



### Research Article

## JIGSAW COOPERATIVE LEARNING: A VIABLE TEACHING LEARNING STRATEGY IN AYURVEDA

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**KEYWORDS:** Cooperative learning, JIGSAW method, Ayurveda.

### ABSTRACT

Teaching and learning are two important pillars in medical education. In lecture base method teachers mere transform all his information about a subject to students, but day by day this method is getting bored. It discourages everyone. Every student doesn't take part in this type of teaching. Cooperative learning considered as one of the greatest innovative method in teaching. Jigsaw is one of the strategies of cooperative learning. It is successfully used in other faculty to improve education from 1<sup>st</sup> standard to graduate level but till it is not used in Ayurveda field so the present study was conducted to compare effectiveness of Jigsaw technique with lecture technique for Ayurveda students. **Method:** A pre-test was performed on the students to ensure their knowledge about that subject. Then relevant topics i.e., *Shatkriyakala* (first subject) and *Nidanpanchak* (second subject) were presented to the two groups using mentioned methods. And a post-test was used to measure their learning and assessed it's satisfactory or not by unpaired t test. **Results:** More than 90% of the participants agreed with all the items that assessed their satisfaction with what they learnt by using JIGSAW. **Conclusion:** Cooperative learning for teaching learning process is more effective and satisfactory.

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## INTRODUCTION

Instructional process in Ayurveda is done by many educators today are likely to target curriculum materials more emphasis on memorisation rather than understanding concepts. The classroom is always dominated by teacher. There is pin drop silence in routine class. The student does not active participants in learning. In the delivery of the content teachers used lecture method where students just sit down, take notes, and listen to what it conveys and fewer has opportunity to ask questions. So this concept discourages everyone. Students have passive role in learning.

For achieving skilful generation and their effectiveness depends greatly on the methods of education teacher choose to teach their students. A good teaching method exposes the learner to challenging situation and provides them with opportunities for interaction, consultation, discussion, and debate with themselves. So they can

develop power of thinking and meaningful learning experience in learners. When a learner can link newly gained to previously acquired information. This learning experience can be said to be meaningful. This view of learning is in contrast with unilateral transformation of knowledge from teacher to student.<sup>[1-3]</sup>

This study used a JIGSAW cooperative learning strategy to introduce and involve students directly in its activities so that students experience of how to use the JIGSAW strategy of cooperative learning in teaching. College of medicine, King Faisal University adopted problem based curriculum to facilitate student centred pedagogy in which students learnt about a subject through experience of solving an open ended problem. It explores the importance of placing student in control of their own learning.<sup>[4]</sup>

## Review of literature

The JIGSAW training is part of cooperative learning developed by Elliot Arosen in 1971. It is extensively used in all levels of education. It allows students actively participate in learning process. It is method of organising classroom actively that makes students depend on each other to succeed. It divides classes into groups assembles to complete the JIGSAW puzzle.<sup>[5]</sup>

### The steps that are used for JIGSAW

When using the JIGSAW technique in the classroom. There are some steps should follow as below. Information about this strategy is from the Muskingum Area Technical College. Newsletter sept.14 1994.

- Define and instruct the group project on which the class will be working.
- Randomly divide the class into groups of 4-5 students each, depending upon the size of the class assigns a number to each student of a group.
- Assign each student a topic in which he/she will become an expert.
- Rearrange the students into expert group based on their assigned members and topics.
- Provide the experts with the materials and resources necessary to learn about their topics.
- The experts should be given the opportunity to obtain knowledge through reading, research, and discussion.
- Re-assemble the original group.
- Experts will then teach what they have learned to rest of the group.
- Take turns until all experts have presented their new material.
- Groups present results in the entire class.

### Benefits of JIGSAW

According to Arosen and Goody (1980) JIGSAW is a well-established method for encouraging group sharing and learning of specific content. It actively engages students in teaching to one another. It allows a teacher to be neither a facilitator nor a director of a classroom, which is thread in schools today.

According to Mengduo and Xioling (2012), it reduces student's reluctance and anxiety to participate into the classroom activities while increasing self-confidence and self-esteem. Androsen and Palmer reports that the JIGSAW helps build social skills. It motivates to work together, share ideas, pursue common goals and develop self-esteem. The JIGSAW cooperative also provides a way to help contribute; they are going to miss information that is needed to fully understand the

material. It allows students to work with one another and develop a sense a being needed. By involving in the activities, the students focus on listening, speaking, and cooperation, reflection and problem solving skills<sup>[6]</sup>.

### AIMS AND OBJECTIVES

To assess the effect of JIGSAW technology on knowledge of undergraduate Ayurvedic medical students in Rognidan subject.

**Study Design:** Quasi experimental research design.

**Study Population:** All students from 2<sup>nd</sup> and 3<sup>rd</sup> year appearing for Rognidan of SSVP Ayurvedic College Hatta included as study population.

### Research Question

What are the mean percentage scores of students taught teaching learning strategy using JIGSAW technique and those taught using group discussion strategy.

### Null Hypothesis

There will be no significant difference between the achievements of students taught teaching learning strategy using JIGSAW technique. And that taught using group discussion strategy based on their mean percentage score in teaching learning strategy achievement test.

### MATERIALS AND METHODS

The present quasi experimental study was conducted on the entire population of second and third year under graduate students of Ayurveda of academic year 2020-2021.

Total sample size was 60 students overall divided in two groups group A and Group B. Each group have 30 students each.

Both groups took a protest to ensure they were matching in their literacy.

The subjects taught in this method are "*Shatkriyakal*" and application of *Nidanpanchak* for diagnosis and treatment.

The first topic *Shatkriyakal* is taught group A by JIGSAW and group B lecture method.

And the 2<sup>nd</sup> topic of *Nidanpanchak* was taught to group A by common lecture method and group B by JIGSAW method. This arrangement ensured that the lessons were taught in a crossover manner.

Each student received a sheet of paper containing definition, symptoms and details of subtopics in which they needed to be master.

A series of information available in books and on internet is provided to expert group. Expert group were formed to discuss and exchange ideas

on the subject assigned to them in a matter of 30 minutes.

Each member then return to their home group and taught assigned part to remaining member. Performing this whole task takes 90 minutes.

At the end of training of each session a final post-test is taken to have their learning measurement.

**Criteria of Assessment**

**Subjective Criteria**

A survey form containing 10 closed ended questions is fulfilled by each student which helps in deciding viability of JIGSAW strategy. This form

**Observations:**

**Subjective criteria**

includes satisfaction, boring, profound, interest in which method, which method is enjoyable, which technique is better collaboration, eagerness of final score, which technique increases self-responsibility. Percentage of answers is calculated.

**Objective Criteria**

Post-test score is considered as objective criteria. It decides accuracy of teaching and beneficial method for teaching.

Mean and standard deviation used to measure quantitative variables. An unpaired t-test is used to compare the means of quantitative variables between two groups.

Questions	JIGSAW	Traditional
By which technique are you satisfied	45	15
Which teaching method you enjoyed alot	36	24
Which teaching method increases cooperativeness	49	11
On which topic you are eager for final marks	57	03
Which technique is more advantageous	55	05
Which technique is bored	15	45
Which technique increases yourself responsibility	52	08
Which method you will prefer for further learning	54	06
Can you teach subject to further	45	15
Which technique is more curious for another group	50	10

**Observation**

	JIGSAW Method	Lecture Method	
<i>Shatkriyakal</i>	18.80±1.27	12.25± 2.31	P<0.01
<i>Nidanpanchak</i>	18.28±1.12	13.21±2.73	P<0.01

**DISCUSSION AND RESULTS**

According to Albert Einstein, Education is not the learning of facts, but training of the mind to think. So this study was designed to examine how JIGSAW strategy, a strategy of cooperative learning effects on Ayurveda teaching and learning process. In this study the topic of *Rognidan* is taught to two groups by crossover manner. Result of this study shows that difference between means of post-test result is significant in both trials. In case of *Shatkriyakal* the mean of post-test result taught by JIGSAW is more than that of traditional lecture method i.e., (p<0.01). Same result was obtained when the subject *Nidanpanchak* was taught to group B. This result indicates that effectiveness of cooperative learning through JIGSAW technique is

for *Rognidan* subject for Ayurveda is more than that of lecture method. There are many studies carried on JIGSAW technology in medical science which shows it enhances student knowledge, it is very useful technique in medical science. The lack of enthusiasm and interest in Ayurveda can be a serious challenge faced by Ayurvedic students. The use of conventional lecture method can be regarded as one of the main factor contributing lack of interest in this subject. The teacher has to be crafted enough to eliminate transform this indifference into enthusiasm.

Teacher want to change his role from a lecturer means merely transfer information to a planner, observer, provider, role model, facilitator, and inspector. Two decade before there are very

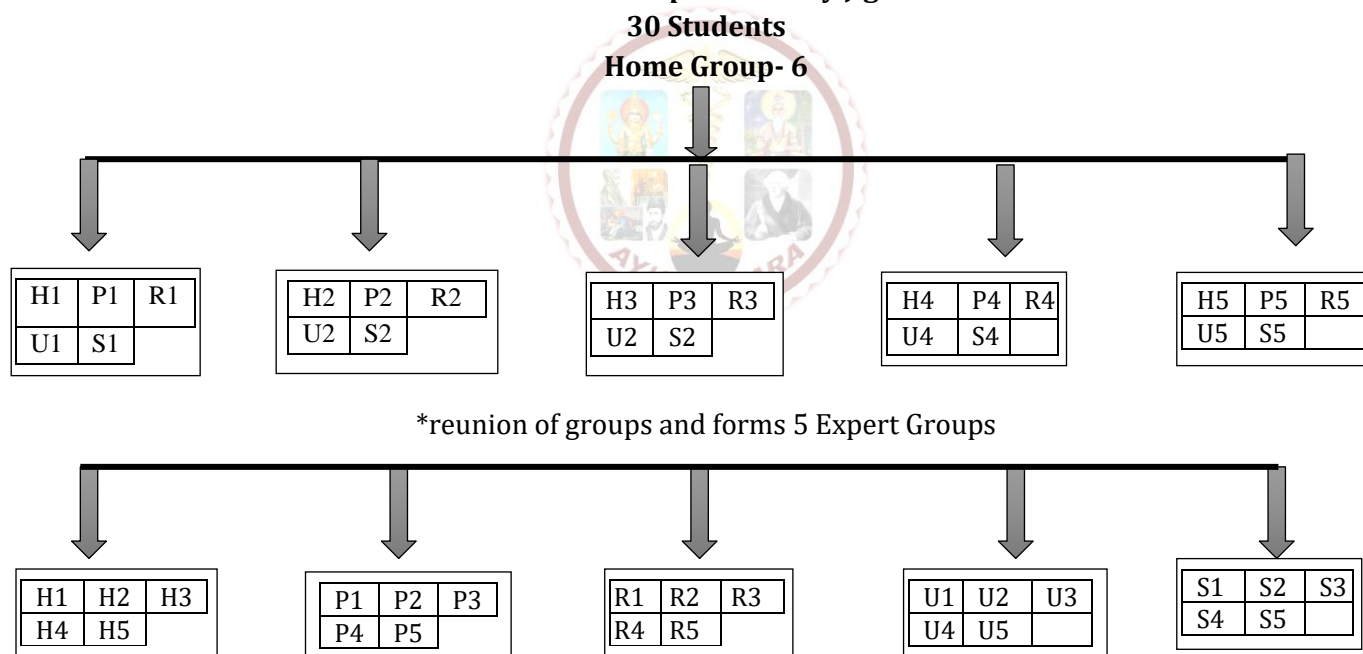
fewer books are available on particular subject, teacher collects all information from *Samhitas* and represent students, but now day's conditions are changed. There are many books and data available. As there is so much data available online, students are not very much serious about attending class. So teacher wants to change his role and technique of teaching. In this study, 75% students satisfied with learning using JIGSAW. 64.55% students agreed that it is less boring lecture than traditional lecture. 90% of these students are interested in this study. Each and every student takes part in this learning. In tradition method, only few ask questions. Only front bencher students listens it carefully. But in this, every student has a responsibility and he has responsibility to teach other which increases their attention in class. 82% students agreed it increases collaboration between each other. As there is no competition with each other students easily accept their misunderstanding and accept other's newer point of others. 96% students are eager for their final marks as they took too much effort for learning

the subject. Thus learning by JIGSAW training is more advantageous than traditional method as it eliminates competition, increases self-responsibility, accuracy. Presently, students in a class may be increased because of it is more enjoyable and are more interested in JIGSAW technique. Thus JIGSAW technique is more viable teaching learning strategy.

**CONCLUSION**

JIGSAW learning teaching methodology is more effective among Ayurveda students. We can use different strategy of cooperative learning for teaching various concepts of Ayurveda. By conducting this study the research recommended that for institution JIGSAW cooperative learning strategy should be given in their real classroom. Training, workshops, opportunities about cooperative learning strategy should be made available for teacher at university level. Teacher has to teach his students by using different technique so students play active role in learning.

**Lesson Plan on "Nidanpanchak" By Jigsaw Method**

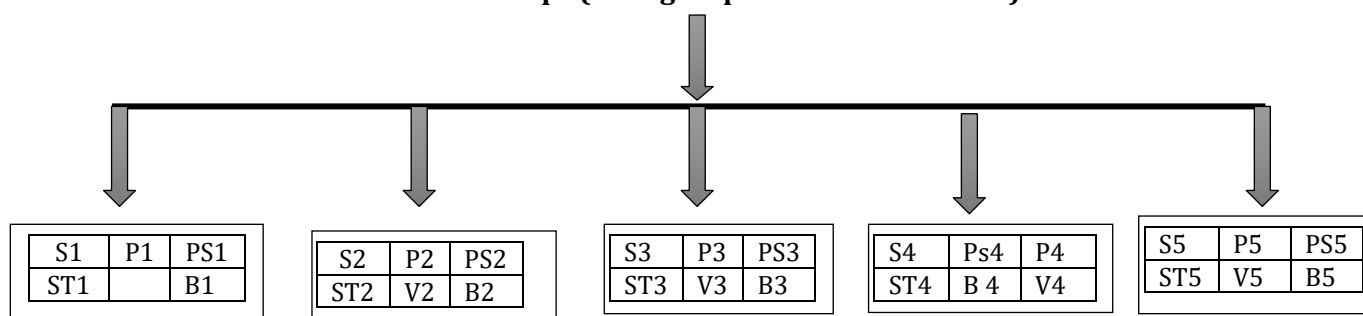


The students return to their home group after discussing in expert group. And teach the subject to home group.

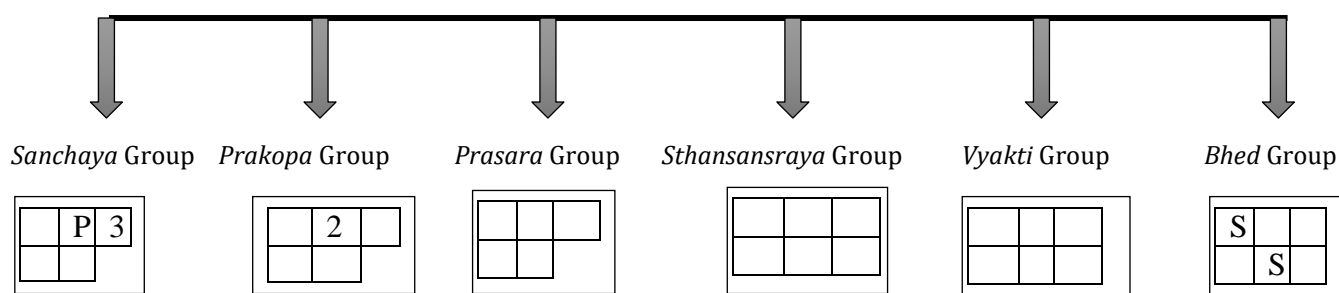
## Lesson Plan on "Shatakriyakal" by Jigsaw Method

30 Students

5 Home Groups (each group contains 6 students)



\*Reunion of groups and forms 6 Experts Groups



\*students reach to home group and teach other students the given topic which they discussed with expert group.

\*Final post-test is for their assessment is taken.

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