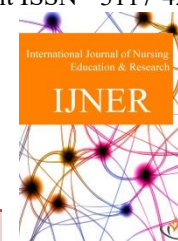




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EFFECT AND ATTITUDE ON JIGSAW LEARNING STRATEGIES AMONG BSC NURSING STUDENTS IN A SELECTED NURSING COLLEGE, THIRUVANANTHAPURAM

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Article Info	ABSTRACT
<i>Received 21/05/2026</i> <i>Revised 16/06/2026</i> <i>Accepted 04/07/2026</i>	The study aimed to assess the effect and attitude towards jigsaw learning strategies among B.Sc. Nursing students in a selected nursing college in Trivandrum. The objectives of the study were to evaluate the effect of jigsaw learning after administering the jigsaw technique and to assess students' attitudes towards the strategy. The study was conducted among 90 sixth-semester B.Sc. Nursing students at KIMS College of Nursing, Trivandrum, using a non-probability consecutive sampling technique. The effect of the strategy was assessed both before and after the intervention, while the attitude was assessed only after the intervention. Two tools were used for data collection: Tool 1 collected socio-personal data such as gender, study pattern, method of study, learning style, and prior experience with collaborative learning. Tool 2 was a five-point attitude scale with 20 statements related to jigsaw learning strategies. Data were analyzed using descriptive and inferential statistics. The results showed a significant increase in knowledge scores: the mean pre-test score was 8.66 (SD = 1.995), and the mean post-test score was 17.16 (SD = 2.120). The calculated t value was 41.227, which is greater than the table value of 2.62 at the 0.01 level of significance, indicating a statistically significant improvement in knowledge after using the jigsaw technique. Regarding attitude, 45 students (50%) had a very good attitude, and 45 students (50%) had a good attitude toward jigsaw learning. Therefore, the hypothesis was accepted, indicating that the jigsaw learning technique led to a significant improvement in students' knowledge and fostered a positive attitude towards collaborative learning.
Key word: - Effect, Attitude, Jigsaw learning strategies.	

INTRODUCTION

“Tell me and I forget, teach me and I may remember, involve me and I learn”

Benjamin Franklin

Learning and reproducing the contents learnt during examination is a part of every student's life especially in professional courses like nursing where the entire curriculum is made.

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Addressing Making the teaching and learning strategies more student-friendly has helped to retain student's attention and insist in them the interest to learn and perform better. Cooperative learning is when small groups of students work together to complete assignments. It helps students develop important life skills like teamwork and responsibility [1].

Innovative teaching strategies enable students to learn by solving problems, discovering solutions and



developing critical thinking. Student engagement is facilitated through strategies that move away from the traditional lecture-based approach, but rather encourage questions in class, make plays for student-led research and presentation, are supported by technology, and include self-study. It encourages curiosity, interest, motivation, attention and collaboration among students, and are proven to improve greater achievement in education and success in later life [2].

Nursing education has begun to shift from teacher-centered learning to student-centered learning. Jigsaw learning provides a comprehensive method for engaging students in nursing context by encouraging them to take ownership of their learning and work together to solve complex problem. Jigsaw learning fits well with the concepts of the nursing metaparadigm (person, environment, health, and nurse) [3].

The National Education Policy (NEP) 2020, introduced by the Government of India, marks a transformative shift in the educational landscape of the country. Aiming to cater to the evolving needs of the 21st century, NEP 2020 is designed to foster critical thinking, creativity, and holistic development among students. This policy emphasizes the integration of innovative teaching practices to create a more engaging and effective learning environment, addressing the diverse needs of students and preparing them for the challenges of a rapidly changing world [4].

Jigsaw learning method was developed by Elliot Aronson and his colleagues in the 1970s as a cooperative learning strategy. Over the years jigsaw learning has been widely adopted across various educational disciplines including health professional education where it has proven to enhance teamwork, communication and critical thinking among students [5].

Jigsaw learning is a student centered innovative instructional approach in which students are divided into small groups and each member is assigned a specific part of a larger topic to learn and then teach to their peers. Jigsaw learning views the curriculum as being focused on collaborative learning where students become both learners and teachers within their groups. This method encourages independent study and cooperative learning with students working together under the guidance of the teacher. It also encourages students to equally participate, prepares and leads a group thus learning for themselves as well as preparing for their group [6].

The Global Adoption Rate states that approximately 70% of educators in the U.S report using cooperative learning strategies in their classrooms. In countries like Finland and Singapore, cooperative learning is integrated into national curriculum, emphasizing collaborative skills [7].

A study was conducted to assess the effect of jigsaw learning technique to learn the concept of preeclampsia among 4th year BSc Nursing students of TMM college of Nursing, Tiruvalla. The objective of this study was to assess the level of knowledge on preeclampsia among fourth year B Sc nursing students and to determine the effect of jigsaw learning technique on learning the concept of Preeclampsia, among fourth year BSc nursing students. The study sample include 50 BSc nursing students. It was a quantitative experimental approach with one group pretest post-test design. They used non probability convenient sampling technique. The tool used are structured questionnaire to collect general information of students and assess the knowledge level of students regarding preeclampsia. The results shows that there was a significant difference in the performance of the students on the self-administered questionnaire before and after the intervention. The post test score was increased (21.62) than the pretest knowledge mean score of 10.48. The calculated paired t' test at 0.05 level of significance was 3.76 which is greater than the table value of 1.684. Thus, the Jigsaw Learning method proved to be an effective educational learning tool for nursing students.

METHODOLOGY

Research methodology involves the systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion. This chapter consists a detailed description of research methodology used in the study. This includes the research design, setting of the study, population, sample size, sampling technique, criteria for sample collection, description of tool, data collection procedure, techniques for data analysis and ethical consideration [11].

Research Approach

Quantitative approach

Research Design

One group Pre- test Post-test only design [Quasi-experimental design]

Variables

Dependent Variable

Effect and Attitude towards Jigsaw learning

Independent Variable

Jigsaw Learning Strategy

Setting of the study

KIMS College of Nursing, Thiruvananthapuram.

Population

Target population



BSc Nursing students

Accessible population

6th semester BSc Nursing students, KIMS College of Nursing, Thiruvananthapuram

Criteria for sample selection

Inclusion criteria

Students who were present on the day of study.

Exclusion criteria

Students who are not willing to participate in the study.

Sample and Sampling Technique

6th semester BSc. Nursing students, KIMS College of Nursing, Thiruvananthapuram Non probability consecutive sampling technique.

Tool/Instruments

Tool 1

Structured questionnaire

Section A:

Socio-personal data

To assess variables such as gender, study pattern, method of study, learning style, previous experience with collaborative learning,

Section B:

Structured Knowledge questionnaire

Tool 2

5-point Likert attitude scale

A five-point Likert attitude scale was developed to assess the attitude of BSc Nursing students towards the Jigsaw Learning Method. The scale consists of 20 statements, including both positive and negative items. Each statement is followed by five response options: Strongly Agree, Agree, Uncertain, Disagree, and Strongly Disagree. For positive statements, scores are assigned as 5, 4, 3, 2, and 1 respectively. For negative statements, the scoring is reversed, i.e., 1, 2, 3, 4, and 5 respectively. The total score reflects the overall attitude, with higher scores indicating a more favorable attitude towards the Jigsaw Learning Method.

Pilot Study

Pilot study was conducted on 14/06/2025 among 10 students of the 7th semester B.Sc. Nursing program at

KIMS College of Nursing, Thiruvananthapuram. Prior to the study, the investigator obtained approval from the Institutional Review Board (IRB) and formal permission from the Principal of KIMS College of Nursing, Thiruvananthapuram. Data were collected after obtaining informed consent from the participants. The pilot study was found to be feasible, and the research tools were deemed appropriate and executable.

Data Collection Process

Permission was obtained from the Institutional Review Board (IRB), along with formal approval from the Principal and the Coordinator of the 6th semester B.Sc. Nursing program at KIMS College of Nursing, Thiruvananthapuram. Data were collected from 6th semester B.Sc. Nursing students at the same institution. The researcher introduced themselves to the participants and established good rapport. The purpose of the study was explained, and informed consent was obtained from each participant. A pre-test on psychological therapies was conducted to assess the students' baseline knowledge. Following this, the Jigsaw learning exercise was administered by the researcher, which took approximately 3 to complete. After the session, post-test knowledge and attitude were assessed using a structured knowledge questionnaire and a five-point attitude scale, respectively. The post-intervention attitude scores were assessed on the same day as the Jigsaw learning session.

RESULTS

The table depicts that during the pre-test, 20% (18) of the students had good knowledge,

72.2% (65) had average knowledge, and 7.8% (7) had poor knowledge. In the post-test, 82.2% (74) of the students demonstrated very good knowledge, while 17.8% (16) had a good level of knowledge.

The table shows that 50 % (45) students had good attitude and 50 % (45) had good attitude score.

The table depicts that the mean pre-test knowledge score was 8.66 with a standard deviation of 1.995, while the post-test knowledge score was 17.16 with a standard deviation of 2.120. The calculated *t*-value at the 0.01 level of significance was 41.227, which is greater than the table value of 2.62. Hence, the hypothesis is accepted, indicating a significant increase in knowledge level following the Jigsaw learning technique.

Table 1: Distribution of samples showing Knowledge score regarding Jigsaw learning strategy. N=90

Level of Knowledge	Pre-test		Post-test	
	Count (n)	Percentage (%)	Count (n)	Percentage (%)
Poor	7	7.8	0	0.0
Average	65	72.2	0	0.0



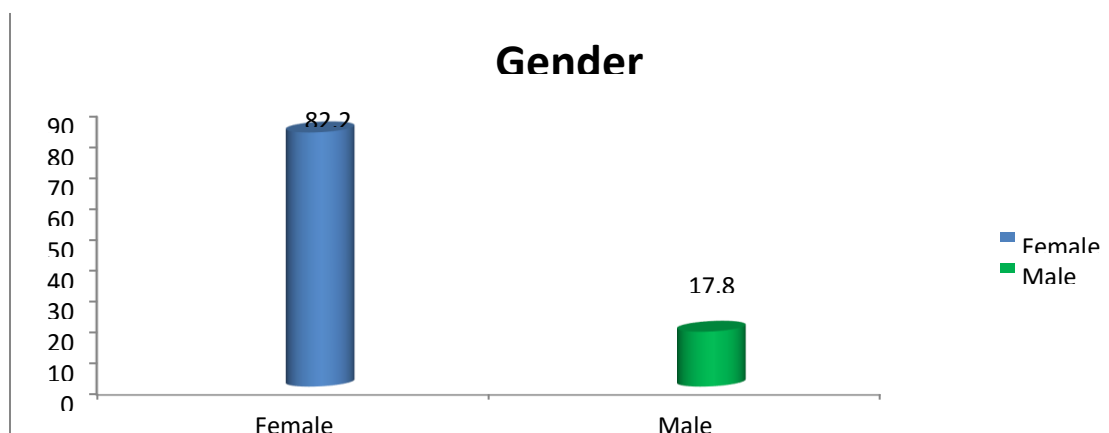
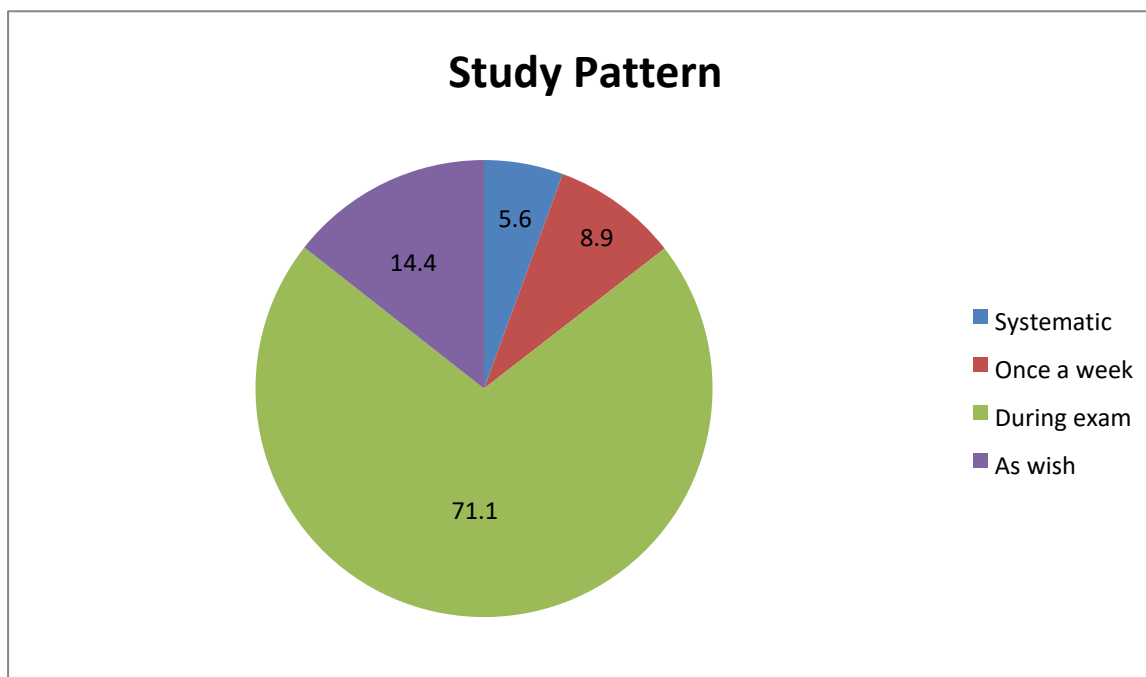
Good	18	20.0	16	17.8
Very Good	0	0	74	82.2

Table 2: Distribution of samples showing Attitude score regarding Jigsaw learning strategy n=90

Attitude Score	Count (n)	Percentage (%)	Mean	Standard Deviation (SD)
Good	45	50.0	76.17	8.18
Very Good	45	50.0	—	—

Table 3: Paired t test showing effect of Jigsaw learning strategy. N=90

Learning Exercise	Mean	SD	N	Mean Difference	df	Paired t Value	Table Value
Pre-test	8.66	1.995	90	8.5	89	41.227**	2.62
Post-test	17.16	2.120	90	—	—	—	—

**Figure 1: Cylindrical bar diagram showing the percentage distribution of subjects based on gender.****Figure 2: Pie diagram showing the percentage distribution of samples based on study pattern.**

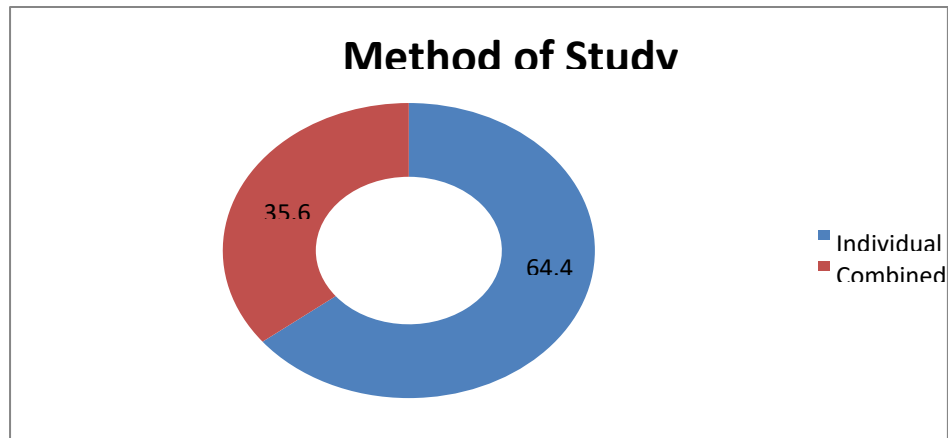


Figure 3: Doughnut diagram showing the percentage distribution of samples based on method of study.

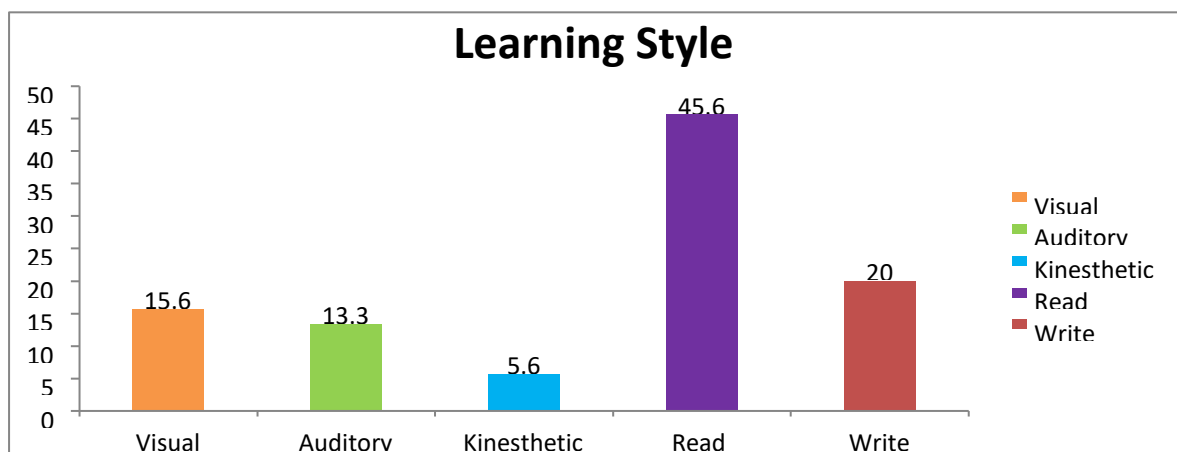


Figure 4: Bar diagram showing the percentage distribution of samples based on learning style.



Figure 5: Cone diagram showing the percentage distribution of samples based on previous experience with collaborative learning.

DISCUSSION

The present study was conducted to evaluate the impact of the Jigsaw learning technique on students' knowledge and to assess their attitude towards this collaborative learning strategy.

The findings of the study revealed a significant increase in post-test knowledge scores following the implementation of the Jigsaw learning method. The mean pre-test score was 8.66 with a standard deviation of 1.995, while the mean post-test score increased to 17.16 with a standard deviation of 2.120. The calculated *t*-value (41.227) at the 0.01 level of significance was greater than the table value (2.62), indicating that the improvement in knowledge was statistically significant. This suggests that the Jigsaw learning strategy was effective in enhancing the students' understanding of the subject content.

In terms of attitude, the majority of students expressed a positive response towards the Jigsaw learning method. The five-point attitude scale revealed that students appreciated the collaborative nature of the technique, noting that it promoted active participation, critical thinking, peer learning, and improved retention. The positive attitude scores further support the effectiveness of the strategy not only in content delivery but also in fostering an engaging learning environment.

The present study findings are supported by the findings from a study conducted in TMM College of Nursing, Tiruvalla among Fourth year BSc nursing students to assess the effectiveness of Jigsaw technique in learning the concept of preeclampsia. Among 50 samples, majority belongs to 22-23 years of age, (89%) had no previous knowledge about preeclampsia and (64.5%) were having interest in self-study and peer group study. On pretest, about 28 students (56%)

had average level of knowledge and 22 (44%) had poor level of knowledge about preeclampsia while on posttest, majority 32 students (64%) had good knowledge level and 18(36%) had average knowledge level. The mean posttest value (21.62) is significantly greater than the mean pretest knowledge score (10.48). This is measured by paired *t* test and the calculated *t* value is 3.76 at $p > 0.05$ level of significance. The findings proved that jigsaw technique is effective to learn preeclampsia.

The findings are consistent with previous research that supports the use of active and student-centered teaching methods such as Jigsaw learning to enhance both cognitive and affective learning outcomes. Based on the study results, it can be concluded that the Jigsaw learning strategy is a feasible and effective teaching method in nursing education. It enhances knowledge acquisition and is well-received by students, indicating its potential for wider implementation in classroom settings.

ABBREVIATIONS

1. NEP – National Education Policy
2. IRB- Institutional Review Board
3. IBL –Inquiry Based Learning
4. TL -Teaching Learning
5. SGD-Small Group Discussion

Conflicts of Interest:

There are no conflicts of interest.

Ethical Clearance: Institutional Ethics Committee, KIMS College of Nursing, Trivandrum
(Letter No. KIMS/CON/2025, dated 10/06/2025)

REFERENCES

1. Smitha Jose, Manjima M Nidhi Alex, Santy M Thampi, A Study to Assess the effect of Jigsaw Learning Technique to Learn the Concept of Preeclampsia among Fourth year B.Sc. Nursing students of TMM College of Nursing, Thiruvalla, Asian Journal of nursing education and research, 2023
2. Pio Group. 20 innovative teaching methods with examples & how to implement in education process [Internet]. Piogroup.net; c2024 [cited 2025 Jul 17]. Available from: <https://piogroup.net/blog/20-innovative-teaching-methods-with-examples-how-toimplement-in-education-process>
3. Hossain MM, et al. Outcomes of jigsaw technique in nurse education: meta-analysis. Nurse Educ Today. 2024; 138:106189.
4. Ministry of Education, Government of India. National Education Policy 2020. New Delhi: Government of India; 2020.
5. Aronson E, Blaney N, Stephan C, Sikes J, Snapp M. The jigsaw classroom. Beverly Hills (CA): Sage; 1978.
6. Learning and Teaching Hub, Arizona State University. Jigsaw active learning strategy [Internet]. Tempe (AZ): Arizona State University; 2025 [cited 2025 Jul 17]. Available from: <https://lth.engineering.asu.edu/reference-guide/jigsaw/>
7. Educational policy literature. Cooperative learning adoption and integration in national curricula: the cases of the United States, Finland, and Singapore. Int J Educ Reform. 2024;5(2):123–30.
8. Suresh K Sharma. Nursing Research and Statistics. 2nd ed. New Delhi: Reed Elsevier India Pvt Ltd; 2018. P. 53–56.
9. Aronson E. The Jigsaw Method and Cooperative Learning [Internet]. Natasha Portfolio; 2017 [cited 2025 Jul 19]. Available from: <https://natashaportolio.wordpress.com/wp-content/uploads/2017/10/the-jigsawmethod-and-cooperative-learning.pdf>
10. Watson S. What Is Cooperative Learning? [Internet]. ThoughtCo; 2020 Jan 29 [cited 2025 Jul 19]. Available from: <https://www.thoughtco.com/what-is-cooperativelearning-2081641>