GSTF Journal on Business Review (GBR) Vol.3 No.2, March 2014

Student-Centric Teaching - Perspectives of Students on the Teaching Strategies

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***ABSTRACT*-This research was conducted to find students' viewpoints toward different teaching strategies used in higher education. The research method used to collect data was through a questionnaire. It involved two sections: one aimed to evaluate effectiveness of different teaching strategies. The other was about identifying which class activities are mostly liked by students that help them to understand the topics better. The subjects for the research were students since the student is the primary outcome of the teaching process. The data was collected from a random sample of three hundred fifty students for the research at an undergraduate college. The findings were analyzed using statistical tool-ANOVA analysis, coefficient of variance, tables and charts. Based on the findings, it is clearly inferred that there is no particular teaching strategy that derives effectiveness neither an absolute class activity that helps students to absorb the material better. All depends on many circumstances such as the learning environment, level of students and the content to be delivered.**

Keywords: Power point presentations (PPT), case study, field trip, audio/video, group discussions

INTRODUCTION

Teaching strategies are a combination of instructional methods, learning activities, and materials that actively engage students and appropriately reflect both learning goals and students' developmental needs. Educators must adapt to teaching methods that will achieve the goal of student-learning outcome. The Educator has many choices to experiment and design a teaching technique for enhancing student-learning. However, the teacher must decide the appropriate teaching strategies to implement in class based on the level of students, the learning environment and type of the content as they can play a significant role in determining the outcome of students.

OBJECTIVES

This research was conducted to evaluate different teaching strategies in higher education at undergraduate level. The first purpose of the study is to evaluate the effectiveness of different teaching strategies adopted in the class that maximize the students' abilities to organize information for understanding and remembering. The second purpose is to identify and determine which class activities that motivate students and help them focus attention.

METHODOLOGY AND SCOPE OF STUDY

The primary data for this research was gathered by using a questionnaire that was designed in two sections. The first section involves five fixed statements for evaluating the current teaching methods on a Likert scale from 1to 5 based on their effectiveness.

Fixed-evaluating statements (Determinant-Choice statements) used to identifying the effectives of Teaching Strategies are:

1. Topics delivered using pure lecture without using any aids
2. Topics delivered using lecture that is supported by PPT.
3. Topics delivered using lecture and audio/video clipping
4. Topics delivered using lecture and activities-collaborative teaching
5. Topics delivered using only activities without a lecture

Attitudinal Likert scale is used to measure the effectiveness as Very Ineffective, Ineffective, Average, Effective, and Very Effective

The second section contains a list of seven class activities for determining the most interactive ones.
The Class Activities are:

1. Group Discussion (i.e., Interaction among students)
2. Class Discussion (i.e., Interaction between the teacher and students)
3. Presentation by students
4. Debate
5. Case Study Analysis
6. Audio/Video clipping
7. Field Trip

The questionnaire was randomly distributed among a sample size of three hundred and fifty students at undergraduate level. The findings are analyzed using tables, charts, statistical tool-Anova analysis and coefficient of variance.

LITERATURE REVIEW

Service learning is encouraged to be implemented in higher education (Bringle & Hatcher, 1996). More and more undergraduates are volunteering to take up teaching for developing service learning in higher education. These under

DOI: 10.5176/2010-4804_3.2.311

graduating students have a need to identify the teaching methods that are in well-organized form (Shih, Tseng, Yang & Liang, 2011). Among the teaching methods, inductive method of teaching adds a reflective component to facilitate deep learning for small groups (Jones, Holland & Oldmeadow, 2008). When topics involve economics with wealth, teaching experiment methods on fair distribution using game theory will be appreciated (Antequeraab, & Espinel, 2011). In order to make learning enjoyable and goal-pursuing, digital games provide promising possibilities to motivate and engage students in subject learning (Chen, Liao, Cheng, Yeh & Chan, 2012)**.** The digital game method can also be used for teaching at higher education level. Case method of teaching that requires less teaching resources and is useful in situation due to increasing number of students and staff cuts. This method provides training in problem solving and is useful in clinical education within health profession (Crang-Svalenius, & Stjernquist, 2005). Problem-based learning is widely introduced to develop active leaning, critical thinking, communication skills and other professional competencies. Case method of teaching enables to productively apply basic principles in problem-solving (Bowe, Voss & Aretz, 2009). Story telling is a novel method adapted to develop empathy skills while conducting interview (Joachim, 2008). It is very important for the teachers to have knowledge apart from literacy practices across content discipline. By reading, writing and thinking in common ways to a disciple, students can gain deeper knowledge and understanding of disciplinary content (Johnson, Watson, Delahunty, McSwiggen & Smith, 2011).

When students have a reading comprehensive problem, then Dynamic Indicator of Basic Early Literacy Skill (DIBELS; Good & Kaminski, 2002) will ensure students improvement in meeting benchmark (Hagaman, Luschen & Reid, 2010**).** Many students have learning challenges in courses like science, technology, engineering and math. In these courses if the teacher uses lecturing method then the performance of the students will be below grade level in literacy skills and students will struggle to make these course contents relevant to their lives (Kennedy & Wexler, 2013). The methods of teaching can be significant based on students learning. Implementing a blend of online learning, Team-Based Learning (TBL) and learning from lectures, there is a significant difference in these methods. Students' preference on TBL is anytime better than lecture method, whereas online method preference also diminished over the acceptance of TBL (Davidson, 2011). Scenariation is an approach of teaching using video simulating the workplace. This approach highlights not just the potential but also difficulties associated within online line delivery to a large and diverse group of students (Smith, Gillham, McCutcheon & Ziaian, 2011). Using Video modeling technique to teach within a classroom is not only promising but it is also practical and efficient tool (Wilson, 2013).

It is assumed that students-activating experience push towards conceptual changes/students-focused approaches. The student teachers' approach to teaching changes and tends to be affected by variable such as performance, academic self-esteem, perceive workload and students leaning approach changes due to variable that operate in distinct ways for diverse categories of approaches and work differently (Struyven, Dochy & Janssens, 2010).

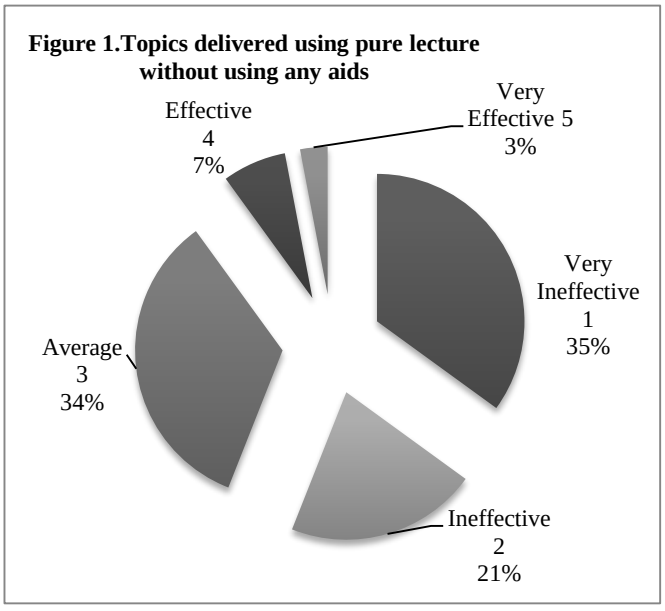
One of the methods for teaching historical subjects is by Jackdaw approach. This approach is used by collecting artifacts integrated with literature that is based on historical time period. This approach will create a positive experience for students and encourage them to think like historians and moreover researchers claim this method can capture the attention of even a reluctant learner (Marshall, 2010). But will this method of teaching contribute a success in higher education is debatable.
Open Educational Resource (OER) method of teaching by the higher education institution is fine for confidently and experience learners (Lane, 2012). But it still lies to identify whether OER method of teaching can be still used for conventional undergraduate students.

While exploring different methods of teaching, in classroom, educators can use collaborative teaching by the unification of traditional lecture approach with collaboration works. It will integrate time for students not only to digest the material but also to expand knowledge base to think critically and creatively (Osterholt & Barratt, 2012). Thus, a lecture method combined with a constructive active shall enhance students learning outcomes.

FINDINGS AND ANALYSIS

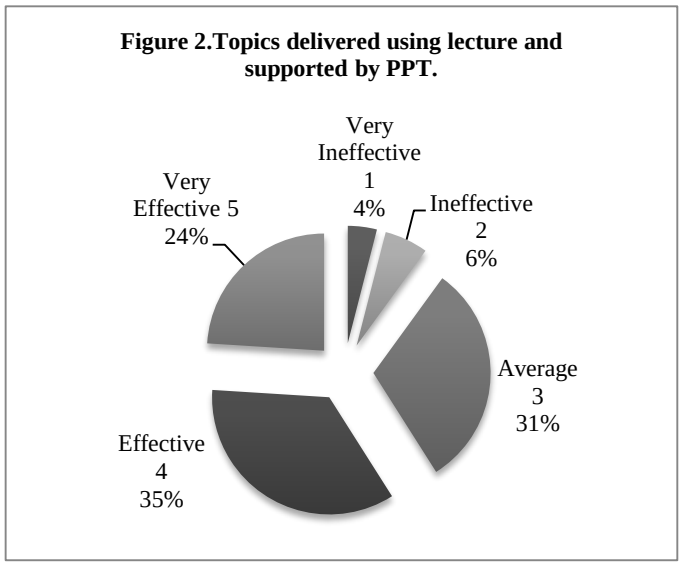
Based on the data collected from the random sample of three hundred and fifty students, the data was analyzed using a variety of statistical tools. The tools used are: tables, charts, coefficient of variance and ANOVA analysis.
The first section, *Teaching Strategies,* involve five statements and students were expected to scale each teaching strategy on the effectiveness.
Analysis is done in two ways. First, analysis is based on ***charts***.

Figure 1 Topics delivered using pure lecture without using any aids



In assessing the effectiveness of a lecture delivered without any aids, i.e., from figure 1, it is noticed that 35% of total students found the lecture is not effective when it is delivered without any aids and 21% are also not interested in this type of delivering lectures. On the other hand, 34% felt somewhat convenient toward plain lectures. The lowest percentage of total students 7%, said it is quite effective and 3% scored it as very effective. Since, there is no much difference between not effective and average opinion, it does not give a significant conclusion for this conventional method of teaching.

Figure 2 Topics delivered using lecture that supported by Power Point presentations (PPT)



The second teaching strategy is topics delivered using a lecture that is supported by a technology aid, PowerPoint. Figure 2 illustrates that 35% of total students found a combination of a plain lecture and PowerPoint slides are quite effective and 24% strongly agreed on the effectiveness of this type of teaching. However, 31% said it is not effective neither ineffective, so it fits in between. The lowest percentage for this statement is 4% and 6%, respectively, found that is not a good technique for delivering a certain topic.

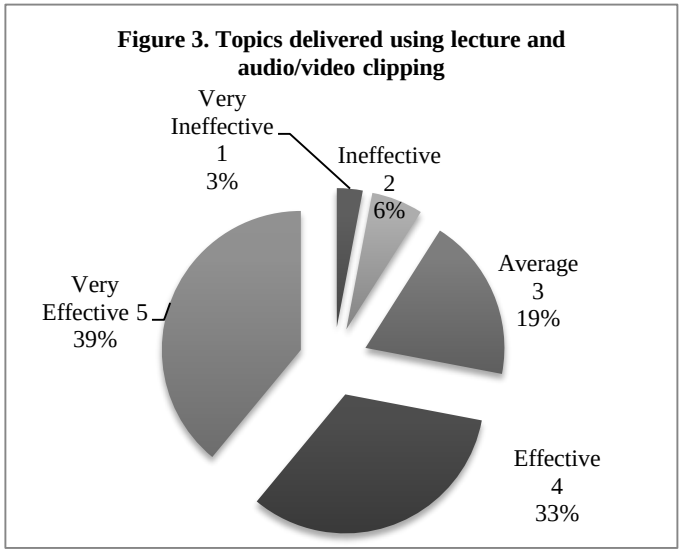
Figure 3 Topics delivered using lecture and audio/video clipping

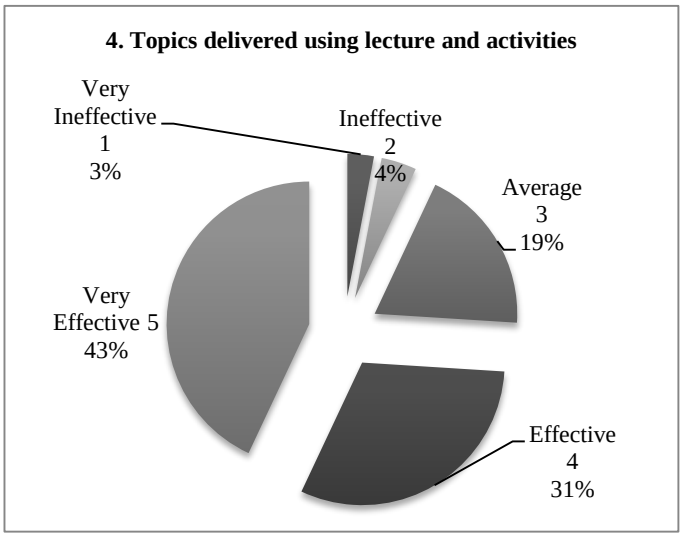
In the assessment of the third statement or the third strategy that is about topics delivered using lecture and audio/video clipping, the students opinion shown in figure 3 has the highest percentage, i.e. 39% of total students' strongly preferred pure lectures supported by media and 33% found it just to be effective if it is applied in a class. The average scale was selected by 19% of the total students. Their opinions were neither agree nor disagree toward this technique. The minority of respondents that are 3% and 6%, respectively, disagreed with a combination of media and lecture as a teaching method.

Figure 4 Topics delivered using a lecture and activities-collaborative teaching

Moving to the fourth method of teaching strategy that is topics delivered using lectures and activities-collaborative teaching. The students evaluated and figure 4 illustrates clearly the students' responses.

The majority of respondents, 43% of them found it is very effective which helps them to focus and understand the topic better. Also, 31% agreed on this type of delivering a lecture. On the other hand, 19% felt somewhat neutral toward having a



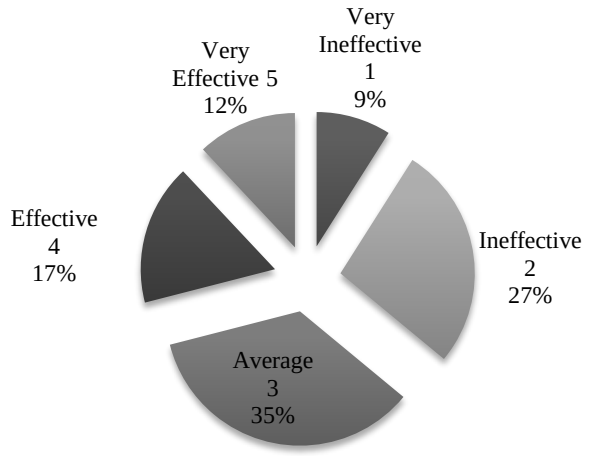


lecture supported by activities. Very few students, 4% of them said it is in effective and 3% mentioned this teaching strategy to be very ineffective for teaching.

Figure 5 Topics delivered using only activities without a lecture

The last statement was about topics delivered using only activities without a lecture. A sample students evaluated this teaching strategy and figure 5 shows the majority of students i.e., 35% of them had an average opinion. Other group of 27% found topics delivered using only activities to be ineffective and other 9% of total students strongly disagreed with this method of teaching. However, group of 12% and 17% of total students said to be very effective and effective, respectively and can be preferred to have class completely based on activities.

Figure 5. Topics delivered using only activities without a lecture



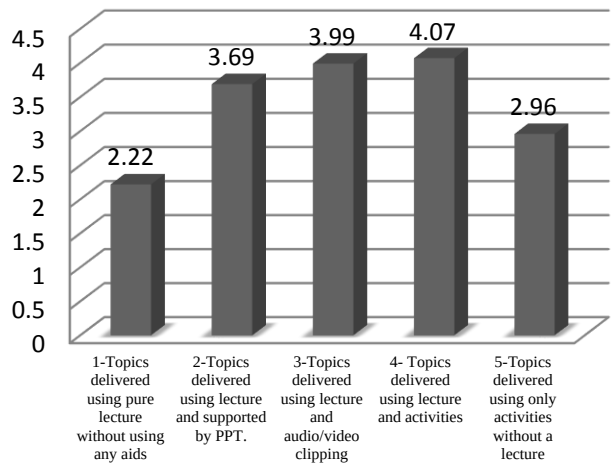
Summarization of the figures from 1 to 5 is presented in the form of table as below:

Table 1

Teaching Strategies	Rating
1. Topics delivered using pure lecture without using any aids	2.22
2. Topics delivered using lecture that supported by PPT.	3.69
3. Topics delivered using lecture and audio/video clipping	3.99
4. Topics delivered using lecture and activities-collaborative teaching	4.07
5. Topics delivered using only activities without a lecture	2.96

Figure 6 Teaching strategies rating

Figure 6: Teaching Strategies Rating



From table 1 & figure 6 it is clear that topics delivered using combination of lecture and activities (rating =4.07) i.e. collaborative teaching is said to be effective among the other teaching methods, which indicates that it is the most preferable teaching method from students' perspective. However, topics delivered without using any aids –i.e., plain lectures- is having a low rating (rating = 2.22), which means that it is the least effective teaching method from students' perspective.

Second analysis is based on ***ANOVA analysis***: ANOVA analysis is used here to prove and ensure whether the most effective teaching strategy (i.e. topics delivered using combination of lecture and activities) is actually an absolute technique that derives effectiveness in the teaching process.

ANOVA - one-way analysis of variance with single factor is used for analyzing the data. The single factor of interest here is *Delivering Lectures* that is effective. The factor has five teaching strategies of measurement called methods of teaching:

1. Topics delivered using pure lecture without using any aids
2. Topics delivered using lecture that is supported by PPT.
3. Topics delivered using lecture and audio/video clipping
4. Topics delivered using lecture and activities-collaborative teaching
5. Topics delivered using only activities without a lecture

Statistical tool for conducting hypothesis test for this experimental design is analysis of variance with one factor. As the sample for each factor delivering lectures is the same, the experiment has a balanced design.

Assumption:

Null Hypothesis H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$ (mean sizes are equal)

Alternative Hypothesis H_A: At least two of the population means are different.

The test is based on three assumptions:

1) All populations are normally distributed.

2) The population variances are equal.

3) The observations are independent.

That is the occurrence of any one independent value does not affect the probability that any other observation will occur.

4) The data are Interval and ratio level.

If the null hypothesis is true, then the population has identical distribution. That is the same mean for random sample for each population should be close in value. The null hypothesis is rejected only if the sample mean are substantially different.

ANOVA analysis

Table 2

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	**4932.24**	**4**	**1233.06**	**0.29**	**0.88**	**2.87**
Within Groups	**83648.8**	**20**	**4182.44**			
Total	**88581.04**	**24**				

H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$

H_A: At least two of the population means are different.

$\alpha = 0.05 = 5\%$

By comparing the calculated F value to the F critical value, from the above table 2, by comparing p-value to the significant level conclusion can be drawn as:

If **Fcal** > $\mathbf{F_{0.05}}$, reject H_0; otherwise, do not reject H_0

If **p-value** < α, reject H_0; otherwise, do not reject H_0

$F = 0.29 < \mathbf{F_{0.05}} = 2.87$, thus do not reject H_0 (or p-value = 0.88 > α = 0.05) Do not reject H_0

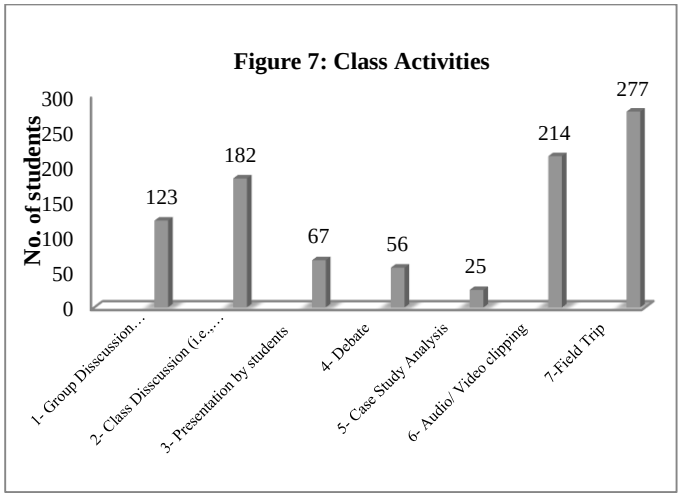
So the null hypothesis is accepted, it can be concluded that the mean scores of the different teaching strategies are same. Thus, we conclude that the educator can use any method of lecturing for teaching the topics.

The second section is *Class Activities*, seven activities were listed and students were asked to choice the activities that are liked by them and help them to stay focus in the class. Analysis is done by a frequency table and chart. The class activities and the results presented in table 3.

Students were asked to write check ☑ next to the most interested activities in the class. From table 3 and figure 7 it is clearly noticed that 277 students made the *Field Trip activity* the highest, which indicates that it is the most desired activity in the class. However, the lowest activity column in the chart is *Case Study Analysis* that was preferred by 25 students. By calculating co-efficient of variance, conclusion can be drawn.

Table 3:

Class Activities	Frequency
1. Group Discussion (i.e., Interaction among students)	123
2. Class Discussion (i.e., Interaction between the teacher and students)	182
3. Presentation by students	67
4. Debate	56
5. Case Study Analysis	25
6. Audio/ Video clipping	214
7. Field Trip	277



The data collected from the students was analyzed using descriptive statistics. The results are:

Smallest	25
Mode	277
Std. Deviation	93
Variance	93
Mean	8615
Co. efficient of Variation	*69.01%*

There is no consistency among the choices made by students on different class activities; there is a very high variability among the class activities desired by the students. Thus, it is difficult to identify or recommend any specify activities for delivering the topic.

CONCLUSION

The teaching method must be adapted on the basis of certain criteria like the knowledge of the students, the environment and a set of learning goals for the academic curriculum.

Students are unique by themselves who respond differently for different methods of teaching. Due to their uniqueness the students demonstrate differences in choosing the method of teaching strategies. Thus, based on ANOVA analysis, to support the process of demonstrating the knowledge, the educator has to adopt a technique that enables the students in retaining the gained knowledge and increasing their understanding abilities.

Moreover, to keep the learning process more active, an environment must be created to engage students in a variety of class activities. Out of the total sample size of students, 277 of them preferred out-door activity. Thus, there is no consistency among choices made by students on different activities; hence it is difficult for the educator to strike a balance among different activities to deliver the lecture. Finally, as students considered the dominant factors and outcome of the learning process, it is recommended to question them frequently about the most preferred activities that help them in understand the topic and content better. This research work can lead to further research to investigate each teaching strategy in depth and check its

effectiveness to students learning outcome and also apply jackdaw method of teaching other than historical subjects.

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