**Effectiveness of Computer Assisted Learning of Animal**

**Experiments In Physiology**

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**Introduction:** The use of animal experiments for better understanding of human physiology is a centuries-old practice as educators have long recognized the necessity of illustrating abstractions & concepts. Demonstrations of amphibian nerve-muscle & heart experiments are essential as per I MBBS practical syllabus. But due to recent guidelines of animal ethical bodies, there is a need to introduce alternatives to animal experimentation in medical education. The purpose of our study was to investigate the effectiveness of one such alternative i.e. simulation software; with conventional teaching of animal experiments in learning of physiology concepts by first year M.B.B.S. students. Effectiveness was defined as cognitive outcomes as measured by a written test.

**Material & Method:** After obtaining approval of institutional ethical committee; Study was conducted in 150 students studying in I semester of I M.B.B.S. course at Bharati Vidyapeeth Deemed University medical college, Pune between August 2010 & October 2010. Students were divided equally in study group & control group consisting of 75 students each. Students of both the groups were matched on the basis on their CET (medical entrance test) scores.

As per their syllabus, these students have demonstrations of eight experiments involving isolated nerve-muscle preparation of frog.

Study group learnt all these experiments by way of simulation software. A CD-ROM titled ‘computer based amphibian experiments’ made by Jaypee Brothers Medical Publishers, New Delhi was used. It is developed by Nageshwari KS, Devi MS & Sharma R. & is commercially available1. Control group learnt these experiments on frogs in the conventional way. After the demonstrations, both groups were assessed by administering a test. Test items were constructed as per the pattern of university examination.

Test scores were subjected to Z test so as to infer about effectiveness of computer assisted teaching in these students.

On completion of the project, batches were interchanged & conventional & computer assisted teaching was conducted so that all the students were exposed to both teaching methods.

**Observations & Results:** The table below shows the test scores in study & control groups. It can be seen that there is no statistically significant difference in the test scores of both groups. We can therefore conclude that computer assisted learning was as effective as learning by conventional method in our students.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Study group | Control group | z value | p value |
| Test score | 22.39 ± 8.49 | 21.96 ± 8.72 | 0.29 | >0.05 |

**Discussion and conclusions:** The need for alternatives to animal experiments is increasingly being felt; many alternatives are being tried by various researchers2,3,4 & are found to be effective. Alternatives have the advantages of requiring less resources of space, equipment & faculty time required as compared to traditional animal experiments. They offer the opportunity of revisions which is not possible with real animals due to availability of animals & cost involved in experimentation. At the same time it requires availability of computers, LCD projectors & simulation software. From the findings of our study, it can be said that computer assisted learning of animal experiments in Physiology is an effective alternative to conventional animal experiments.

**References:**

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