

7. Improving Alternative Technology of Animal Dissection in Zoology Laboratory

^{1,*} Nilkamal Chauhan

¹ Central University of Gujarat, Gandhinagar, Gujarat.

*cnilkamal9@gmail.com

In science education laboratory work and practical knowledge is a main part of study. Without doing practical work there is no any meaning to study science. Zoology is a basic subject of biological science and zoology students are gain knowledge by studying animal science through animal dissection. Animal dissection has been removed from the curriculum in developed countries, and replaced by virtual laboratories. But from last some years Indian government has ban animal dissection in zoology subject because of more waste of animal specimens. Because of the ban of animal dissection in undergraduate and postgraduate level colleges, there are many questions on the future of zoology students. After the ban of animal dissection in place of dissect animals' students have too study that part of syllabus by computer technology and demo lectures.

In post- independent India, there were a few colleges and universities offering courses in life sciences and zoology, and the number of enrolled students was less too. Because of this, very few animals were used for dissections. But with the introduction and acceptance of the title "Education for All", the number of students enrolled in these courses began to increase considerably

with time. For instance, presently about 400,000 students are enrolled in undergraduate programs in Tamil Nadu, of which about 250,000 are students of biology/ zoology and botany. They dissect animals, and assuming that with each student dissects at least 5 frogs, about 1,250,000 frogs are killed in Tamil Nadu each year. The Bharathidasan University in Tiruchirappalli, Tamil Nadu has been the innovator, introducing the so-called “Bharathidasan University Model”. “Animal dissection should be carried out only if the animal is not protected under Wildlife (protection) Act 1972”, emphasises the Bharathidasan University’s course model. With support from the pioneering teachers, I-CARE drafted a lengthy memorandum that was put forth the Minister for Human Resource Development of Government of India by Mrs. Maneka Gandhi of PfA. Understanding the profoundness of the situation, the memorandum was then referred to the University Grants Commission (UGC) by the Minister, with instructions to take the necessary steps. In his letter addressed to all universities of India dated October 31, 2006, the Secretary of UGC referred the said memorandum to him and called for suggestions (Akbarsha 2007).

With respect to practical’s, the new syllabus is lengthier than the old syllabus; but most of it involves writing from charts and demonstrations of organisms or methods. The main problem that the committee is facing following the ban on dissections is regarding the topics which should be included in practical syllabus and their contents, so that they prove to be useful to the

students in the future. There is a difference in the syllabus followed by the college affiliated to Gujarat University and the autonomous college- In college 2, the practical syllabus is different as compared to college one. Some new topics are added, some other topics have been interchanged; and the method of demonstrating performing practical's is different in both the colleges. In semester 1 and 2, both the colleges study different specimens in type study. There are slight changes in the syllabus of semester 3; whereas in semester 4 paper A, the topics are completely different. In semester 5, the topics in the papers have been interchanged; and the syllabus of second practical paper in semester 6 is different from the University syllabus. Besides introducing changes in the syllabus, college 2 has also added some new topics too, which are not very difficult and will be useful to students while pursuing master's degree.

There is a vast difference in the current and previous syllabus. The earlier syllabus was closer to real zoology, whereas because of the current syllabus, students are far from actual zoology. Earlier, the students actually used to perform the practical's in the laboratory, and were supposed to complete writing in their journals from home. Nowadays, students have to just keep writing even in the laboratory. Ever since the dissections were banned, both the students and the teachers have lost interest in practical work. The department lacks teaching staff, but the government is not recruiting the required number of people because of which students have to suffer.

Zoology (main) is being side-lined by the addition of

other branches like cytology and biochemistry. The number of students seeking admission in B.Sc. after completing 12th standard has increased, as Microbiology, Biochemistry, Biotechnology, and the like are applied subjects whereas botany and zoology are subjects related with teaching field. The current syllabus is lengthy and there should be changes in the vacation period, which will make the semester system better.

There are a number of animal- free alternatives that can be used in life sciences education today, all of them having their own set of positives and negatives. Models and charts can serve the purpose well, as students seem to have no difficulty in understanding the anatomy of mitochondria, Golgi apparatus and the gene, when explained through models and charts. Digital video, multimedia, computer- assisted learning, simulations or self- testing models are the computer- mediated alternatives. In this era, information technology encompasses educational technology, there are countless free and commercial websites and CD-ROMS that teach animal anatomy and animal dissection. Not only do these alternatives enable the students to study animal anatomy without harming the animals, but they also make the learning process thrilling, less expensive, and encourage the students to operate computers and visit websites (Akbarsha et al. 2013).

The ban on dissection of cockroach, housefly, mosquito, fish, and insects is completely unnecessary. For instance, in a batch of 30 students, only 6 specimens will be used if dissections are performed in groups. This approach will provide basic

knowledge of animal morphology and anatomy. Killing animals in front of or for students, and making them dissect animals cannot make them conscious about biodiversity conservation. Thus, it is important that if animals are studied, they should be studied by seeing them alive, in their natural environment.

- More numbers of field studies on fauna and fauna in syllabus.
- Wild life study tour.
- Report writing.
- Museum study and tour.

References

1. Akbarsha, Mohammad Abdulkader. 2007. "Movement to curtail animal dissections in zoology curriculum: review of the Indian experience." *Altex* 24(3): 163-166.
2. Akbarsha, Mohammad A., Mohammed Zeeshan, and K. J. Meenekumari. 2013. "Alternatives to animals in education, research and risk assessment: An overview with special reference to Indian context." *Altex Proc* 2: 5-19.