Replacing Animal Use in Physiology and Pharmacology Teaching in Selected Universities in Eastern Europe — Charting a Way Forward

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Summary — The aims of this study were to explore the use of animals in teaching and the implementation of innovative technology-based teaching practices across a small sample of universities in Eastern Europe. The research methods used were a questionnaire circulated four weeks before a workshop took place (in October 2009, in Belgrade, Serbia), as well as focused, face-to-face group discussions, led by one of the authors during the workshop. Twenty-two faculty (physiologists and pharmacologists), from 13 Eastern European countries, attended the meeting. Fourteen of the eighteen schools represented at the workshop were making use of animals, in some instances in quite large numbers, for their teaching. For example, a single department at a Romanian university used over 250 animals per annum, and at least 1130 animals were used, per annum, across all of the institutions. The species used in largest numbers were the rat (34%), frog/toad (29%), mouse (22%), rabbit (10%), guinea-pig (4%) and dog (1%). None of the universities sampled had implemented institution-wide virtual learning environments (VLEs), although there were isolated instances of local use of VLEs. There was relatively little current use of technology-based teaching and learning resources, but there was considerable enthusiasm to modernise teaching and to introduce innovative learning and teaching methods. The major perceived barrier to the introduction of replacement alternatives was the lack of versions in local languages. There was a consensus view that developing local language exemplars and evaluating their usefulness was likely to have the greatest impact on animal use, at least in the short-term.

Key words: animal experiments, animal use alternatives, computer-assisted learning, Eastern Europe, pharmacology, physiology, teaching, universities.

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Introduction

It is difficult to provide an accurate figure for the number of animals used for educational purposes across the European Union, but compared to the number used for research, it is small (at < 1%; 1–3). In this context, most of the animals used are small rodents, and their use takes place in university laboratory practical classes in pharmacology and physiology (2). Many of the animals are humanely killed prior to the removal of specific tissues, which are then used as in vitro preparations to demonstrate the effects of various pharmacological agents or physiological procedures. It is worth noting that, in the UK, the statistics provided by the Home Office do not include animals killed prior to experimentation.

The reported animal use for education and training purposes across Western Europe is declining, even against a background of a large increase in student numbers in disciplines in which animals are traditionally used in teaching (1, 2). There are probably several reasons for this decline:

— The costs of running these classes are high. They require specialised facilities and technical support, expensive consumables (e.g. drugs), and often the same class will need to be repeated to address large class sizes (4). These classes are also generally very demanding on academic staff time (5).
— Increasingly, students object to what they perceive as an unnecessary use of animals, and there is now widespread availability of high-quality, low-cost alternatives, including computer simulations and virtual animal laboratories.

Information about animal use in teaching in universities across Eastern Europe is not as available or reliable as it is for universities in the West (6, 7), although, anecdotally, animal use in teaching is much higher in universities in Eastern Europe (8–10). A previous workshop involving faculty from