has shown a new path which leads towards higher levels of thinking which are possible only through meaningful understanding and use of the right memory at the right time.