



REVIEW ARTICLE

MNEMONICS, CHUNKING AND MIND-MAPPING: ITS EFFICACY IN ENHANCING MEMORY BASED ON THE PREFERRED LEARNING STYLES OF THE FIRST YEAR UNDERGRADUATE NURSING STUDENTS

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ABSTRACT

Background- Memory demands for students are much more than they are for working adults^[1]. One of the most commonly described problem of students is the inability to retain large volume of academic content. Therefore, it is imperative for all students to have good memory for better academic achievement. The present study attempts to assess the efficacy of mnemonics, chunking and mind-mapping in enhancing memory based on the preferred learning styles of the first year undergraduate nursing students.

Aim: The main aim of the study is to assess the learning style of the students and to assess the efficacy of mnemonics, chunking and mind-mapping in enhancing memory of the first year undergraduate nursing students.

Design: A descriptive and a pre-experimental one group pre-test and post-test research design was adopted for this study.

Sample: A simple random sampling technique was used to fetch a sample of 100.

Materials: A Modified Honey-Mumford 40 item learning style questionnaire was used to identify the learning style preferred by the students and a Structured Knowledge Questionnaire was used for assessing the memory of the students. The reliability of Modified Honey-Mumford LSQ was found to be .86 by using Cohen's kappa Coefficient test and that of Structured Knowledge questionnaire was found to be .96 by using Karl Pearson's formula.

Results: Out of 100 subjects, 30% of the first year undergraduate nursing students preferred activist style, 26% of them preferred the pragmatist style, 23% of them preferred the reflector style and 21% of them preferred the theorist style. In pretest, 25% of the first year undergraduate nursing students had poor memory (score 0-10), 68% of them had average memory (score 11-20) and 7% of them had good memory (Score 21-30). In posttest, 20% of them had average memory (score 11-20) and 80% of them had good memory (Score 21-30). This indicates that the memory of the first year undergraduate nursing students improved remarkably after using mnemonics, chunking and mind-mapping study techniques.

Conclusion: This study concludes that mnemonics, chunking and mind-mapping are effective in enhancing the memory of all students irrespective of their learning styles.

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INTRODUCTION

In an era of over loaded information, an effective and efficient memory is critical for student's success. Thus, mnemonics chunking and mind-mapping are some of the memory enhancement techniques which can help the students to remember and recall the knowledge that they have learned. Many studies have found these techniques to have significant effect on student's learning. Mnemonics is one of the oldest technique used for encoding and remembering information

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(<https://www.mindtools.com>> Learning Skills> Memory Techniques) and mnemonics have been proven to be very helpful in learning the hybrid introductory statistics course in Eastern United States University (Mocko Megan 2017). Chunking on other hand helps the learner to retain information by breaking the information into bits and learning it bit by bit (www.psychology4all.com/fivememorytechniques.html). A small-scale exploratory study conducted by Mine Munyofu, (2007) revealed that chunking strategies facilitated higher enhanced learning (Munyofu, Mine, 2008). Mind-mapping is the process of creating mind-maps usually with a central idea placed in the middle and associated ideas arranged around it (http://en.oxfordictionaries.com/definition/mind_map) and it is

said to have a positive effect on teaching and learning (Ying Liu 2014).

Problem Statement: “A study to assess the efficacy of mnemonics, chunking and mind-mapping in enhancing memory based on the preferred learning styles of the first year undergraduate nursing students studying in the selected nursing colleges of Pune city”

Objectives: This study was conducted with the main purpose to assess the learning style preferred by the first year undergraduate nursing students and to determine the efficacy of mnemonics, chunking and mind-mapping in enhancing memory.

MATERIAL AND METHODS

A descriptive and Pre-experimental research design was selected for this study. Under the Pre-experimental research design one-group pretest and post test design was adopted. Further, Probability simple random sampling techniques was used to grab a sample of 100. The participants of this study comprised of first year undergraduate nursing students studying at Symbiosis College of Nursing, St. Andrews College of Nursing and Temi Grant Institute of Nursing Education, Pune, who had attended lectures on Nervous System from their respective teachers. On day one of the study a Modified Honey-Mumford Learning Style 40 item Questionnaire was used to assess the preferred learning styles of the students and the students were categorized into the four types of learners such as Activists, Reflector, Theorist and Pragmatist depending on their maximum score on any of these four quadrant of learners. On day two, the students memory on nervous system was assessed using a 30 item structured knowledge questionnaire based on nervous system. On the third day the students were taught nervous System using mnemonics, chunking and mind-maps study techniques and after seven days posttest was conducted.

Major Findings: 100 subjects participated in this study, out of which 20 subjects were male and the rest 80 subjects were female. The findings of this study can be best described under two headings: Preferred Learning Styles of the students and Effectiveness of Mnemonics, Chunking and Mind-mapping in enhancing memory of the first year undergraduate nursing students.

Preferred Learning Styles of the students: Analysis revealed that out of 100 subjects, 30% of the first year undergraduate nursing students preferred activist style, 26% of them preferred the pragmatist style, 23% of them preferred the reflector style and 21% of them preferred the theorist style (Table 1).

Effectiveness of Mnemonics, Chunking and Mind-mapping in enhancing memory: As mentioned earlier a structured knowledge questionnaire was used to assess the memory of the first year undergraduate nursing students and the findings of which revealed that in pretest, 25% of the first year undergraduate nursing students had poor memory (score 0-10), 68% of them had average memory (score 11-20) and 7% of them had good memory (Score 21-30). In posttest, 20% of them had average memory (score 11-20) and 80% of them had good memory (Score 21-30). This indicates that the memory of the first year undergraduate nursing students improved remarkably after using mnemonics, chunking and mind-

mapping study technique (Figure 1). Further, this study also proved that mnemonics, chunking and mind-mapping was effective in enhancing the memory on all types of learners (Figure 2)

Table 1. Frequency Distribution Of Students' Learning Style

Learning style	Freq	%
Activist	30	30%
Pragmatist	26	26%
Reflector	23	23%
Theorist	21	21%

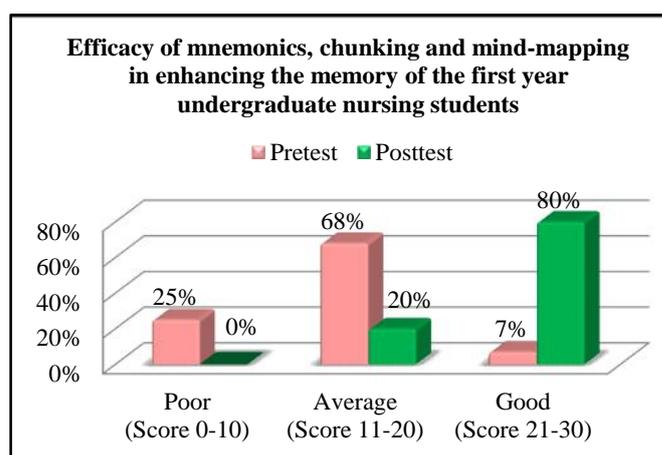


Figure 1. Distribution of Pre-test and Post-test Memory Score

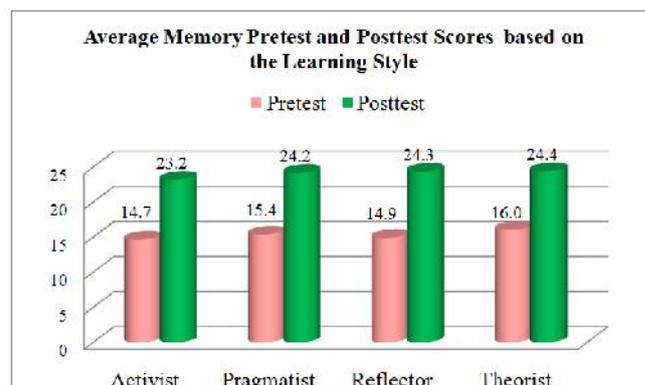


Figure 2. Distribution of Pre-test and Post-test Average Memory Scores based on the Learning Style

Conclusion

This study concludes that students can have preference for different types of learning styles and memory enhancement techniques such as mnemonics, chunking and mind-mapping irrespective of the learning styles preferred by the students are helpful in enhancing their memory thus assisting them to have better academic achievements. Keeping in view the significance of study techniques such as mnemonics, chunking and mind-mapping in enhancing students's memory, every institution should encourage their pupils to adopt such memory enhancement techniques to make their learning easier, better and effective in the long run.

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