EVALUATION OF ACTIVE LEARNING IN THE SUBJECT OF AYURVED THERAPEUTICS (RASASHASTRA AND BHAISHAJYAKALPANA) FOR SECOND YEAR BAMS STUDENTS

Jyoti B Gavali

Associate Professor, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, Maharashtra, India

Email: jbgavali@gmail.com

ABSTRACT

Medical education is becoming challenging in recent times as the time required to teach the whole syllabus is narrowing and pressure to perform well is increasing. This have led to the development of newer teaching techniques which help the student to retain the information in his/her long term memory. The present paper helps to understand how newer large classroom strategies and techniques help us to deliver a lecture in a better way with increase in the cognitive level of learning by the student. Three large classroom strategies Quiz, Think-share-pair and One minute preceptor were used to evaluate active learning in Rasashastra and Bhaishajyakalpana. The results show that students have shown an increased understanding with active learning than didactic form of lectures.

Keywords: Active learning, *Rasashastra, Bhaishajya Kalpana*.

INTRODUCTION

Students learn what they care about and remember what they understand. (Ericksen, 1984, p. 51) *Rasashastra* and *Bhaishajya Kalpana* is the study of preparation of Ayurvedic medicines which consists of Herbal, Herbomineral and Mineral Drugs. The subject is taught traditionally by didactic lectures and practical demonstration of preparation of medicines. *Rasashastra* deals with medicines prepared from metals and minerals while *Bhaishajyakalpana* comprises mostly of herbal medicines.

There are many concepts in preparation of medicine in *Rasashastra* as well as *Bhaishajyakalpana*. It has been observed that it is difficult for the students to remember the different concepts of preparation of medicines with their proportions. It is also observed that students learn these methods through lectures but do not apply them in practice. The learning, understanding of these concepts is important which drives the student to apply the concepts practically.

Study rationale- Active learning strategy helps and transforms learning to better understanding. This will in turn help the student to prepare better medicines and develop the concepts if needed.

Context of the study-

Goal (Aim)- Given a concept of preparing a medicine, that the student has never learnt, he/she will be able to enlist the step by step preparation of the medicine, its use and practical application with 80% accuracy.

Specific Learning Objectives- At the end of the active learning assessment

Knowledge-The student will be able to recall the concept of preparation of the medicine.
The student will be able to list the characteristics of these medicines.

Comprehension-The student will be able to describe the concept of preparation of the medicine.

Application-The student will be able identify the ingredients with proportion for preparation of the medicine.

Active learning-
Passive learning is prevalent in traditional teaching, where a teacher is the only source of knowledge and involves lecture style instruction, which is considered to be less effective in understanding different concepts. Active learning involves providing opportunities for students to talk, listen, write, read, and reflect meaningfully on the content, ideas, issues, and concerns of an academic subject.[1]

Selection of Active learning strategies for large classrooms-
Large classroom strategies-active learning-The large classroom strategies were narrowed down to these three [2]

Think-Pair-Share-[3] Ask a question of the class requiring higher level thinking skills. Encourage students to think about a question and their answer for a couple of minutes. Students then pair with a classmate to discuss answers. Volunteer groups then share their conclusions with the class.
Advantages-(1) Encourages students to be reflective about course content, (2) allows students to privately formulate their thoughts before sharing them with others and (3) can foster higher-order thinking skills

One Minute preceptor[4]- As a lecture interruption or in the closing minutes of a class session, ask students to take out a sheet of paper and for one minute, summarize main points of lecture or note any muddy points of the lecture. Collect these and use feedback to target problem areas.
Advantages-(1)Composing one-minute papers seals the content in students' minds, pinpoints where learners are with understanding the key concepts,(2) helps develop critical thinking skills, (3)and gives the instructor valuable feedback about the effectiveness of his or her teaching.

Quiz/Test Questions [5] A questionnaire is provided at the end of the session based on the lecture content and graded. (Formative assessment)Students might be asked two different questions on the same material including degree of difficulty, effective-

ness in assessing their learning, proper scope of questions, and so forth.

Advantages- (1) Explore major themes, (2) comparison of views presented, applications, and other (3) higher-order thinking skills.

Designing Of the Lecture-

A concept of preparation and its allied techniques were selected after peer discussion. The selected topic was from the must know category and holds significance theoretically as well as practically. The above three activities were included and the lecture was meticulously planned.
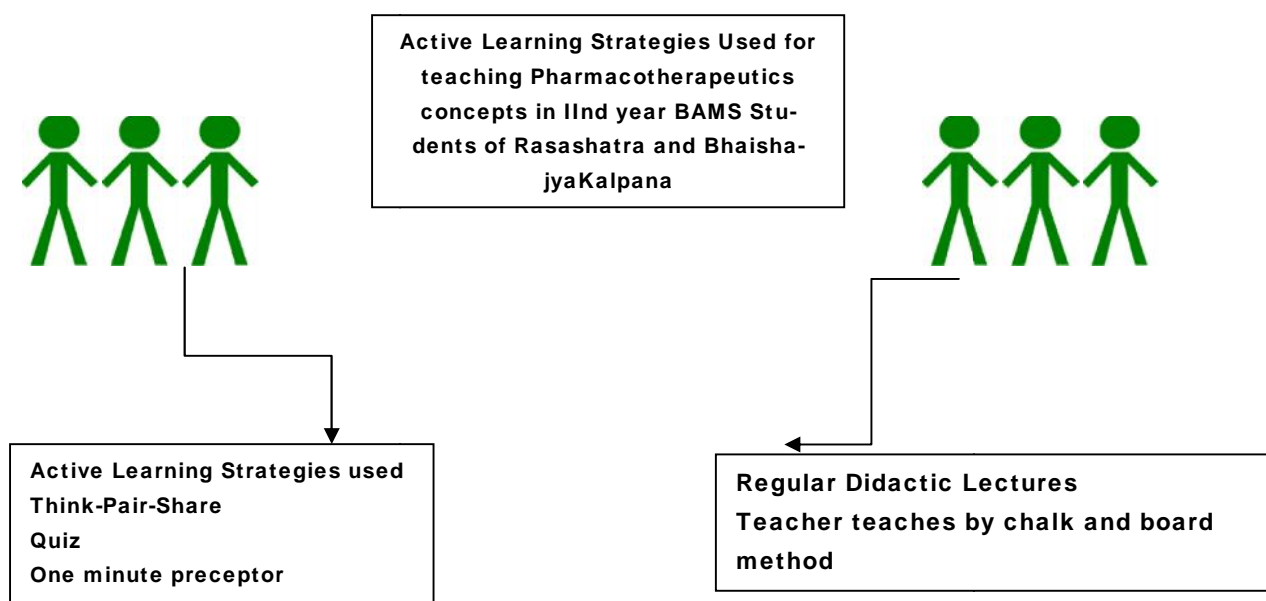
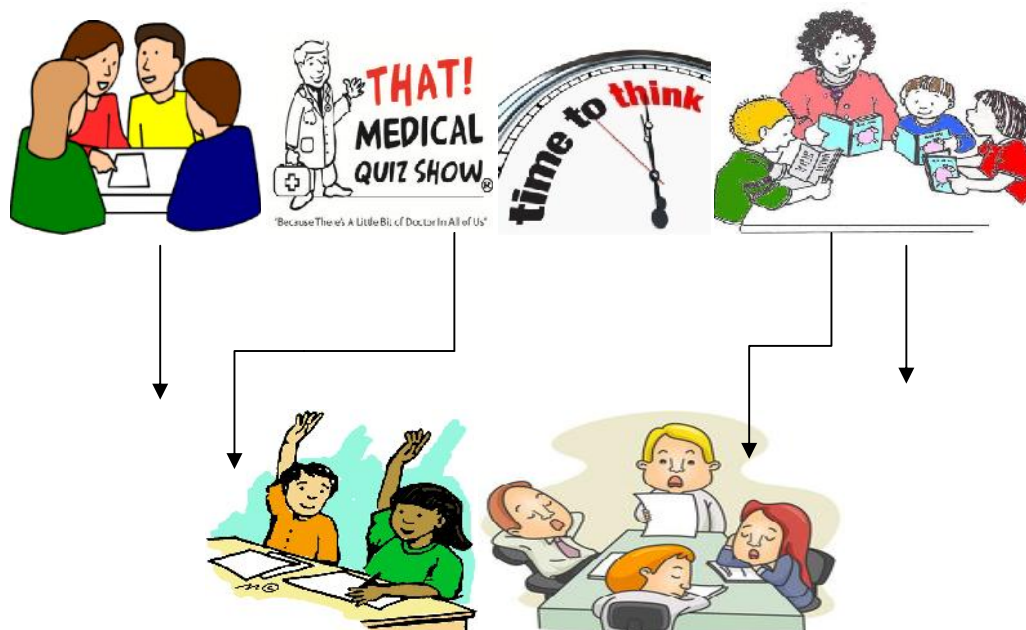### Materials and Methods
Inclusion criteria:

The students willing to participate in the project were included.

Informed consent was taken from the willing 2nd B.A.M.S. students for the participation in the project. Total 26 students were included for the study.

- **1st phase of study**

Pretest was conducted for the evaluation. The 26 students were divided into two batches of AL and DL consists of 13 students each. The PowerPoint presentation used for both the batches used was the same to reduce the bias. The AL batch was taught with the active Learning method while the DL batch was taught with the Didactic Lecture. The batches were separated in different classrooms and taught the concept of Kwatha Preparation (Decoction) with the respective method. The activities were conducted according to the blueprint prepared for the lecture.

Active Learning Strategies Used for teaching Pharmacotherapeutics concepts in IInd year BAMS Students of Rasashatra and BhaishajyaKalpana

Active Learning Strategies used
Think-Pair-Share
Quiz
One minute preceptor

Regular Didactic Lectures
Teacher teaches by chalk and board method

The questionnaire for evaluation was validated by the peers. Scores of the MCQs will be evaluated. The data will be analyzed statistically.

- **2ⁿᵈ phase of study**

After the completion of Learning,

a) Evaluation of AL (Active Learning) batch-The students were given the post-test to solve. The feedback forms were also given to know their opinions about the respective learning methods.

b) Evaluation of DL (Didactic Lecture) batch – The students were given the post-test to solve. The feedback forms were also given to know their opinions about the respective learning methods.

Results-

Both the methods were assessed by the marks obtained in the pre-test and post-test.

Scores obtained-The scores were given out of 10 marks for the pretest and post test.
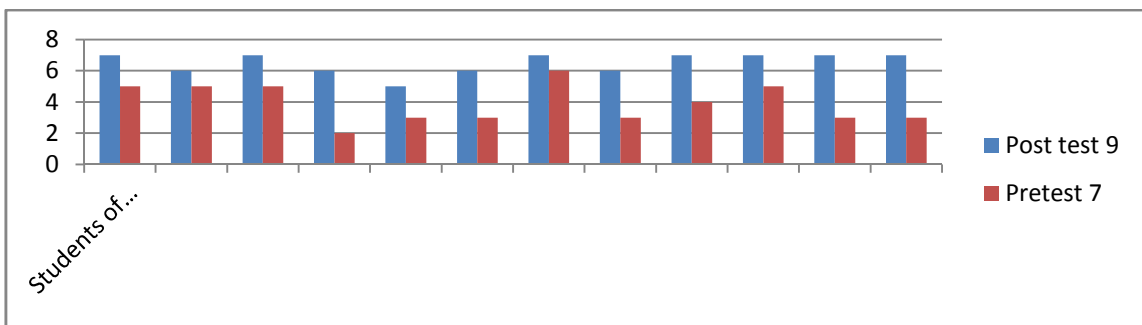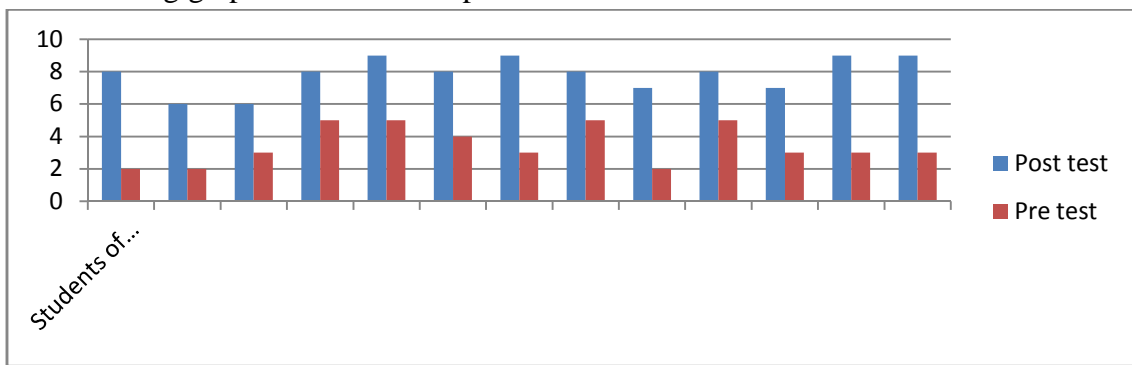
	Post test	Pre test
Students of Batch AL	8	2
	6	2
	6	3
	8	5
	9	5
	8	4
	9	3
	8	5
	7	2
	8	5
	7	3

		9	3
		9	3

	Post test	Pretest
Students of DL batch	9	7
	7	5
	6	5
	7	5
	6	2
	5	3
	6	3
	7	6
	6	3
	7	4
	7	5
	7	3
	7	3

Feedback forms were given to assess the method of learning and the type of active learning strategy the children preferred the most. Following graphs show the comparison of the scores in Pretest and posttest in the respective learning methods

Paired t test was used to assess the difference between the scores obtained by pretest and posttest. It was found to be effective.

		Mean	N	SD	SE	t-Value	P-Value
AL	Pre test	3.46	13	1.20	0.33	12.538	0.000
	Post Test	7.85	13	1.07	0.30		
DL	Pre test	4.15	13	1.46	0.41	8.716	0.000
	Post Test	6.69	13	0.95	0.26		
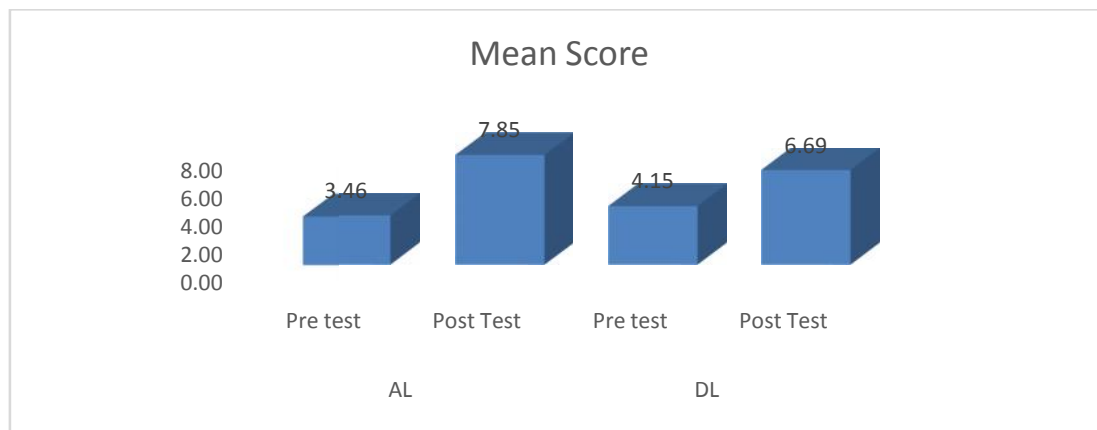
Unpaired t test was applied to the data obtained from the difference of the scores. As follows-

	Group	N	Mean	SD	SE	t-Value	P-Value
Score	AL	13.00	4.3846	1.26	0.35	4.057	0.000
	DL	13.00	2.5385	1.05	0.29		

The Students t test was applied for the statistical analysis of the data and the p value was found to be highly significant.
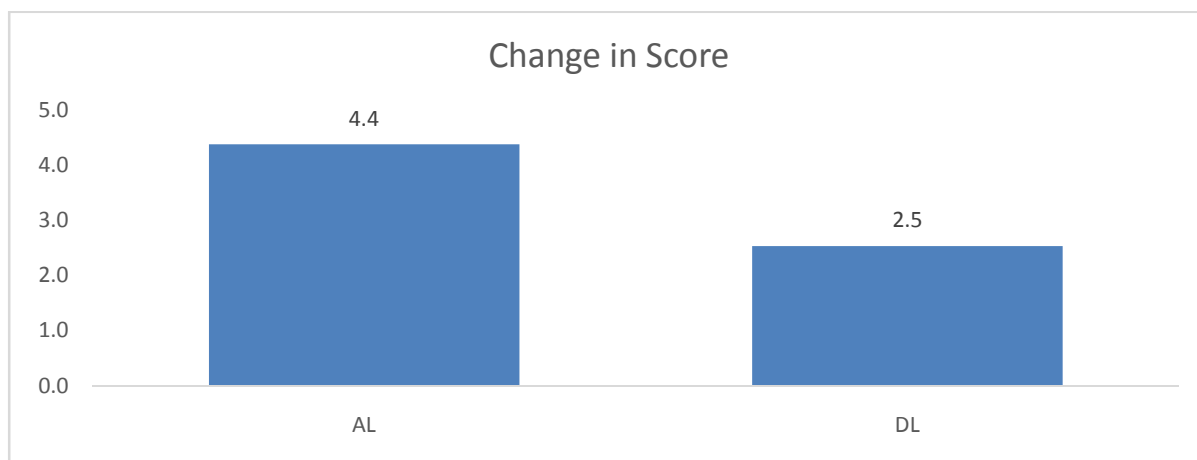
DISCUSSION

Both the learning methods are effective but active learning was more effective. The Quiz and Think pair share strategy were more preferred by the students. Higher thinking order could be assessed by the different active learning strategies which were also equally appreciated by the students. The student's feedback in the feedback form reflects that they will be preparing the said medicine very often. The purpose of this project was to motivate the students to prepare medicines and deeper understanding which was achieved.

Effectiveness of Learning		
	AL	DL
Very Effective	57%	0%
Effective	32%	100%
Not Effective	11%	0%
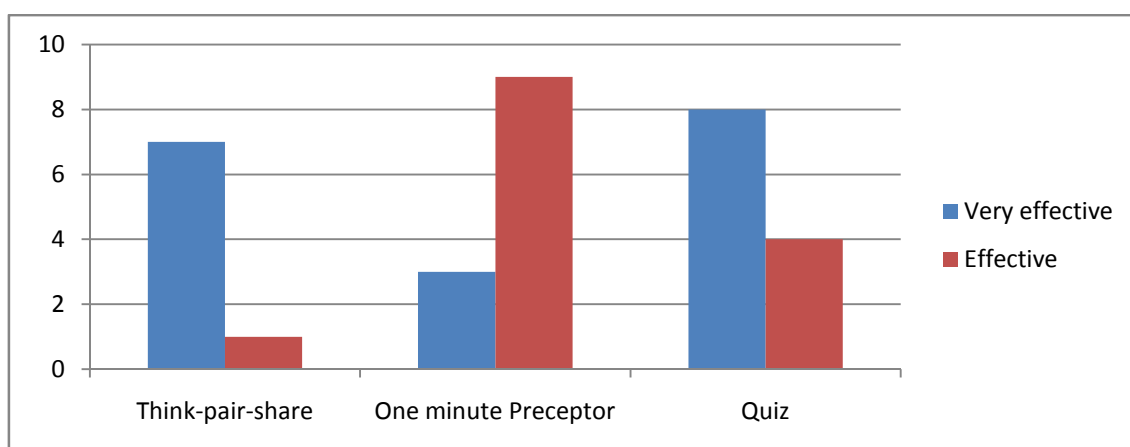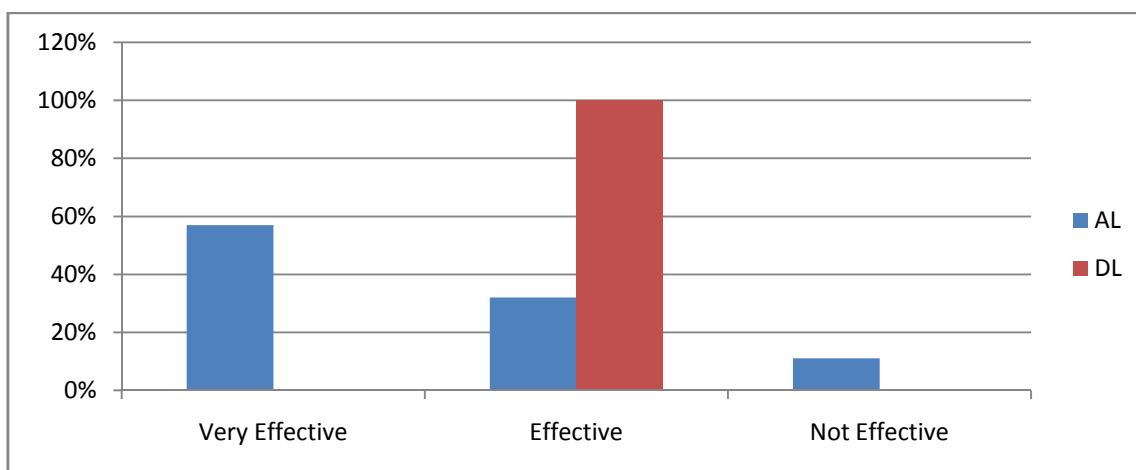
Learning experiences-This methodology puts some valuable insights into the factors that affect education in the same. The large classroom feedbacks became easier to gather. The one minute preceptors gave me the feedback that which points should I highlight more and what has been perfectly understood.

Meticulous planning was needed for the lecture. Designing the questionnaire was also detailed. Students liked the activities very much, which reflects in the feedback.

REFERENCES

1. Meyer C & Jones TB. Promoting active learning: Strategies for the college classroom. San Francisco: Jossey-Bass; 1993

2. http://teaching.uncc.edu/learning-resources/articles-books/best-practice/large-classes/large-class-handbook accessed on 26/12/2016

3. Bonwell, C. and Eison, J. 1991. Active Learning: Creating Excitement in the Classroom. AEHE-ERIC Higher Education Report 1. Washington, D.C.: Jossey-Bass.

4. http://allnurses.com/nursing-educators-faculty/active-learning-strategy-384213.html accessed on 27/12/2016.

5. http://web.calstatela.edu/dept/chem/chem2/Active/ accessed on 27/12/2016

Source of Support: Nil
Conflict Of Interest: None Declared