



Myths and realities of animal use and alternatives in
education and training:
From skills acquisition to sustainable development

Nick Jukes, InterNICHE



Animal experimentation



Animal experimentation and other harmful animal use has been part of conventional practice in the following fields:

- > Education & training**
- > Research**
- > Testing**

Structure of education



Education & training at secondary, higher and professional level

> Higher education: Veterinary, medical and biology faculties

**> Disciplines of anatomy, pathology, physiology,
pharmacology, clinical skills & surgery**

> Practical classes and training events

Types of harmful animal use



In education & training, this animal use has often comprised:

- > Dissection of purpose-killed animals**
- > Animal experimentation**
- > Other instrumental animal use**

Harm: Further animal welfare and ecological aspects



The issues are not only harm and killing within the practical class:

> Wild capture, breeding, transportation, caging & keeping, experimentation and killing, preservation, disposal

Alternatives and education & training



Education & training of students and trainees *through the use of alternatives* at secondary, higher and professional level *to gain knowledge, skills and attitudes*

- **Pedagogical and technical issue**

InterNICHE focus



Supporting humane innovations that can enhance the acquisition of knowledge, skills and attitudes

Achieving full replacement of harmful animal use and the implementation of alternatives

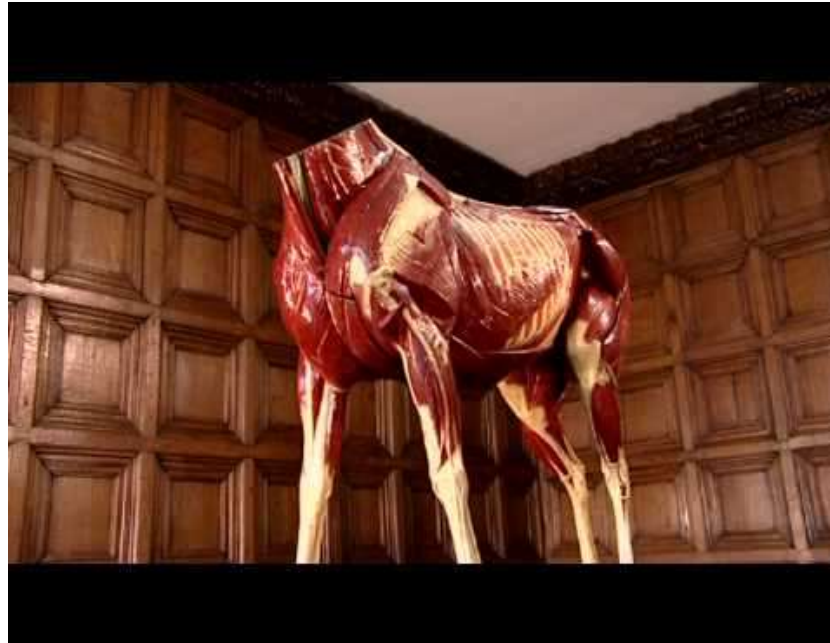
Global changes



Teachers, students and campaigners are facilitating change:

- > Growing clarity on teaching objectives**
- > Impact of new technologies**
- > Ethics and animal welfare awareness**

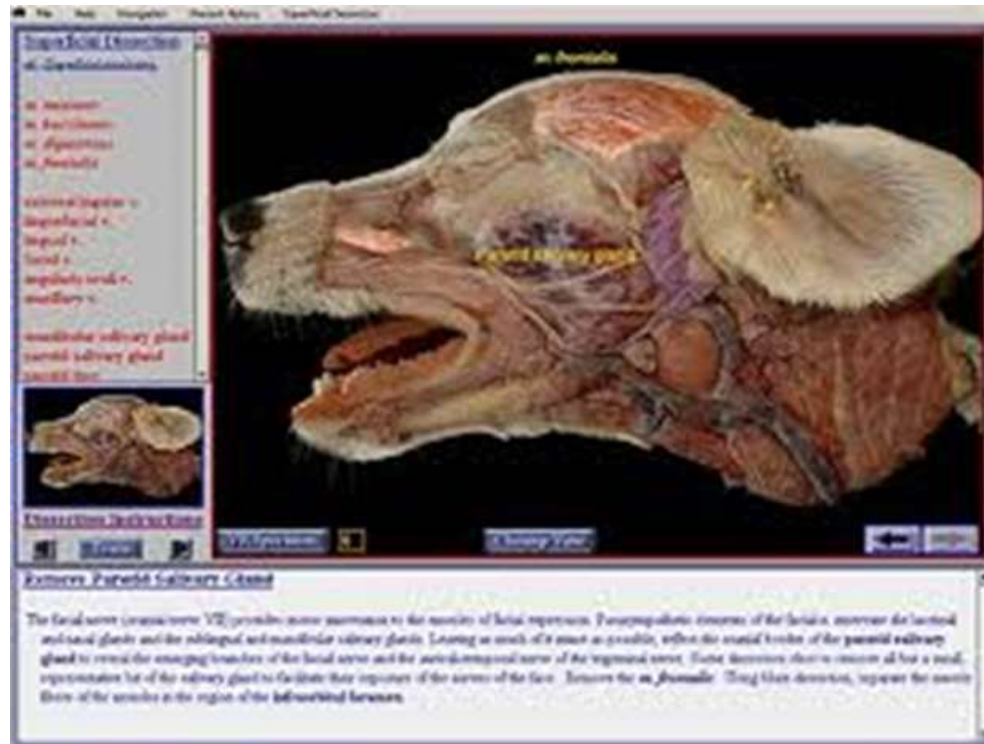
A review of humane innovations



A review of humane innovations



A review of humane innovations



A review of humane innovations



A review of humane innovations



DIERDONORCODICIL



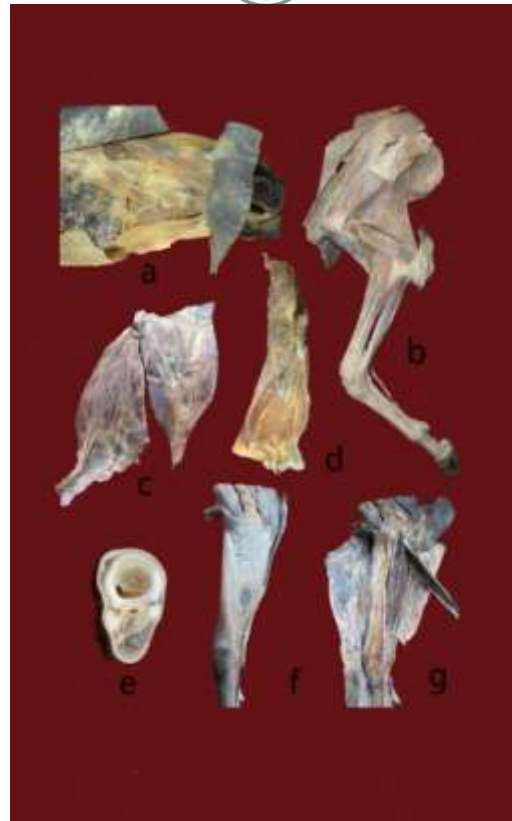
PROEFDIERVRIJ

Charmant Utrecht

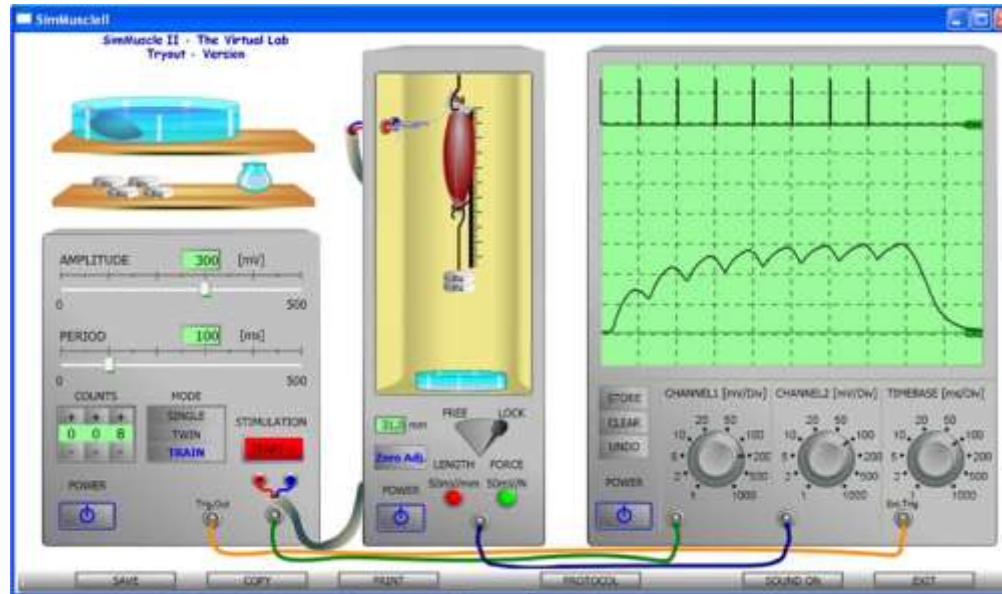


InterNICHE

A review of humane innovations



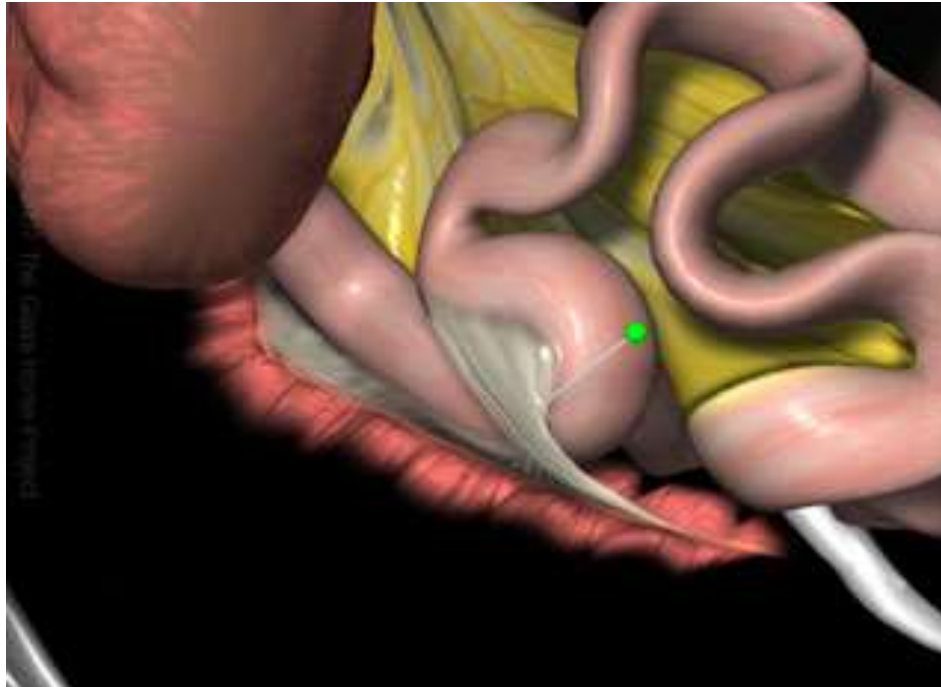
A review of humane innovations



A review of humane innovations



A review of humane innovations



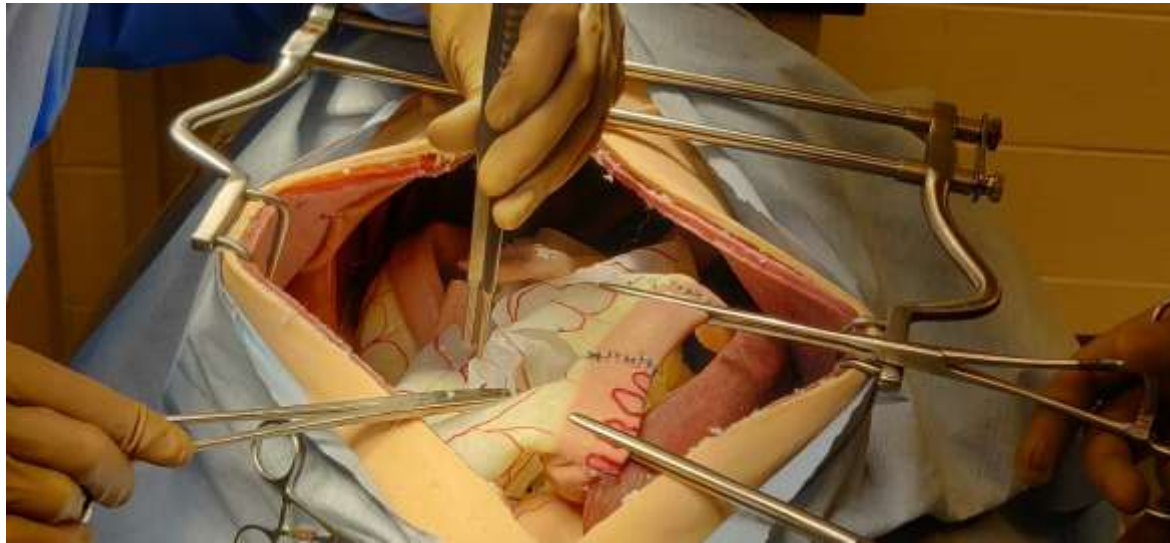
A review of humane innovations



A review of humane innovations



A review of humane innovations



A review of humane innovations



A review of humane innovations



The real thing



Myth: **Animal experimentation is ‘the real thing’.
Alternatives are not.**

Clarification: **This confuses the method with the objective
Animal experimentation is just one method
The ‘real thing’ is effective gaining of knowledge,
skills and attitudes**



Hands-on experience



Myth: Using alternatives means students and trainees won't have hands-on experience with animals

Clarification: Replacement can also involve animals:
Ethically sourced cadavers & clinical learning opportunities
Access as a clinician, and during professional development

Availability



Myth: **There are no suitable alternatives**

Clarification: **There are countless humane and innovative tools and approaches, incl for every practical**
Their implementation illustrates their feasibility
Published studies on their development, assessment and successful implementation demonstrate effectiveness and superiority

InterNICHE: Alternatives Database



Alternatives Database

[View](#) [Edit](#) [Outline](#) [Revisions](#) [Track](#) [Translate](#)



English

- [About InterNICHE](#)
- [Humane Education and Alternatives](#)
- [Alternatives Database](#)
- [Studies Database](#)
- [Alternative Loan System](#)
- [Conscientious Objection](#)
- [How You Can Help](#)
- [Our Sponsors](#)
- [Home](#)

PhysioEx 9.0: Laboratory Simulations in Physiology

Producer: [Benjamin Cummings](#)

PhysioEx™ 9.0: Laboratory Simulations in Physiology is an easy-to-use laboratory simulation software and lab manual that consists of 12 exercises containing 66 physiology lab activities that can be used to supplement or substitute wet labs. PhysioEx allows students to repeat labs as often as they like, perform experiments without harming live animals, and conduct experiments that are difficult to perform in a wet lab environment because of time, cost, or safety concerns.

The PhysioEx 9.0 software features a brand new online format with step-by-step instructions and assessment so that everything students need to do and complete their lab is located in one convenient place. New Pre-lab and Post-lab Quizzes for each activity and Stop & Think and Predict Questions within the steps of each experiment help students make the connection between the activities and the physiological concepts they demonstrate. Student answers to all of these questions and the results from the experiments can be saved in a PDF Lab Report. The PhysioEx 9.0 CD-ROM comes packaged with every new copy of the PhysioEx 9.0 lab manual. Each new copy of the PhysioEx 9.0 lab manual also includes access to the online version of PhysioEx 9.0.

Note: For PhysioEx 9.0, there is one version only of PhysioEx. We have combined the previous A&P and Physiology versions of PhysioEx into one product.

Details:

Medium: CD-ROM (2009) and textbook

System requirements: CD-ROM - Windows XP or later, Macintosh OS 7.1 or later, with minimum 32 MB RAM; 800 x 600 screen resolution, millions of colour, Netscape 4.6 or Internet Explorer 6.0 and Flash 6 plug-in also required.

Price: US\$36.60



[Go back to list](#)

Nick

- [My account](#)
- [Create content](#)
- [Recent posts](#)
- [Administer](#)
- [Development Forum](#)
- [Manage Users](#)
- [File browser](#)
- [Recent log entries](#)
- [Translate interface](#)
- [Translate strings](#)
- [Translator assignments](#)
- [Moderated content](#)
- [Case Tracker](#)
- [Log out](#)



InterNICHE

InterNICHE: Studies Database



InterNICHE

Studies Database

View Edit Outline Track



English

- [About InterNICHE](#)
- [Humane Education and Alternatives](#)
- [Alternatives Database](#)
- [Studies Database](#)
- [Alternative Loan System](#)
- [Conscientious Objection](#)
- [How You Can Help](#)
- [Our Sponsors](#)
- [Home](#)

Lewis TM, Aggarwal R, Rajaretnam N, Grantcharov TP, Darzi A. Training in surgical oncology - The role of VR simulation. Surg Oncol. 2011 Sep;20(3):134-9. Epub 2011 May 24

PMID: [21605972](#)

Abstract

There have been dramatic changes in surgical training over the past two decades which have resulted in a number of concerns for the development of future surgeons. Changes in the structure of cancer services, working hour restrictions and a commitment to patient safety has led to a reduction in training opportunities that are available to the surgeon in training. Simulation and in particular virtual reality (VR) simulation has been heralded as an effective adjunct to surgical training. Advances in VR simulation has allowed trainees to practice realistic full length procedures in a safe and controlled environment, where mistakes are permitted and can be used as learning points. There is considerable evidence to demonstrate that the VR simulation can be used to enhance technical skills and improve operating room performance. Future work should focus on the cost effectiveness and predictive validity of VR simulation, which in turn would increase the uptake of simulation and enhance surgical training.

Nick

- [My account](#)
- [Create content](#)
- [Recent posts](#)
- [Administer](#)
- [Development Forum](#)
- [Manage Users](#)
- [File browser](#)
- [Recent log entries](#)
- [Translate Interface](#)
- [Translate strings](#)
- [Translator assignments](#)
- [Moderated content](#)
- [Case Tracker](#)
- [Log out](#)

© InterNICHE 2000 - 2011



InterNICHE

Where are they implemented?



Myth: Alternatives are not in use by my peers

Clarification: Conformity to convention not a required practice

Humane, innovative tools are being used across the world in many of the top universities

Case studies: InterNICHE veterinary film and medical & life science book under production



Animal welfare education



Myth: Education *about* animal welfare, ethics and alternatives is sufficient to solve issues

Clarification: Many such courses are being implemented in veterinary and other fields, and are valuable

But **benefits are likely to be negated by harmful animal use, so they must be taught in parallel with replacement and implementation of alternatives**



Tradition and innovation



Myth: Innovation conflicts with tradition

Clarification: Let go of inhumane or ineffective traditions

There are humane traditions - by country,
discipline or practical class

Humane traditions *complement* innovation



Skilled teachers



Myth: We devalue and will lose our skilled teachers

Clarification: We can critique the practice not the person

Teachers' skills can be applied to new methods,
often transitioning with ease

Allow for *better transfer* of knowledge & skills

Teachers' knowledge and skills are valuable for
the production of new tools



This Is Africa



Myth: **Alternatives are not suitable for Africa**

Clarification: **Commonality across world's academic courses**

There are already African alternatives, and use

They can be low cost, and made in-country

Enhancing acquisition of knowledge, skills and attitudes is a global movement and challenge

Vision and the nature of balance



Myth: It is not reasonable to call for 100% replacement
A balanced, moderate approach should be taken

Clarification: 100% replacement is feasible and already achieved: Vision and leadership is needed
Focus on enhancing teaching objectives
There is no 'balance' to be found between humane and inhumane

Too radical?



Myth: **Calling for 100% replacement is too radical**

Clarification: **‘Radical’ means ‘at the root’ of an issue:
a reflection of clarity of vision and honesty**

A mainstream practice that is inhumane is extreme

**True sustainability needs radical and courageous
insight, vision and action**



Too controversial?



Myth: This is a controversial issue. Let's not discuss it!

Clarification: Discussing educational quality is not controversial
- teaching objectives, best practice, evolution

Meeting challenges, and debate, can be rewarding

Being informed, and clarity, helps facilitate change

Science can also benefit from alternatives



Past, present and future



Myth: The future can come later; why me?

Clarification: *“The future is already here, it’s just not evenly distributed”* – William Gibson

“The best time to plant a tree was 20 years ago; the second best time is now” – Chinese proverb

Acting now defines the present and the future



Replacement alternatives and UN SDGs



Replacement alternatives and UN SDGs



Conclusion



Alternatives are superior to harmful animal use

Diverse range of innovative tools and approaches, alternatives exist for all practical classes

100% replacement of harmful animal use is feasible

Growing momentum and successes, 'alternatives' as the norm

Win-win solution: multiple positive impact: One Health





InterNICHE
www.interniche.org



InterNICHE