

Recalling the Definitions with a Mind Mapping and Self-Learning Technique: A Comparative Study in Undergraduate Students

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Abstract

Around 13.34% weightage is given to the definitions of university exams in nursing.¹ Nursing educators need to help the students in memorizing terms, so that students can write the correct concept in the exam effectively. **Aim:** To assess the comparison of mind mapping and self-learning techniques in recalling the definition. **Design :** A comparative approach was used to understand the difference between the knowledge of self-learning group and mind mapping group . Total 5 definitions were used from the nursing foundation textbook .To obtain baseline data, subjects completed a short test and it is randomly allocated to two groups: 'self -learning' and 'mind map'. After a one hour of study period short test was taken. Recalling was measured after a week later. Setting: Symbiosis College of Nursing, Symbiosis International University, India. **Subjects :** 48 First year Bachelor Nursing Students. **Results:** Mean score in Mind mapping group were 5.87 and 5 in session one and two . For self-learning group, the mean effect was 6.21 and 4.67 in the first and second sessions. Hence Mind mapping technique proven to be more effective than Self learning method in recalling the definition. Two sample t-test for comparison of effect of Mind mapping vs self-learning method.t-values for this comparison were -0.76 and 0.62 . Corresponding p-values were 0.45 and 0.54 and the p-value < 0.05 , so the null hypothesis is rejected. **Conclusion:** mind maps were proved affectivity as a way of recalling the definitions in the second session. Students need to be encouraged to adopt this approach more than the other conventional learning techniques.

Keywords: ,Nursing , Mind mapping, Self learning

Introduction

Patient care has taken a courageous change in recent years but teaching and learning styles are almost the same in students and teachers. Nursing teachers who use active learning approaches in their nursing classes can teach to a range of students: visual learners, auditory learners, tactile learners². Lifelong learning is anticipation in the professional performance of nurses, which is directly related to the success of students in nursing schools and colleges.

A mind map can be expressed as a central image with sub themes radiating from the central image, branches with key images and key words and branches forming a connected nodal structure ³. Mapping procedures have been initiated to motivate students to

represent ideas visually, thus causing them to analyze, evaluate, and think critically ⁴. The goal of this strategy is for the students to learn through actively connecting new concepts to existing concepts⁵.

Self-learning effects active learning and students achieve more thoughtful points of view about the topics instead of having a superficial attitude and come to a deep understanding of their learning materials. Moreover, independent learning lets the students take the responsibility of their thought process and participate actively in the learning process. This increases the sense of belonging to learning and enhances the students' positive motivation ⁶.Self-directed learners are usually characterized as being independent and positive towards learning ⁷. It is also believed that they can plan, manage, and evaluate their own learning ⁸.

In this competitive era, it is essential to transform our nursing students from textbook muggers and encourage for critical thinking. The teaching and learning strategy to support the capacious amount of course material, needs to be completed in the four years⁹. Nursing syllabus always allows various teaching pedagogies including lecture cum discussion, Project work, seminar, case study, presentations, demonstration, role play, group discussion etc.¹ Simply teaching a concept to a student or learning a theory will not help the students. Student Nurses need to engage in the activity of learning to understand it and use that knowledge in life science. Around 13.34% weightage is given to the definitions of university exams. Student nurses are forced to learn the definitions which is difficult in many times. Teachers need to help them in memorizing terms, so they can spit that concept in the exam effectively. To promote recall and memorization students require active teaching strategies to promote meaningful learning, instead of relying on traditional methods. The present study was aimed to assess the comparison of mind mapping and self-learning technique in recalling the definition.

Objectives:

1. To assess the effect of the mind mapping technique to recall the definitions for nursing students.
2. To assess the effect of the self-learning method to recall the definitions for nursing students.
3. To compare the effect of mind mapping technique and self learning method to recall the definitions for nursing student
4. To associate the demographic details with the selected findings of the mind mapping technique and self-learning technique.

Method and design:

The researcher adopted Pre experimental two group comparison design among first year BSc nursing students in Pune city. The tool was validated with 6 experts, who all are the teaching faculty of the various nursing institutes in Pune. Face validity and content validity checked. The total batch strength is 50 at Symbiosis College of Nursing during November 2019. Convenience sampling technique was used to select the

samples. All students who are willing to participate in the study were included in this study and the students who all are absent and not ready to participate in the study were excluded from the study. Total 48 students participated in the study. 2 students were absent during the data collection.

The tool consist of 2 sections. Section i: Socio demographic profile which consist of age, higher education, and gender. Section ii: Self structured questionnaire. (5 definitions are asked to the students. They are **health, hospital, communication, nursing and infection**)

Informed written consent was taken from all the students. Total 2 hours utilized by the researcher. Total participants (n=48) distributed into 2 groups with the lottery method. 24 students in mind mapping group and 24 students in self-learning group. Each group was sitting in a different class room. The researcher took 15 minutes to explain the session to the students. Five definitions were taken from the subject nursing foundation. health, nursing, infection, hospital and communication were given to students of self-learning group. At the same time in the mind mapping group mind mapping method was explained and given the same definitions like self-learning group. For mind mapping group pencil, scale, crayons and sketch pens are distributed by the researcher. Both group students were supervised during this activity. The questionnaire had given to the students after one hour. Each right response carried 2 marks. The knowledge of the students was assessed on Day 0 (immediately after intervention) and on Day 7. During the second session after 7 days students got 5 minutes to recall the definition. There were no students dropped out of any of the sessions.

Variables :Independent variables in this study were mind mapping and self- learning and dependent variable is level of knowledge.

Hypothesis : Ho=There will be no significant change in the level of knowledge and the type of learning.

Results

A total of 48 participants were recruited and randomized into two groups of 24 each.

Table 1 : Demographic details of mind mapping and self-learning group n=48

Sr. no	Demographic variable		Frequency		
			(Mind Mapping Method)	(Self-learning Method)	
1	Age	a.	Below 18years	9	10
		b.	18years- 19years	8	9
		c.	19years- 20years	4	3
		d.	20years and above	3	2
2	Education	a.	CBC board	14	8
		b.	State board	8	12
		c.	International	2	4
3	Gender	a.	Male	7	6
		b.	Female	17	18

Both the groups, there were (n = 12) males and (n = 35) females. 19 students were below 18 years, 17 students are between the age group of 18to 19 years . 7 students were 19 years to 20 years and 5 students above 20 years. 22 students were passed from CBC board, 20 students were from the state board and 6 students completed their studies from the international board

Table 2 : Comparison of Mind mapping and self-learning session n=48

Sr. no	Knowledge Score	Mind mapping				Self-learning method			
		1st session		2nd session		1st session		2nd session	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	Good	15	31.25%	9	18.75%	16	33.34%	5	10.41%
2	Average	6	12.50%	9	18.75%	7	14.58%	13	27.08%
3	Poor	3	06.25%	6	12.50%	1	2.08%	6	12.50%

The table 2 shows the comparison of the rating of the two learning methods given by the students on the knowledge score. Total two sessions were taken . In the first session , on the day of intervention self learning group scored well. Good knowledge score achieved by 16 students (33.34%). Poor score taken by one student (2.08%). In second session (after 7 days), 5 students achieved a good score while 13 students scored averaged

and 6 students taken poor scores. In the mind mapping session first session 15 students taken a good scores (31.25%) and 6.25 % (n=3) received poor scores. In the second session 18.75 % students received good scores and 12.50 % students received poor scores. But the second session Mind mapping group showed improvements than the self- learning group and the mean score difference is 0.33.

Table 3: Comparison of t score in mind mapping and self-learning group

Sr. no	Session	Mind mapping		Self-learning Method		T	p-value
		Mean(μ)	SD(σ)	Mean(μ)	SD(σ)		
1.	First session	5.87	1.69	6.21	1.25	-0.76	0.45
2.	Second session	5	1.93	4.67	1.72	0.62	0.54

Mean score in Mind mapping group were 5.87 and 5 in session one and two . For self learning group, the mean effect was 6.21and 4.67 in first and second sessions. Hence Mind mapping technique proven to be more effective than Self learning method in recalling the definition.

Two sample t-test for comparison of effect of Mind mapping vs self-learning method.t-values for this comparison were -0.76 and 0.62 . Corresponding p-values were 0.45 and 054 and the p-value < 0.05 , so the null hypothesis is accepted

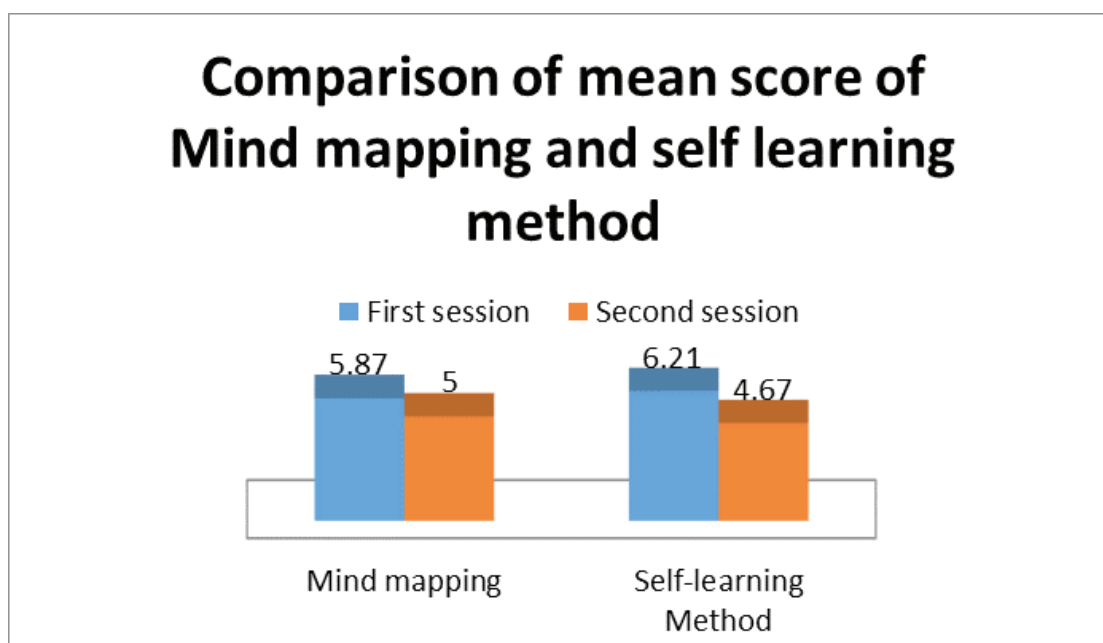


Figure 1 Comparison of mean score of mind mapping and self-learning method.

Table 4 : Association between the Self learning and selected demographic variables

Sr. No	Demographic variables for Self learning method group in the first session			Good	Average	Poor	p-value
1	Age	Below 18 years	9	7	1	1	0.75
		18years- 19years	8	4	2	2	
		19years-20years	4	2	2	0	
		20years and above	3	2	1	0	
2	Higher education	CBC board	14	9	3	2	0.87
		State board	8	4	3	1	
		International	2	2	0	0	
3	Gender	Male	7	6	1	0	0.53
		Female	17	9	5	3	

Table 5 : Association between the Mind mapping and selected demographic variables

Sr. No	Demographic variables for Mind mapping group in the first session			Good	Average	Poor	p-value
1	Age	Below 18 years	10	8	2	1	0.92
		18years- 19years	9	6	3	0	
		19years-20years	3	2	1	0	
		20years and above	2	1	1	0	
2	Higher education	CBC board	8	6	1	1	0.45
		State board	12	8	4	0	
		International	4	2	2	0	
3	Gender	Male	6	5	0	1	0.10
		Female	18	11	7	0	

None of the demographic variables was found to have a significant association with mind mapping and self-learning technique knowledge score and demographic variables.

A surprising finding was that enthusiasm in the self-selected study technique group was significantly higher than that in the mind map group in the first session. But in the second session recalling was upright with mind mapping group. That improvements in recall at a week re-test remained evident with just a single exposure

to the mind map technique suggests a real benefit of this study technique compared with other memory strategies where benefits have been confined only to tests of immediate recall. Study techniques which have separately incorporated imagery, colour or the visual-spatial arrangement of keywords have each been

reported to significantly improve recall when compared with simple note taking or rote rehearsal⁹.

Summary : Mind maps are an effective study technique when used to improve factual recall from written material. Mind mapping facilitates the development of reflective thinking and deeper understanding and it helps learners to focus on a topic and solve a difficult topic in fun and creative way. More effort should be spent to support different approaches of learning compared to the traditional education strategies, especially here in India where lecture based teaching method predominates. So as both the teacher and the student have a better appreciative subject knowledge gained by this innovative teaching and learning method.

Recommendation

According to Blooms taxonomy, the order of thinking skills in increasing order (lower to higher)³. This study examined the remembering (Lower order thinking skills) part only. There is a need for advance studies to check the effect of the mind map strategy on higher order thinking skills like creative thinking

Ethics: This present study got approval from Symbiosis College of Nursing ethics committee. All participants who participated in this study was well informed about the study and a written consent is taken from them.

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