Alternatives to recompense to ban on animal dissections –an overview

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Abstract

Animal dissection is disjointing of the body of an animal to study its anatomical structure. This is not suitable ideal method for children to examine the internal organs of animals. This act encourages students to abuse and disrespect animals. In the era of technology, in which one can easily study the different parts of animals through projectors and computers. There is no need to cut them up for it. This also creates an emotional disturbance among students who are forced to dissect animals willingly or unwillingly. In a recent teen survey, 86 percent of the students polled said that schools and colleges should give students the option to use alternatives to dissection. CDs/DVDs, and models are widely available; most are cost-effective or available at no cost. All provide comparable learning experiences to traditional classroom specimen dissections. Alternatives save not only animals' lives, but also impact the educational institutional budgets by dramatically reducing dissection lab costs as students can reuse alternative programs, year after year. Students can develop their understanding of anatomy, their manual and cognitive skills, and their confidence using physical and virtual models, videos, books, and activity sets. Instead, they use modern technology. The various means of alternatives to compensate ban on animal dissections and the benefits of using alternatives are discussed in the paper.

Keywords: Aimals, dissection, ethical, compensate, effective, models, audiovisual aids.

Introduction

Many teaching faculties, too, are opposed to animal dissection in the class room, citing more concerns about health and safety, classroom management, learning and retention, cost and the inability to justify killing animals for this purpose.[1] Fortunately, educators can help prevent this suffering and enhance students learning experience and compassion for animas by using any of the modern, life-affirming, educationally effective non- animal teaching methods. Research suggests that students who learn from anatomical models, computerized dissection software programs, charts, interactive CDs and DVDs, audiovisual aids, or other alternatives perform as well or better on tested subject matter compared to students who used animal specimens[4]. In addition to superior learning, educational alternatives allow students to learn at their own pace, to make up missed classes or content, and ultimately to make learning more fun, interactive, and humane. Since dissection destroys much of the integrity of the specimen's skeletal structure and spatial relationships among tissue and organs, computerized dissection simulates better science by allowing the student to reexamine, pause, reverse, repeat, or zoom in or out on specific organs without compromising the specimen. More importantly, once a student finishes with the computerized study module, the computer program will put the animal back together ready for the next student. In April 2008, the National Science Teachers Association (NSTA) revised its dissection position to acknowledge the educational value of non-animal learning methods as replacements for animal dissections, and to establish the principle of dissection choice for all classrooms[4]. The NSTA's acknowledgement of the educational efficacy of these alternatives is further evidence of their viability as learning tools and the future of science education. The utmost care is taken to highlight the various means of alternatives to compensate ban on animal dissections in the paper.

Objectives

- Bring the awareness about the significance of adopting alternative methods for dissection.
- Educate the students for alternative ways for animal dissection and thereby sensitize them towards the conservation of the animals.
- Equip the teaching community and the students to monitor animal dissection and avoiding cruelty wherever it is possible.
- To give a wide publicity about the establishment of animal ethics committees at institutions.

Discussion

. Several states have student choice laws and other states are considering similar legislation. Many countries have adapted non-animal alternatives to dissection because of high demand from individuals who want to enhance their educational experience without harming animals. Non-animal alternatives to dissection not only benefit animals, but they are also much more cost effective, environmentally safe, and educationally effective than dissecting a once-living animal. More and more educators and students are discovering a kinder way to teach and study science by implementing non-animal alternatives in today's classrooms.

Students from all educational levels may be faced with the ethical dilemma of whether or not to participate in the dissection of animals. A growing number of students and educators are choosing to cut out traditional dissection methods in favor of non-animal alternatives. Many students say no to dissection because they are aware that animals are often killed specifically for dissection purposes, and the animals used often experience tremendous suffering before they are killed[6]. Frogs, earthworms, crayfish, fetal pigs, and cats can be obtained from the wild, slaughterhouses, shelters, or are purposely bred in facilities that profit from their sale. Also, many companion animals can be the target of animal dealers who make money from stealing and selling them for use in dissection. Whatever reasons we may have for choosing not to dissect, there are steps we can take to cut out cruelty in the classroom.

Alternatives to Dissection

There are hundreds of alternatives for educators and students to use in place of dissection specimens including CD-ROMs, models, videos, charts, and much more at every educational level. With interactive and comprehensive alternatives, students gain a far greater understanding and respect for animals than with traditional dissection. The Science Bank (***www.TheScienceBank.org***) is Animalearn's free lending program of alternatives to dissection and other harmful animal usage[4.] The Science Bank enables educators and students to try out the most cutting-edge products available.

Many of the ways that students use animals in high schools especially in advanced biology courses and repeat in collegiate level courses, from the dissection of cats and dogs in anatomy to

the pithing of frogs in physiology and use of rats in psychology. While there are currently no state laws that require private or state colleges and universities to offer animal lab alternative choices for students, there are a number of schools that have adopted their own student choice policies or at least allow students to use dissection alternatives. Available alternatives include computer software programs that simulate animal dissection or human anatomy and physiology, models, and human or animal cadavers donated through ethical sources like willed body donation programs or educational memorial programs.

One example of a popular, interactive computer software program is V-Frog™, a virtual reality-based frog dissection program. V-Frog™ is one of the latest alternatives to use in place of real frogs and is available to borrow for free through our ESEC Loan Library program. Designed for high school to graduate level biology courses, a PC mouse allows students to pick up a scalpel, cut open skin, explore internal organs, watch a beating heart, observe digestion, conduct an endoscopy, look at underlying muscles, bones, and organs, and observe nerve and muscle response, as well as other capabilities not possible with a physical specimen[2,3,4]. V-Frog offers real-time interaction, unlimited manipulation, and 3-D navigation, making every dissection reflect a student's individual work. The award-winning Digital Frog 2, an interactive CD-ROM, allows students to perform an in-depth "dissection" of a computer-generated frog with a digital scalpel. The program also includes animations, quizzes, videos, and information about frog behavior, ecology, and environmental issues. The Dry Lab Plus Fetal Pig CD-ROM is interactive software that allows students to investigate the complex internal and external anatomy of the fetal pig[4]. Difficult dissections like the nervous system are available in full view, along with other detailed diagrams, slides, and over 100 photos of specimens at 8 different stages of gestation.

The Benefits of Using Alternatives

While objecting to dissection may be an ethical decision, many educators and administrators need additional reasons to justify the use of non-animal alternatives. When trying to encourage the schools, colleges or university to consider these options, be sure to also address the issue of cost savings and educational benefits, as well as the negative impact that dissection can have on the environment. Nearly every peer-reviewed comparative study published has concluded that the educational outcomes of students who are taught basic and advanced biological skills and concepts using non-animal methods are equivalent or superior to those of their peers who use animal-based laboratories[2, 3].

Educators and administrators often make curriculum decisions based on the school budget, and many may be interested to learn that using alternatives to animal dissection could save their school thousands of rupees over a three-year period. Instead of purchasing animals each year for use in the classroom, alternatives only need to be purchased once and can be re-used every year, which saves the school from needless expenditures.

In at least 30 research studies published in scientific journals that compared learning levels of students using alternatives to dissection and students dissecting animals, dissection alternatives

were found to be more educationally effective. This is important information for educators, administrators, and school board members because improvements in education are strong reasons to adopt new policies. The authors of one systematic review enlightened his opinion that students taught using non-animal methods demonstrated superior understanding complex biological process, increased learning efficiency, and increased examination results[5].

Conclusion

Classes involving animal use may have negative psychological effects on students. Furthermore, such classes may not contribute to the proper attitude-building of students, i.e. that animals deserve respect and have an intrinsic value. I have the strong opinion that instead of providing the animal for dissecting to all the learners of biology only one animal may be used for demo. As with virtual dissection, interactive computer software allows students to investigate the respiratory rate, capillary flow and dissolved oxygen levels, conductivity of neurons, cardiovascular dynamics, glomerular filtration, acid/ base balance, serological testing and more. Non-animal methods are not only more humane, but also more effective, more inclusive, safer and more economical.

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