ACTIVE LEARNING MODELS FOR EFFECTIVE TEACHING

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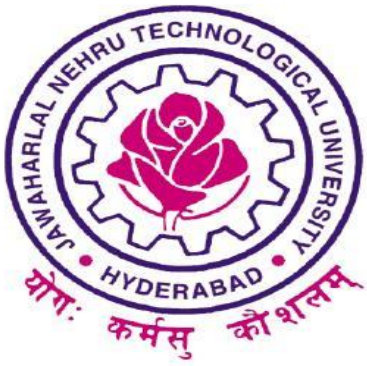

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CONTENTS

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MINI PROJECT REPORT

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Abstract

Introduction

In ancient 'Gurukula System' students learned primarily from the teacher but with the advancement of technology, changing social needs, globalization, and with increase of absorption levels of the students new teaching methods are sought apart from conventional lecture method. Today to gather information students are using internet, online libraries, television etc.

Active learning is an umbrella term that refers to several models of instruction that focus the responsibility of learning on learners. Bonwell and Eison (1991) popularized this approach to instruction (Bonwell & Eison 1991). This buzzword of the 1980s became their 1990s report to the Association for the Study of Higher Education (ASHE). In this report they discuss a variety of methodologies for promoting "active learning". They cite literature which indicates that to learn, students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. It relates to the three learning domains referred to as knowledge, skills and attitudes (KSA), and that this taxonomy of learning behaviours can be thought of as "the goals of the learning process"(Bloom, 1956).In particular, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation.-Active learning engages students in two aspects – doing things and thinking about the things they are doing (Bonwell and Eison, 1991).

Bonwell and Eison (1991) suggested learners work collaboratively, discuss materials while role-playing, debate, engage in case study, take part in cooperative learning, or produce short written exercises, etc. The argument is when should active learning exercises be used during instruction. Numerous studies have shown that introducing active learning activities (such as simulations, games, contrasting cases, labs,..) before, rather than after lectures or readings, results in deeper learning, understanding, and transfer. The degree of instructor guidance students need while being "active" may vary according to the task and its place in a teaching unit. In an active learning environment learners are immersed in experiences within which they are engaged in meaning-making inquiry, action, imagination, invention, interaction, hypothesizing and personal reflection Cranton (2012).

Some methods used by Philosophers for Teaching Upanishads are also mentioned in the report.

Objective

Objective of the study is to explore the 'learning activity' which increases the learning curve of the faculty and students.

Methodology

Methodology focuses on collection of data through primary and secondary sources. Primary data would be conducted through administration of a questionnaire, framed on the backdrop of the objective of the study and secondary data would be collected from journal, book and electronic media.

Expected Outcome

Study may reveal 'which learning activity (class game, just a minute, student debate, reaction to a video, learning cell, role play) would a energetic way to learn topic.

1. INTRODUCTION

In ancient 'Gurukula System' students learned primarily from the teacher but with the advancement of technology, changing social needs, globalization, and with increase of absorption levels of the students new teaching methods are sought apart from conventional lecture method. Today to gather information students are using internet, online libraries, television etc.

Ranjanie (2012) opines that the present scenario of Education system, all people are under pressure to use the innovative strategies in the teaching and learning process, to teach students the knowledge and skills that are required for the 21st century. It has been suggested that students whose activity is engaged with the material are more likely to recall information.

What is 'Active Learning'?

'Active Learning' like Creative Art & Craft helps enhance emotional development, imagination and fine motor skills, allowing students to experiment with various art media and material of different textures, colours, patterns. *Active Learning is a term used to identify teaching methods that require students to be actively involved in the Learning Process.* Examples of "active learning" activities include A. Class game B. Just a minute C. Student debate D. Watching a video E. Learning cell and F. Role play etc.

Research Evidence

One of the question to be answered is, if there is evidence to support learning activates. Studies bring in some evidence:

Ranjanie (2012) in her empirical study on "Attitude of middle school teachers towards active learning methodology (ALM) in Theni Dt., Tamilnadu" found that Active Learning Methodology has significant impact on students learning.

In a 2012 report titled "Engage to Excel, the United States President's Council of Advisors on Science and Technology (PCAST) described how improved teaching methods, including engaging students in active learning, will increase student retention and improve performance in STEM courses. One study described in the report found that students in traditional lecture courses

were twice as likely to leave engineering and three times as likely to drop out of college entirely compared with students taught using active learning techniques. In another cited study, students in a physics class that used active learning methods learned twice as much as those taught in a traditional class, as measured by test results.

In "Does Active Learning Work? A Review of the Research," Prince (2004) found that "there is broad but uneven support for the core elements of active, collaborative, cooperative and problem-based learning" in engineering education.

Richard Hake (1998) reviewed data from over 6000 physics students in 62 introductory physics courses and found that students in classes that utilized active learning and interactive engagement techniques improved 25 percent points, achieving an average gain of 48% on a standard test of physics conceptual knowledge, the Force Concept Inventory, compared to a gain of 23% for students in traditional, lecture-based courses.

Hoellwarth & Moelter (2011) showed that when instructors switched their physics classes from traditional instruction to active learning, student learning improved 38 percent points, from around 12% to over 50%, as measured by the Force Concept Inventory, which has become the standard measure of student learning in physics courses.

2. LITERATURE REVIEW

Learning Methods Through Ages

The philosophers of the Upanishads utilized various methods in their discussions and teachings!

The main methods followed by them are as follows:

1. Aphoristic Method:

Aphoristic method of the Upanishads has been widely used. In this method, knowledge is compressed in small aphoristic sentences, which require sufficient intelligence to understand them. It is for this reason that the same sentences have been interpreted differently by different commentators.

For example: In the *Mandukya Upanishad*, it has been said, The syllable, 'Om' is verily all that exists. Under it, is included all the past, the present and future, as well as that which transcends time. Verily, all this is Brahman. The Atman is Brahman. This Atman is four-footed. The first foot is the *Vaiswane*, who enjoys gross things in the state of wakefulness.

The second is the *Taijasa*, who enjoys exquisite things in the state of dream. The third is the *prajna*, who enjoys bliss in the state of deep sleep and the fourth is the Atman who is alone, without a second, calm, holy and tranquil." This passage has been differently interpreted in the different systems of the Vedantic philosophy.

2. Etymological Method:

In the etymological method, the meaning of word is explained according to its root. In the *Brhadaranyaka Upanishad*, we are told that "*Purusa*" is really "*Purisaya*" i.e., inhabiting the citadel of heart. Examples like this can be seen in other Upanishads, also.

3. Mythical Method:

Mythical method has been mostly used in teaching. In the *Upanishad*, e.g., in the *Kena Upanishad*, the parable of *Indra* and the demons has been told to preach the lesson of humility. Sometimes a myth is introduced for aetiological purposes, as, for example, the myth of the sun coming out of the huge world egg.

Sometimes one finds a transcendental myth. In the *Aitereya Upanishad*, e.g., it is explained how the Atman entered the human skull and became individualized as the human soul. Similarly, a myth is sometimes introduced for the sake of parody.

4. Analogical Method:

Things which cannot be explained by reasoning are explained by analogy. For example*, Yajnavalkya* introduces the analogy of the drum or the conch in order to explain the processes of the apprehension of the self. *Aruni* explains the non-difference of the individual soul from the universal soul by the analogy of the

juices in constitution honey or the rivers in flowing into the ocean and being merged with it.

5. Dialectical Method:

The dialectical method is one of the most widely used methods of the Upanishads. In this method, the philosophers assembled at some place and dramatically discusses different problems among themselves. In the Upanishads such discussions and symposia have been mentioned at many places.

6. Ad hoc or Temporizing Method:

The teachers of the Upanishads taught their disciples according to their mental and psychological level. In the temporizing method, as the spiritual level of the enquirer rises, the teacher not only shows him the path ahead, but also tells him the whole truth gradually.

This method has been accepted as very important by the modern educational psychology. In the famous parable of *Indra and Virochana, Virochana* is satisfied by the first answer of his teacher *Prajapati*, but *Indra* is not satisfied and goes on questioning him.

Prajapati tells him the secret of the soul, first in the body, then in the dream and sleeping stages and it is after that alone that he explains to him the real nature of the soul. In this method, the enquirer himself struggles to understand the truth and the teacher only guides him. Hence, this method is very important for spiritual evolution.

7. Regressive Method:

The regressive method is in the form of many successive questions in which every new question carries us at the back of the answer to the previous one. Thus when *Janak* asked *Yajnavalkya* about the light of man, *Yajnavalkya* answered that it was the sun.

Janak kept on going to the back of answer after answer, carrying *Yajnavalkya* from the sun to the moon, from the moon to the fire, and from the fire to the Atman which exists behind them all as the light m itself. In the same

Upanishad the regressive method had been used in the discussion between *Yajnavalkya* and *Gargi*.

While the above methods proved to be effective teaching techniques in the past, lecture, method continued to be used in 21st centuary. Off late "active learning" activates are also used in the classes. Description of some of the active learning activities is as follows:

Learning Methods In Modern Times

8. A **class discussion** may be held in person or in an online environment. Discussions can be conducted with any class size, although it is typically more effective in smaller group settings. This environment allows for instructor guidance of the learning experience. Discussion requires the learners to think critically on the subject matter and use logic to evaluate their and others' positions. As learners are expected to discuss material constructively and intelligently, a discussion is a good follow-up activity given the unit has been sufficiently covered already.

Some of the benefits of using discussion as a method of learning are: it helps students explore a diversity of perspectives, it increases intellectual agility, it shows respect for students' voices and experiences, it develops habits of collaborative learning, it helps students develop skills of synthesis and integration, it helps students develop skills of synthesis and integration, it leads to transformation (Brookfield 2005).

9. A **think-pair-share** activity is when learners take a minute to ponder the previous lesson, later to discuss it with one or more of their peers, finally to share it with the class as part of a formal discussion. It is during this formal discussion that the instructor should clarify misconceptions. However students need a background in the subject matter to converse in a meaningful way. Therefore a "think-pair-share" exercise is useful in situations where learners can identify and relate what they already know to others. So preparation is key. Preparing learners with sound instruction before expecting them to discuss it on their own. Think-pair-share is helpful for the instructor as it enables organizing content and tracking students on where they are relative to the topic

being discussed in class, saves time so that he/she can move to other topics, helps to make the class more interactive, provides opportunities for students to interact with each other (Radhakrishna, Ewing, and Chikthimmah, 2012).

10. A **learning cell** is an effective way for a pair of students to study and learn together. The learning cell was developed by Marcel Goldschmid of the Swiss Federal Institute of Technology in Lausanne (Goldschmid, 1971). A learning cell is a process of learning where two students alternate asking and answering questions on commonly read materials. To prepare for the assignment, the students will read the assignment and write down questions that they have about the reading. At the next class meeting, the teacher will randomly put the students in pairs. The process begins by designating one student from each group to begin by asking one of their questions to the other. Once the two students discuss the question, the other student will ask a question and they will alternate accordingly. During this time, the teacher is going around the class from group to group giving feedback and answering questions. This system is also referred to as a student dyad.

11. A **short written exercise** that is often used is the "one minute paper." This is a good way to review materials and provide feedback. However a "one minute paper" does not take one minute and for students to concisely summarize it is that they have at least 10 minutes to work on this exercise.

12. A **collaborative learning group** is a successful way to learn different material for different classes. It is where you assign students in groups of 3-6 people and they are given an assignment or task to work on together. This assignment could be either to answer a question to present to the entire class or a project. Make sure that the students in the group choose a leader and a note-taker to keep them on track with the process. This is a good example of active learning because it causes the students to review the work that is being required at an earlier time to participate. (McKinney, Kathleen. (2010). Active Learning. Normal, IL. Center for Teaching, Learning & Technology.)

In order to create participation and draw on the wisdom of all the learners the classroom arrangement needs to be flexible seating to allow for the creation of small groups (Bens, 2005).

13. A **student debate** is an active way for students to learn because they allow students the chance to take a position and gather information to support their view and explain it to others. These debates not only give the student a chance to participate in a fun activity but it also lets them gain some experience with giving a verbal presentation. (McKinney, Kathleen. (2010). Active Learning. Normal, IL. Center for Teaching, Learning & Technology.)

14. A **reaction to a video** is also an example of active learning because most students love to watch movies. The video helps the student to understand what they are learning at the time in an alternative presentation mode. Make sure that the video relates to the topic that they are studying at the moment. Try to include a few questions before you start the video so they will pay more attention and notice where to focus at during the video. After the video is complete divide the students either into groups or pairs so that they may discuss what they learned and write a review or reaction to the movie. (McKinney, Kathleen. (2010). Active Learning. Normal, IL. Center for Teaching, Learning & Technology.)

15.A **class game** is also considered an energetic way to learn because it not only helps the students to review the course material before a big exam but it helps them to enjoy learning about a topic. Different games such as jeopardy and crossword puzzles always seem to get the students' minds going. (McKinney, Kathleen. (2010). Active Learning. Normal, IL. Center for Teaching, Learning & Technology.)

16. **Learning By Teaching** is also an example of active learning because students actively research a topic and prepare the information so that they can teach it to the class. This helps students learn their own topic even better and sometimes students learn and communicate better with their peers than their teachers.

3. METHODOLOGY

3.1 Research Problem

A preliminary survey reveals that many articles, books and research studies on "Active Learning" are available, but not many studies are available on "active Learning" methods relating to degree college faculty or students in India. In view of this gap, it was proposed to undertake a project on the "Effective Active Learning" methods for degree college faculty and students.

3.2 Objective

Objective of the study is to explore the 'learning activity' which increases the learning curve of the faculty and students.

3.3 Research Design

A research design is a conceptual structure within which research is conducted; it constitutes the blue print for the collection, measurement and analysis of the data.(Kothari, 1985)

The main purpose of this research study is to explore the 'learning activity' which increases the learning curve of the faculty and students.

Methodology focused on collection of data through primary and secondary sources. Primary data would be conducted through administration of a questionnaire (Appendix 1), framed on the backdrop of the objective of the study and secondary data was collected from journals, books and electronic media. Simple statistical tool of "Cross Tabulation" was used for the analysis of the data.

3.4 Data collection from Primary and Secondary sources

Primary data was collected through administering a questionnaire to a sample of 31(which is a statistical standard) respondents comprising degree college lectures with specializations in different disciplines, with educational qualification of doctorate and postgraduate degrees, and having teaching experience of 10-15 years. These professionals were attending a Orientation and Research Strategy courses in Academic Staff College (ASC), Jawaharlal Nehru Technological University Hyderabad (JNTUH) in Hyderabad.

Secondary data was collected from research papers published in journals, books of famous authors and quality content was collected from websites, which are duly acknowledged.

3.5 Development of the Survey Instrument

A questionnaire was developed from two perspective viz. for degree college faculty and for degree college students (Refer Appendix 1). Three core questions were framed which are as follows:

Question 1. Among the following learning activities, which one would increase MAXIMUM LEARNING IN YOU"?

A. Class game B. Just a minute C. Student debate D. Watching a video E. Learning cell and F. Role play

Question 2. Among the following learning activities, which one would increase "MAXIMUM LEARNING IN DEGREE COLLEGE STUDENTS"?

A. Class game B. Just a minute C. Student debate D. Watching a video E. Learning cell and F. Role play

Question 3. Do you suggest 'ANY OTHER LEARNING ACTIVITY', please explain?

3.6 Limitations

The study is limited to opinions of degree college faculty, who hail from Andhra Pradesh and Karnataka states.

4. ANALYSIS, CONCLUSIONS and SUGGESTIONS

Question1. Among the following learning activities, which one would increase MAXIMUM LEARNING IN YOU"?

Findings: Table 1

Learning Activity	No of responses, N= 31
A. Class Games	2
A. Just a minute	0
B. Student debate	9
C. Watching a video	7
D. Learning Cell	3
E. Role Play	10
One respondent answered multiple options, hence it is not considered.	

Conclusion:

From the above table, it may be observed that degree college lecturers 'learn maximum' through 'role plays', 'student debates' and by 'watching videos'.

Suggestion:

Three learning activities viz. 'role plays', 'student vs student or lecturer vs lecturer debates' and 'showing videos' may be used in regular class and training workshops.

Question 2. Among the following learning activities, which one would increase "MAXIMUM LEARNING IN DEGREE COLLEGE STUDENTS"?

Findings: Table 2

Learning Activity	No of responses, N= 31
A. Class Games	1
A. Just a minute	3
B. Student debate	13
C. Watching a video	2
D. Learning Cell	4
E. Role Play	8
One respondent answered multiple options, hence it is not considered.	

Conclusion:

From the above table, it may be observed that degree college lecturers opine that degree college students 'learn maximum' through 'student debates' and 'role plays'.

Suggestion:

Two learning activities viz. 'student debates' and 'role plays' may be used in regular class and training workshops.

Question 3, solicited the respondents to suggest "Any Other Learning Activity" which would increase the learning curve. Some of the suggestions are noteworthy.

Suggestion 1.

'Open Discussion of the Syllabus', means lecturer/teacher will discuss the syllabus in a constructive way or topic vise with student, rather than a one way lecturing. The advantage of this method is the syllabus coverage is 100%. Students get involved in discussion because it is debate. This could be further extended as a debate between students.

-Narayana,. K. Y. GOC, Kalyandurg

Suggestion 2.

Assign project work in groups, so that students go to field work and learn application of the theory taught in the class.

-Jhansi Rani, Govind, Paramesh, Vishwanadh, and Manoj

Suggestion 3.

Involve all students in Seminars. Benefits of seminars are:

1. Improves content knowledge and arrangement of content.
2. Leadership qualities
3. Proper response to questions
4. Emotional balance, when student asks questions.
5. Blackboard skills

-P. Harikrishna

Suggestion 4.

At the end of each session, 5 minutes should be given to one student to talk on the topic, so that by the end of the semester all students have the opportunity for interaction.

-E. Kalpan

5. EVALUATION

Present Situation

In our college BA, BSC and B.com courses are offered in three media: Telugu, English and Urdu for girl students. English and Urdu medium girls are interactive but Telugu medium girls lack communication skills and other soft skills. As a result they are not interactive and assertive and do not absorb the subject content to a maximum level. At present in our college we are using the learnig activities like 'elocution' , 'quiz' and debate

Change in college with new learning activities

To improve the learning curve of Telugu medium students, I wish to introduce two learning activities viz. 'student debates' and 'role plays' (results of the study) in regular classes and training workshops, which could improve **communication skills and subject knowledge.**

6. SELF EVALUATION

I am a Telugu lecturer with 16 years of experience in Govt. junior and degree colleges. Because of rapid changes in the society, students are more interested in Science and Technology, As a result they are not giving 'due' importance to the study of languages, which contributes to the personality development (emotional balance, joy of reading literature and following ethical values). Hence to create interest among the students about language subjects, along the traditional 'Lecture' method, I wish to introduce new learning activities. In 38th Orientation, several learning activates were demonstrated/explained and I could see the impact on the learning levels of the participants. For the benefit of the students, and to make them ready to face the challenges of the future, I would find creative ways to use energetic leaning activities viz:Class games, Just a minute, Student debate, Screening a video, Learning cell and Role play.

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Appendix 1

Active Learning Models for Effective Teaching -Mini Project Report

Sujatha Devi, IPGC, Hyderabad.

Name:

Objective of the Mini Project

Increase the learning curve of the students by using different creative methods of instruction.

Note: Please Tick on your choice.

Question 1. Among the following learning activities, which one would increase MAXIMUM LEARNING IN YOU"?

F. Class game B. Just a minute C. Student debate

D. Watching a video E. Learning cell F. Role play

Question 2. Among the following learning activities, which one would increase "MAXIMUM LEARNING IN DEGREE COLLEGE STUDENTS"?

F. Class game B. Just a minute C. Student debate

D. Watching a video E. Learning cell F. Role play

Question 3. Do you suggest 'ANY OTHER LEARNING ACTIVITY', please explain?

Thank you.