Royal Veterinary College Digital Image Collection
Consultant's report to the Learning Resources Management Team 23/03/04

Summary for web site

Images in teaching and learning
Images -- photographs, diagrams, diagnostic images and video, play a vital and significant part of the teaching of veterinary medicine. The advent of digital imaging, digital cameras, computer networks and e-learning has created opportunities for the use of images in new ways. Images can be incorporated into PowerPoint presentations, used in online assessments, form part of student projects and interactive e-learning material. They also form an important part of the creation of re-usable learning material which can be made available on demand.

A digital image collection
The ability to collect, organise and share images in the form of a database makes a greater number and variety of images available in a more or less instant fashion to teachers and learners alike.

Aware that the formation of such collection raises a number of complex issues, the Learning Resource Management Team (LRMT) has tasked the author with a review of current practice and attitudes within the RVC together with a review of relevant key players and collections in other institutions. He has been asked to use the information collected to make a series of recommendations and to suggest a strategic plan for the development of an RVC collection. Performance of this task has resulted in the acquisition of a great deal of useful information from both RVC staff and from those developing or managing collections elsewhere.

Findings
Routine use of digital images within PowerPoint presentations is commonplace. Very large and largely unorganised collections exist in both digital and slide format. Awareness of the copyright status of images sourced from the RVC and elsewhere is patchy.

There is a conflict between the provision of adequate descriptive data for images (metadata) and the time available to busy clinicians -- this is an almost universal problem for the development of image collections elsewhere. Some teachers have ready access to large personal collections whereas others have to source material from the Internet.

Institutions such as the Great Ormond Street Hospital for Children, UCL media resources, the Bristol School of Veterinary Sciences and the Bristol Centre for Medical Illustration are managing or developing major collections. Useful information on copyright policy, image acquisition, metadata description and collection management has been gained over the last few weeks.

This report details these findings and makes a number of specific recommendations. It also lays out suggested strategic approaches which are modest, scalable and contain research elements which will continue to inform RVC policy in this area. In strategic terms, this document also looks in a more general way at recent past experience nationally in HE (learning lessons such as the necessity to involve teaching staff at all planning stages) and also at future possibilities such as the pressure to share resources and learning material at national level.

It goes on to suggest that the development of an RVC digital image collection forms the foundation of an expanding collection of learning resources and suggests the evolution of the E-Media Unit into a Centre for Veterinary Education.

Finally, the author does not believe that this amount of useful information has been made available in one place before. The RVC has the opportunity, not to get it completely right, the issues are too complex for that -- but to get it more right than has been previously possible.

Reading this document
As an ex-academic the author is aware of the impossibility of reading a document of this size before a meeting. It is suggested that members of the team read the Introduction (page 3) dip into the Reviews (perhaps pp 5 and 7), into the issues (try pp 10 and 17) and then read the Strategies section (from page 25).

Introduction

Images in Veterinary Education
Most, if not all veterinary teachers use images (photographs, diagrams, x-rays, films, videos, animations etc) as a vital part of their teaching. Similarly, the experience of most students is that appropriate illustrations are vital to their ability to recognise and interpret conditions, lesions and diagnostic images. They are also vital to the understanding of complex structures and processes such as those within anatomy and physiology. Finally, images support the acquisition and retention of the large amounts of knowledge necessary within veterinary education.

Why have a digital image collection?
The ability to create, copy, store and access images electronically, coupled with the now everyday use of computer networks has changed and expanded the ways in which images can be used in veterinary teaching.

Increasing the breadth and depth of illustrative material available to any one teacher -- Traditionally, senior teachers have large and comprehensive image collections while junior teachers have little or no useful illustrative material. Giving all teachers access to a large collection of images increases their ability to produce quality learning materials. This is especially important when illustrations are needed which link topics in a way which enhances student understanding. For instance, clinicians will have access to pathological images to illustrate the processes behind clinical conditions and pathologists will have access to clinical images which make the link between pathology and clinical manifestation. Similarly, it will be possible to make better visual links between the preclinical sciences and clinical conditions.

Giving teachers control over their own material -- Teachers working in areas where images are vital tend to accumulate large collections of hundreds or even thousands of images. Without a catalogue and search system that is easy to use, many of these images are not readily available even to the teacher who created them.

Just-in-time production of teaching materials -- Staff who have teaching, research and service commitments frequently need to produce learning material, especially PowerPoint presentations for lectures, Continuing Professional Development (CPD) and conference presentations, literally the night before. An easily searchable database will increase the range of good illustrative material that is available at short notice.

Safe copyright status -- The copyright status of images useful for teaching is often not clear. The increasing use of images for CPD means that there is an increasing risk of the public use of images that are in breach of copyright.

The introduction of innovative teaching methods -- The availability of many examples of the same condition will enable students to rapidly view a large number of issue images, increasing their perception of the clinical spectrum of changes they might expect to see. Simple image manipulation techniques enable the enhancement of images so that salient features become more obvious. Browsing of multiple images retrieved from the database could even increase the visual learning skills of students for whom this is not their prime learning strategy.

Underpinning an increasing resource of teaching and assessment materials -- The RVC is proposing the establishment of a digital image collection relevant to veterinary teaching. This will in turn serve to underpin the further development of the electronic learning resources currently being used to enhance the undergraduate education and CPD supplied by the College.

A sensible approach
Although the College already owns a considerable number of digitised images, past experience has shown that it is not particularly useful simply to digitise a large number of images and place them on a database. A number of important issues need to be discussed, policies developed and systems agreed upon. This is not only necessary to optimise the use and further development of such a collection but also to ensure the safety of intellectual property owned by the College and to protect the College from potential breaches of copyright law.

Terms of Reference
The author was asked to interview members of the RVC teaching and support staff to evaluate current practices, discover issues and find out the needs and concerns of the teaching body. He was also asked to interview key players in medical and veterinary education who either had established image collections or were in the course of planning such collections. He was asked to use this information to make recommendations for the development of policies and strategies that could inform plans for the successful development of a digital image collection for the RVC. *Appendix 1 contains the full terms of reference.*

About this document
This document consists of seven sections:
1. Executive summary.
2. Introduction
3. Reviews -- a summary of the findings arising from meetings with:
   a. RVC staff
   b. selected key players from other institutions.
4. Details of issues arising together with specific recommendations and suggestions. These include:
   a. copyright ownership, client permission and licensing for use
   b. cataloguing and metadata description
   c. database design and specification
   d. image acquisition
   e. collection management and quality control
   f. delivery and use of images including security and access
5. Strategic recommendations, future plans and resource implications.
6. Conclusions, acknowledgements and links.
7. Appendices including the terms of reference, a list of recommendations and a specimen "Terms and Conditions" document.

The document is long because the investigation has resulted in the acquisition of a surprising amount of useful information and advice. It has been constructed with the intention of its use as a reference document during the building of a collection as well as a report to this committee. The executive summary encapsulates the major findings.

About the author -- J. Adrian Longstaffe PhD BVetMed MRCVS
Dr Longstaffe graduated from the RVC in 1967 and, after holding internships on both sides of the Atlantic, has had a largely academic career. He gained a PhD in parasite immunology, taught pathology at the RVC for ten years and at Bristol for six. From the mid-1980s he has been involved nationally and internationally in the development and support of e-learning in university education mainly in (but not limited to) medicine and veterinary medicine. During the last 15 years he has been involved in the development of a number of digital image collections and has a degree of experience of this very complex field. He has operated an independent consultancy since 1996 working for a number of academic institutions including the RVC, the University of Sydney and also for the pharmaceutical industry.