



EFFECTIVENESS OF VIVISECTION PRESENTATION AND POWERPOINT PRESENTATION ON THE SYSTEMS OF VERTEBRATES ON THE ACHIEVEMENT OF PHARMACY STUDENTS

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Science is a great human enterprise. It is self-accumulating, self-growing, self-pervading and self-accelerating and self-correcting enterprise which originated in the collective curiosity of man since time immemorial. It attempts to provide a body of knowledge through procedure that are demonstratively objective but often done in a subjective context. Every effort will be made to extend science education to the vast numbers who have remained outside the pale of formal education. A scientific literate individual is "one who makes informed decision within a science and technology context by drawing upon their rich scientific knowledge such as an understanding of the concept, principles, theories and processes of science. (Abd-El-Khalick et al)

If science is done badly, it is worse than useless, science taught badly not only degenerate into superstitions, but makes a negative contribution to education. To learn science is do science. There is no other way of learning science. (Kothari, 1963). In teaching Biology, Emphasis should be on practical laboratory work and field study is order to give the pupils experience in scientific inquiry. In practical's, vivisection or dissection are important elements in teaching of biology. Vivisection means dissection of living animals for experimental purposes. Dissection is to cut apart for scientific examinations, usually is reference to the study of animals or humans (Hopkins, 2009). A 2002 Human society poll, for instance, reported that the majority of biology teachers believe real animal dissection is a better educational experience than the virtual alternatives.

Another teaching method for teaching anatomy is through power point presentation. The presentation can be printed, displayed live on a computer or navigated through at the command of the presenter. Power Point presentation present the instructional material before the learner in a systematic way and learner learn according to preset system.

Achievement in biology includes not only knowledge in the form of content of animal groups, structure and function of organism, genetic principles, dates, events, terminology and formula involved, but also some skills like experimental, constructional and drawing skills, In the achievement test of zoology practical make larger part, on the basis of practical skills even theoretical knowledge can be change.

JUSTIFICATION OF THE STUDY

Teaching biology students can be a challenge for a teacher when he/she wants to overcome rote learning of facts without a deeper understanding of the physiological processes. Advocates say there is no substitute of learning about anatomy than hands on experience. So the nutritionists, pharmacologist, microbiologist, physiologists use live animals. Vivisection is believed to be widespread throughout the world. According to animal welfare act (AWA) 100 millions of animals used annually for various purposes like vivisection, drug experiments cosmetic testing etc. Vivisection as a method of instruction in the biological sciences has been questioned for ethical animal welfare environmental and pedagogical reason (O'Mearo, 1655). Ban on vivisection is not new. The miserable torture of vivisection surely places the body in unnatural state. Decks have been cleared

for the University Grants Commission (UGC) to completely ban dissection in undergraduate and postgraduate study of zoology and to introduce computer based pedagogical practices instead. The historic ban on dissection would pave way for saving up to 19 million species every year the country and preventing the wastage of enormous money spent by the educational institution for the purchase of animals. With this we can even support our religion (which ban animal cruelty due to bad Karmas), or ethics (because our moral duty to respect life), new technology (because science and technology are advancing day by day) and open boundaries in choosing biology as option. So summing up, with choosing PowerPoint presentation we are supporting our religion, ethics and new technology. The investigators justify her experimental research with keeping in mind that it will certain by help students, teacher, instruction and also our full ecosystem because banning on dissection lead to safe survival of many species of animals. This study is on the line of student friendly and on basis of modern technology. In the present study investigator made power-point presentation on human physiology.

This is just a starting so that if there results come significant we can ban dissections in other courses.

Cross (2004) conducting a study on a statistical comparison of real and virtual frog dissections/ No significant difference was observed in the virtual laboratory practical test scores.

Velle (2004) performed a study—reality check in a statistical comparison of real and virtual frog dissections, Study was conducted on ninth grade students. Students who had completed the virtual dissection performed better on both tests.

(2005) conducted a study on validation of a bovine rectal palpation simulator for training veterinary students. Results showing significantly better performance for the simulator group.

Knight, et al. (2008) in Animal Consultants International The humane alternative to harmful animal are in biomedical education have been designed by professional educators and scientists and their educational efficacy is clearly demonstrated by the fact that nearly every comparative study has shown that students using humane alternatives perform at least as well as those trained via harmful animal use. At least 33 papers sourced from the biomedical and educational literature, covering all educational levels and disciplines, describe studies that have compared the ability of humane alternatives to impart knowledge or clinical or surgical skills, 39.4% demonstrated that alternative students achieved superior learning outcomes or achieved equivalent results more quickly, allowing time for additional learning 51.50% demonstrated equivalent educational efficacy and only 9.1% demonstrated inferior educational efficacy of humane alternatives.

OBJECTIVES OF THE STUDY

1. To study the academic achievement of biology students with traditional mode.
2. To study the effect of power point presentation on the academic achievement of senior secondary medical students.
3. To compare the academic achievement of both the groups (vivisection group and experimental group)
4. To determine quality together the results of study supports ethical question regarding the use of animals in instructional mode.

HYPOTHESIS OF THE STUDY

There is no significant difference in student's achievement in zoology while teaching through vivisection presentation and PowerPoint presentation.

METHODOLOGY

Experimental Research Methodology was used in this study. The equivalent group method was used in this research study. The control and experimental group of 60 medical students of pharmacy were formed. A pretest is organized to check the effectiveness of teaching method. After teaching with both methods posttest is also organized to check efficiency of traditional (vivisection) model and power-point presentation. To measure the achievement level of the student, investigator prepared questionnaire on two human physiology system namely digestive system and circulatory system.

ANALYSIS AND INTERPRETATION

Table No. 1: Difference between means of pretest scores and posttest scores of control group

Scores	No. of Students	Mean	Standard deviation	t-ratio	Level of Significance	
					0.01	0.05
Pretest Scores	30	63.1	13.80	0.059	Not Significant	Not Significant
Post test score	30	62.9	11.97			

Not significant at both level
 Degree of freedom $df (N - 2) = 28$
 Table value at 0.05 = 2.05
 Table value at 0.01 = 2.76

Table No. 2: Difference between means of pretest scores and post test scores of experimental group

Scores	No. of Students	Mean	Standard deviation	t-ratio	Level of Significance	
					0.01	0.05
Pretest Scores	30	58.3	8.99	2.79*	Significant	Not Significant
Post test score	30	65.1	8.55			

*Significant at one level
 Degree of freedom $df (N - 2) = 28$
 Table value at 0.05 = 2.05
 Table value at 0.01 = 2.76

FINDINGS

- (i) In the case of control group, mean of pretest score is higher than that of post test score value. However, value was not significant i.e. vivisection mode of presentation did not contribute significantly to achievement of pharmacy students.
- (ii) In the case of experimental group. Mean of post test score is higher than that of pretest score value. However, value was significant only at one level i.e. PowerPoint presentation show significant difference in the achievement of experimental group.
- (iii) The result indicates that PowerPoint presentation improves the understanding and enhances the achievement of student significantly.

DISCUSSION OF THE RESULT

The findings of the study suggest the Power Point presentation may be used to enhance the academic achievement of student. However they differ only at 0.01 levels but it can save millions of animals and maintain ecological balance of earth. Medical field depend upon the anatomy using a computer equipped with a commercially available data-acquisition system it is possible to illustrate the basic underlying physical and chemical principles of various systems of student we support vivisection because it help in discovery of medicine but there are number of alternative available like experiments performed in test tube, cell and tissue culture, CAT, PET and MRI Scans, quantitative structure activity relationship analysis in drug design and chemical toxicity usages are some of the modern approaches to research available to scientists today.

It can be observed from Table 1 and Table 2 that t-value for difference in mean score of the two treatment groups, namely vivisection and power point presentation was found to be significant at 0.01 levels. However no significant difference between means of pretest and post test scores of control group. The examination of the corresponding means as shown in Table 1 and Table 2 suggested that power point presentation yielded results superior to vivisection presentation in high secondary medical students.

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