

Students Learning Outcomes in Response to Lecture Method and Jigsaw Teaching Methods

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Abstract:A comparative study was conducted in the month of May 2014 on 95 student nurses who were selected through simple random sampling technique from a selected college of nursing, Dehradun, Uttarakhand. The study aimed to compare the level of effectiveness between two teaching methods including modified teaching as jigsaw method and lecture as traditional method in a large group. B.Sc. Nursing 2nd year students were selected through simple random sampling. Group of 100 B.Sc. nurses was selected through simple random sampling, and further it was divided into two groups.

Group were selected by lottery method and divided into experimental group (n=48) and control group (n=47). Result findings suggest that in both the group majority of the students were females. Experimental group was taught by modified teaching which included Jigsaw method, and control group was taught by traditional teaching. Although the active learning approach does not show statistical significance over traditional teaching methods of the subject, but students find the modified teaching more interesting and innovative comparing to traditional method.

Key Words:Traditional Teaching, jigsaw method, large group

I. Introduction

In higher education teaching plays a vital role in learning outcomes. Its effectiveness depends on how much has been received by the students or the target audience. There are various methods of teaching such as lectures, tutorials, seminars, by having a panel of experts, brainstorming, videotapes, class discussions, small group discussions, case studies, role playing jigsaw method etc. among the medical and dental colleges in India. In most of the professional colleges lecturing to a large classes are the usual mode of teaching and teaching is only limited to the bed side clinics. Lecturing on large group teaching is one of the oldest forms of teaching. It has been perceived as lectures are an efficient means of transferring knowledge and concepts to large groups. They can be used to stimulate interest, explain concepts, and provide core knowledge and to direct student learning.¹

Class sizes are reaching unprecedented levels. Concurrently, institutions of higher education are pushing faculty to become better teachers and to deliver higher levels of quality and value in the classroom. Delivering quality and value to a large class presents unique challenges. Therefore, it is crucial for faculty to identify viable methods of instruction for large classes.²

For professors, the large undergraduate classes can be some of the most difficult classes to teach. This report outlines the methods that professors in developed countries like the United States, Australia, Canada, and the United Kingdom have used to overcome and create effective learning environments included simple teaching and organizational strategies and a variety of new technologies to enhance the learning environment.³

Due to huge imbalance in students and teacher ratio have increased the accountability pressure on universities. As a result, the university initiated a policy to promote 'large classes' as it is believed to be a solution of the problems of increasing student numbers.⁴ Many large-class modules are introductory and intended for first-year undergraduate students for whom learning in a large class is a new experience. As a result, some students feel anonymous in the lecture and this anonymity may make it harder for them to remain motivated to keep up. Also many students in large classes feel too intimidated to ask questions or, when too overwhelmed by the material, to approach the lecturer or others for help.⁵

In tertiary level education the issue of class size and its impacts on student learning has been an issue of debate. Although research carried out on the effects of large classes on student performance is inconclusive, much evidence does recognize that large class size as a deterrent to students' active learning.⁶ A study conducted

to identify effective teaching methods for the large class environment with several commonly used teaching methods (lecture, lecture/discussion combination, jigsaw, case study, team project) were applied. The findings suggest that moderately-active learning methods such as the jigsaw method are more effective than the lecture, discussion, and case study methods.⁷

The traditional passive view of learning involves situations where material is delivered to students using a lecture-based format. In contrast, a more modern view of learning is constructivism, where students are expected to be active in the learning process by participating in discussion or collaborative activities.

In large groups Jigsaw method is a very useful tool for trying to help student's integrated knowledge and understanding from various sources and experts. Large classes are found in institutions the worldwide. Since we cannot wish large classes away, we have to devise techniques for delivering good quality education in such settings. This module is to assist those teachers who have responsibility for teaching large classes to do so with a smile.

Beyond the available literature and many website links that discuss the topic, is there anything more that can be done to ensure that meaningful learning takes places in large classrooms. How do we harness the information, organize and use it to build a comprehensive and systemic approach towards dealing with large classes. What would be the solutions contextualized for specific settings. Being a part of a large class, researchers decided to explore the effective teaching methods which may be beneficial and will help to improve the quality and standards in nursing education, Hence researchers choose this topic.

1.1 Problem statement

A comparative study to assess the effectiveness of traditional and modified teaching on the knowledge of large group, among student nurses in selected College of Nursing, Dehradun, Uttarakhand

1.2 Hypothesis

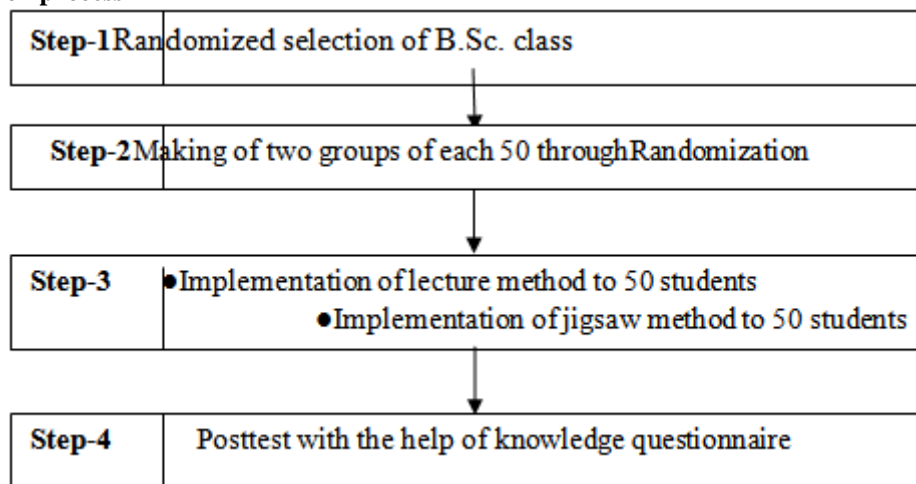
H₁. The mean post- test knowledge score of modified teaching method will be significantly higher than the traditional teaching method in Experimental and Control group.

H₂- There will be significant association between posttest knowledge score and selected demographic variables of control and experimental group.

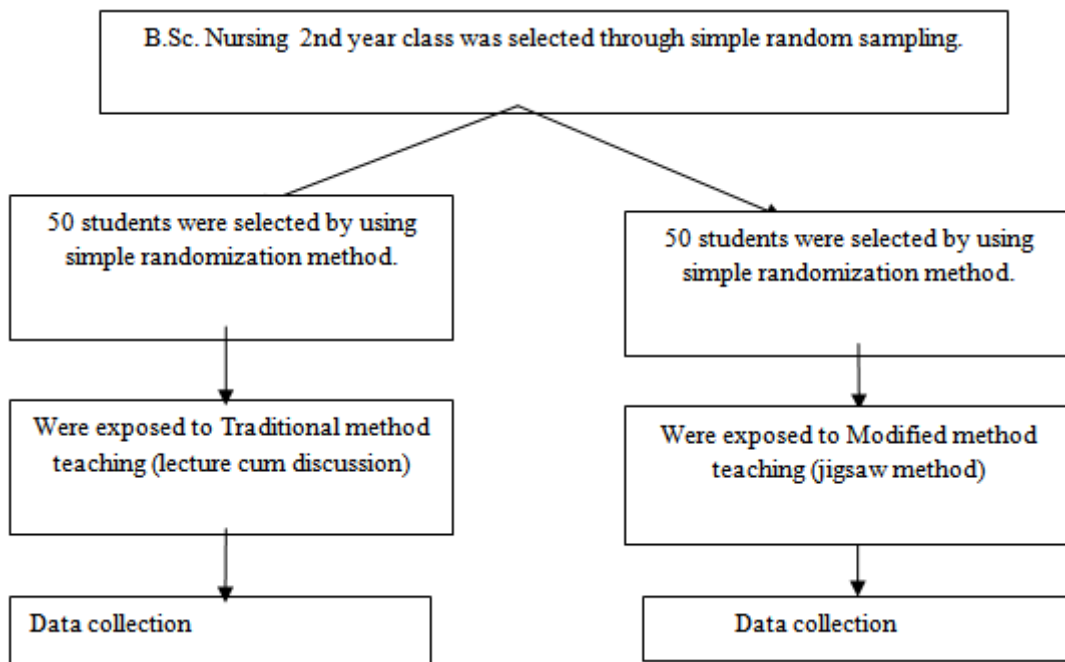
II. Material And Methods

Recent research study was conducted by using Experimental randomized control design on 95 student nurses who were selected through simple random sampling technique from a selected college of nursing, Dehradun, Uttarakhand. Students of B.Sc. Nursing 2nd yr. Comprised of 100 students were selected through lottery method. The group was further divided in the Experimental (n=50) two students were absent during the data collection so data was collected from (n=48) and Control group (n=50) three students were absent during the data collection so data was collected from (n=47). The selected topic was introduced in both the groups at the same time to prevent Biasness and Contamination of sample. Jigsaw as modified teaching method was introduced in Experimental group and lecture cum discussion was used in traditional teaching method. Structured knowledge questionnaire was designed by the investigators and was administered after the validation by experts in the nursing field. After taking necessary administrative permission from the concerned authorities, the data was collected from the study participants. Written consent was taken from the participants.

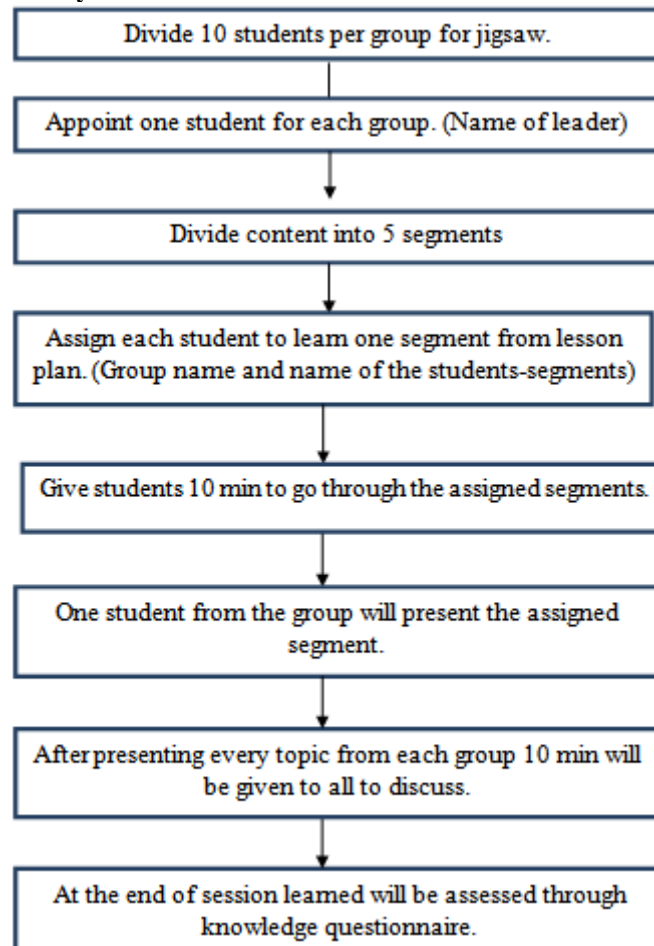
Data collection process



Data Collection Technique



Jigsaw Method Used For Study



III. Results And Findings

3.1 Socio Demographic Data

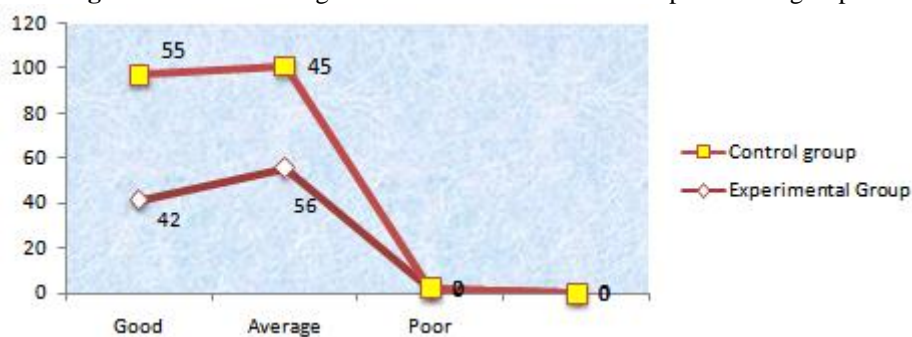
Table no.1 Frequency and percentage distribution of study participants (n=95)

Groups	Age In Years	Frequency (F)	Percentage (%)	Gender	Frequency (F)	Percentage (%)
Experimental group (n=48)	18-21	42	88	Female	46	98
	22-25	6	12	Male	1	2
Control group (n=47)	18-21	40	83	Female	36	77
	22-25	8	17	Male	11	23

Table no .1. Depicts distribution of both the groups which explains that majority of 88% participants were in experimental group. There were 98% females in the group. In control group 83 % participants were in the age group of 18–21 years and 77% participants were female. It can be inferred that most of the subjects directly join the nursing profession after the intermediate school thus majority of participants fell in the age group of 18 to 21 years. Female participants were more as nursing is female dominant profession and most of the males are not aware about the nursing profession.

3.2 Comparison of level of knowledge score

Fig.1 Level of knowledge scores between control and experimental group



The above line graph depicts that the good 55% level of knowledge of control group participants were comparatively more with that of experimental group participants i.e. 42%. The average level of knowledge scores was higher 56% in experimental group. Thus, it can be concluded that participants of experimental group acquired more knowledge which was average.

3.3 Effectiveness of modified and traditional teaching method

Table no. 2: Mean, SD of knowledge score of both groups (n=95)

S. No	GROUPS	Mean ± SD of knowledge score	't' value	'P' value
	Experimental ((n=48)	19.16 ± 4.45		
	Control (n=47)	21 ± 3.65	3.40**	0.000493

't'₉₃ = 1.661

** highly Significant

Data presented in table no. 2 shows that mean SD values of experimental group is less than the control group which means that there is a statistical difference of 1.84 mean values. Hence the traditional teaching method is statistically more effective as comparing to modified teaching method. It can be inferred that modified teaching is new for students which might have caused this difference. The research hypothesis (H₀₁) was statistically not accepted at p<0.05 levels as the difference of mean observed that modified teaching method was not effective as compare to traditional teaching method

3.4 Association between level of knowledge score with demographic variables

Table no. 4: Association between post-test level of knowledge scores with age and gender

Experimental group (n=48)	Median and ≥ above median	Below median	Chi square (χ^2)	'P' value
Age in year				
18-21	24	18	0.109	1.00
22-25	3	3		
Gender				
Male	5	3	0.152	1.00
Female	22	18		
Control group (n=47)				
Age in year				
18-21	25	21	N/A	1.00
22-25	0	1		
Gender				
Male	4	7		
Female	21	15	0.870	1.00

Df=3.84

*** significant**

Table no.3 - shows no statistical significant of demographic variables with knowledge score in both the experimental and control group at the level of $P > 0.05$. It can be inferred that demographic variables of the study participants has no impact on the level of knowledge scores in both the groups. The research hypothesis (H_{02}) was statistically rejected as there was no statistical significant association found between knowledge score with selected demographic variables in Experimental and Control groups.

IV. Nursing Implications

Nurses as teacher, plays an important role in delivering the student -centered learning material and facilitating the university education, where large groups are the main focus. The application of developed effective teaching strategies is used by the institutions in manner to handle large group's problems. The nursing organizations are accepting the challenges as by developing new teaching practices, where the teachers can arouse the full interest towards the nursing profession and can increase the confidence of individual nurse towards learning.

Today, the role of faculty members has been change from nursing education nursing education and knowledge to facilitating learning of an individual. The nurses teachers need to take an active interest in improving the knowledge of student nurses regarding nursing profession, as to add quality and value learning in clinical and academics.

This research can help nurses and to develop the organizational strength, also provide an equal opportunity in learning, eliminate the passive learning behavior in students and arouse the student's response towards the learning process. The findings of this research study suggest for the modification of the teaching strategies and push nurses or faculty members to take keen interest in preparing different teaching techniques.

V. Conclusion

Teaching is an art, which refers to the activities that are performed and designed to stimulate the changes in the behavior of learners. Modified teaching provides an opportunity for significant gain in active learning and full focus on student's thinking, activity interest, reasoning, confidence with personal growth and development.

This research study concludes that the active learning approach does not statistically significant over traditional teaching on learning material, we could not analyze the evidence of effectiveness in this study because of, and it may be new to students. This research study results into the effective teaching method, especially for the passive students as they have participated with their full interest and performed well than their usual performance.

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