From Guinea-Pig to Computer Mouse: Alternative Methods for a Humane Education

Ursula Zinko, Nick Jukes and Corina Gericke (1997). EuroNICHE: Leicester. 229pp. Paperback. Obtainable from the publishers, 11 Beckingham Rd, Leicester, LE2 1HB, UK; or via Dr J Balcombe, HSUS (USA orders), tel 301 258 3046. Price £5.00 (plus £1.50 post & packing in the UK) or US$12.95.

In some countries the use of animals for educational purposes has been substantially reduced in recent years, primarily due to the concerns of students about the unnecessary exploitation of animals in this manner. Also, a greater awareness of human rights, as well as animal rights, has meant that students are able to conscientiously object to being forced to use animals as part of their educational courses, without being jeorpardized with respect to the assessment of their performance in coursework and examinations.

Where the use of animals in education has been reduced, this has been made possible by a realization that it is unnecessary for students to have hands-on experience of dissecting a variety of animals. Even in veterinary and medical training, the emphasis on animals has been minimized to a level consistent with maintaining the necessary quality of education that students receive. It should be remembered that any justification for using animals for educational purposes must be viewed in the light of the fact that education involves illustrating known facts, whereas research comprises the elucidation of new information. Thus, using animals for teaching is intrinsically less justifiable than using them for research purposes.

A further reason why teaching does not have to rely on animals to the extent that it did in the past relates to the fact that a wide diversity of alternative methods now exist to assist teachers in the classroom and the laboratory. These range from computer-aided learning packages, self-assessment practicals, books, films and videos, to interactive computer programs that simulate a variety of biological processes, and which interrelate structure and function in a plethora of biological systems. Such alternative methods have the advantage that they can be re-used indefinitely, with the possibility of varying experimental parameters and exploring the consequences of such changes by obtaining results almost instantaneously, without the time delays and logistical problems that can often arise from the use of animal material. Some teaching aids can also cater for intrinsic biological variability, and can instruct the user in experimental design and statistical analysis. In addition, alternative teaching methods, in comparison with traditional animal methods, can offer the student more insight into mechanisms underlying the biological phenomena they are studying.

A problem with the increasing interest in using non-animal approaches to teaching biology and medicine is the need to find innovative alternative teaching methods for particular areas of biology and medicine when you need them. *From Guinea-Pig to Computer Mouse* provides just the sort of resource to fulfil this need, and should, therefore, be an essential text on the bookshelves of all teachers in medical schools and departments of biological sciences. In short, this book is a most useful compendium of alternative methods to using animals for teaching students in biological sciences and medicine.

The text comprises five chapters, together with a very useful directory of distributors of the methods, and an index of alternatives. Chapter 1 provides an introduction to alternatives and explains the need to seek humane methods of education. Chapter 2 introduces EuroNICHE, its aims and objectives, and also lists other EuroNICHE literature. There is also information on the EuroNICHE Advisory Service, and details for teachers wishing to avail

themselves of EuroNICHE's loan system. This is particularly useful for those wishing to assess an alternative method for suitability and ease of use before purchase.

Chapter 3 deals with alternatives for 11 of the most common animal experiments in 7 areas of biology. These have been selected from the experiences of students, particularly those undertaking compulsory courses in Germany and Sweden. The bulk of the text, however, is presented in Chapter 4 (entitled, 'Alternatives File'), which is basically a listing of more than 400 available teaching alternatives, arranged alphabetically into 21 study areas. The listing starts with anaesthesia and ends with veterinary clinical cases, and a miscellaneous category. Each alternative method is described in terms of its design and objectives, as well as the teaching level to which it is applicable. I have not had the opportunity to try out very many of the methods myself, although I am familiar with some of the computer programs, and have found these extremely instructive and useful.

Other information includes details of source, format (in the case of computer programs), and price (where available). The final chapter provides a very useful information resource detailing internet sites, databases, publications and other relevant organizations for consultation and help.

This text, which was produced primarily as a reference aid for universities, contains several typographical errors, which, although not detracting from its utility, are annoying. I would hope that these will be corrected in future editions of the book[1], which will be required soon to list the latest teaching methods developed since its publication in 1997. The authors state in the preface that their publication of this list of alternatives was intended to stimulate interest in the use of alternative teaching methods. I am sure that the availability of the book will help them to achieve their aim.

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[1] A new edition of *From Guinea-Pig to Computer Mouse* is currently in preparation and due to be published in late 1999.