

The School of Veterinary Medicine and Science (SVMS)– a holistic visual learning approach



Dr Sarah Freeman at the interactive whiteboard with a group of students

The School of Veterinary Medicine and Science (SVMS) was given support by the VLL for ceiling visualisers, interactive whiteboards, videoconferencing systems and high-spec cameras.

SVMS-funded PhD student Clare Mann talks to Dr Richard Hammond about the challenges in setting up SVMS, and about the role of technologies in supporting this very visual discipline. Dr Sarah Freeman and Dr Jonathan Huxley talk about their experiences of using the technologies with students.



Dr Richard Hammond

Richard is a specialist in the area of veterinary anaesthesia and an academic clinician teaching throughout the course at Nottingham. As well as having experience of clinical general veterinary practice, Richard has spent time working in the commercial operation of a major pharmaceutical company and as an academic educator at a number of other veterinary schools in the UK. Richard was awarded a Prize for outstanding contribution to teaching from the Royal Veterinary College in 2005 and fellowship of the Higher Education Academy for his work in curriculum design and integration.

Veterinary Medicine is an area where visual learning forms a key foundation to learning. Students need to develop many skills including understanding anatomy and structure in the context of the living animal, interpreting different imaging techniques and developing spatial orientation and dexterity skills for surgery. What is the impact on this inherently 'visual' discipline of cutting edge visual technologies? The SVMS experience shows that some technologies blend in easily whilst the real value of others only comes out when the students come to it independently. Some of it will grow in value as its functionality increases, and sometimes, the highest tech solution is not always the best one.

What were the challenges in setting up this new School and what part do visual technologies play in meeting them?

The challenges are probably not those that we had expected. We had thought that technical issues (Will the equipment work? Is it high-spec enough to deal with the amount and quality of data I need?) would have been the main challenge. In reality, the main issue has been about how to embed the visual technologies in the learning process. People sometimes have an assumption that they won't be able to use the technology. It is sometimes a case of "That would be a really good idea but I've never done this before therefore I'm not going to do it". A good example is the fact that although we have a bank of twenty four high-spec video-cameras (including the hi-definition video

camera), people actually prefer to use little video cameras where it is obviously just plug and play. The feeling is that there is nothing which could go wrong, and people are a lot more comfortable with that. Even though the quality may not be as good, it ends up adding a lot more to the learning because it is actually used. So sometimes the highest tech solution is not always the right solution – you need to know your audience and in a sense, meet them where they are at.

Another issue is time. We can capture really good quality video very easily. But getting that to an acceptable format to be delivered as learning, involves getting it from the camera to the editing suite, doing the editing, recording a voiceover etc. So in effect, the technology is not saving time, in fact it's creating more work! That doesn't mean it's not still adding value, but it highlights how much we underestimated the time taken to transform captured data into a useful learning and teaching resource.

Can you give me an example of where you feel it has added value?

For a practical session that I run on local anaesthetics I have a very nice set of 'video bites' - two minute clips produced by Pfizer in the US showing things like how to position a dog for an epidural, followed by a walkthrough of how to do an epidural. We have this running on the laptop next to the cadaver materials and equipment, supported by demonstration staff to show the students how to do it. The videos are available on WebCT, and this means the students can actually watch them beforehand and also

afterwards to revise and reflect on what they have learned.

The students like having these different formats. Some people are video-learners, some people are book-learners. Some people would be happy just looking at the static line drawing in a book. I am a very visual learner, for example, and a very 'do' person. If I am watching somebody on a video doing something, I want to get my hands dirty and give it a go. I think the video input can really motivate the students to want to have a go themselves.

What impact has the use of videoconferencing had on the teaching environment?

An example of where it has been really time-saving and added value has been in the training of our practice associates and staff



The portable videoconferencing kit

School-wide Visual Learning Initiatives

(in private practice who work in partnership with SVMS) to teach the students. This involves them doing a training course for nurse practitioners (how to treat students on rotation, how to assess them, looking at professionalism etc.) We will do the initial training face-to-face, but after that we will use multipoint videoconferencing. Multipoint videoconferencing is a system whereby a central 'hub' links various spokes. The spokes can all see the hub, but not each other. This system will be used to bring all the associates together. We will do it a bit like a game, having

tasks where we've got one site playing against another site in teams.

Working with commercial veterinary practices is challenging because you can't ask them to down tools while you go in and train them on how to do assessments on students. But by using the videoconferencing set-up, we can make it more sociable – have a three hour evening session, with pizza their end. They can all sit round and we do some activities to make sure it's interesting and engaging for them.

We have used videoconferencing in other contexts too. We have a small portable videoconferencing kit – it's the size of a textbook. All you need is a small box, the camera and you plug it into any screen, any monitor. So I've taken this elsewhere and used it. I simply phone IT and say I need to plug in at the School of Education, for example, and they give me a roving ip address. It's really easy. At the moment, however, even within the University, it's still seen as the exception rather than the rule. You don't just see this kit around, but you will do.



You have Interactive Whiteboards (IWBs) in most of your teaching rooms. Are they being used? Do they add value?

There are certainly places where the IWBs do add value. For example, during a recent clinical relevance session with a radiograph, the students had to highlight and label the structures they could see. Without prompting, one of the groups put the radiograph onto the interactive whiteboard and they were drawing onto it using the whiteboard pens, with different colours and tools. They obviously saw enough value in it to adopt that approach themselves.

What impact does the visualiser and big screen have on the learning process?

We realised at an early point in testing that having the highest possible quality colours (specifically the reds) was very important. The quality of image that we can project

really is fantastic. And it's interesting, it adds a lot of value to the teaching but it's also the single thing in the School which adds the Wow! factor when we are demonstrating what kind of things we do in the School. It's amazing. You get vets who have been in practice for twenty years who come to look around and they love the School and they love what we are trying to do. When we take them to the lab and show them how you can show the detail from the front as part of the demonstration their jaws are on the floor! They think it's brilliant. For our students it's the norm. For visitors it's incredible! There is much more value to live demonstration than in watching a video - the immediacy of somebody at the front showing it while the students are getting ready to do it is invaluable.

Do you have any comments on the overall impact of these technologies on the teaching and learning environment in SVMS?

I think one of the most important issues is that you can't force people to use technology, and clearly with all technology there will be early adopters, so in lots of cases, you need to show by example. We have to do more to help people see the value so that they adopt it for themselves. Going back to the clinical relevance session example, the fact that the students went to the whiteboard themselves, rather than being asked to, shows it is good.

I come from a perspective where if I can do something visually then I will do it. I look at the desired learning outcomes of sessions that I need to prepare, and ask whether there are visuals, photographs, videos available which I can use (from Pfizer for example) and if not, is there anything I can prepare myself to support the session? One new lecturer is developing a bank of video-bites on large animals (similar to an existing Pfizer session on small animals) using video capture from a practical so that we can use it year on year. New people coming in can see where we can add value, and this is a really useful motivator to develop it. Having the kit there and the people there is great, but the ideas have to come from them.

Views from the School:

Sarah Freeman is Clinical Associate Professor in the SVMS. She has been using the visualiser to demonstrate anatomy.

A current challenge within Veterinary and Medical education is how to deliver high quality interactive anatomy practicals to large numbers of students. The visualiser has enabled us to demonstrate aspects of anatomy such as neuroanatomy and joint aspiration, which could only be demonstrated previously to individual dissection tables using the actual specimen. The equipment is used extensively. We had our first intake of 100 students in 2006, and currently have both a Year 1 and a Year 2 cohort. Both years have extensive practical teaching – a minimum of 6 hours per week, much of which is based around anatomical dissections. The



Dr Sarah Freeman

Sarah Freeman joined the School of Veterinary Medicine and Science, University of Nottingham in 2005. She is an Associate Professor in Veterinary Surgery at the School of Veterinary Medicine and Science. She is a European Specialist in Large Animal Surgery, and also holds further qualifications in Equine Soft Tissue Surgery, Veterinary Anaesthesia and Radiology. She is a Fellow of the Higher Education Academy, and was awarded the Lord Dearing Award for Teaching and Learning in 2007 for her contribution to teaching and curriculum development. She is on the examination and accreditation committees for the European School of Veterinary Postgraduate Studies.