Introduction

Sport and exercise scientists, coaches, physiotherapists etc. often video clients to obtain a record of their movements. Such videos are used as part of the process of analysing technique, the aim of which may be to improve performance or assist in the diagnosis of injury. Whilst video technology has advanced in recent years, the skills required to be able to shoot a video, such as choosing an appropriate shutter speed and deciding on a suitable field of view, have changed little and are unlikely to do so in the near future. In the Department of Exercise and Sport Science at MMU Cheshire, as in other universities, the knowledge and the skills required to shoot a video that can be used for technique analysis have traditionally been introduced through lectures and subsequently learned and practised during follow-up laboratory sessions. Video skills are introduced to students on the BSc (Hons) Sport and Exercise Science programme at level 4 and are further developed at level 5, and in the final year depending on students’ choice of option units.

At undergraduate level, students work in groups of four or five for between 40 and 50 minutes to learn and practice video skills. Each group’s video is then evaluated by a different group against set criteria as a method of formative assessment.

Whilst this approach to teaching video skills works in so far as it has enabled students to progress to record videos for final year projects etc., it has a number of limitations. During the laboratory session, the tutor often has to reiterate points made in the previous lecture and spend time demonstrating particular skills, often repeatedly to separate groups. As students work in groups, skills are often shared between individuals, meaning that only some skills are learned and practiced. The student acting as the subject of the video often learns very few video skills. Thus, as students receive different levels of tuition and learn different skills they experience different levels of learning. It also may be weeks, months or even a year or more before students need to use the video skills again as part of their university education or future career. Invariably the tutor is called upon to refresh students’ skills on a frequent basis.

A new approach to teaching video skills

At the start of the 2007/8 academic year an opportunity arose to address limitations of the current methods used to teach video skills. Together with Professor Neil Fowler and Dr Carl Payton also from the Department of Exercise and Sport Science we had, the previous summer, developed six instructional videos. The videos presented knowledge and skills relating to the following six topics that are important in shooting a video that can be used for 2-dimensional technique analysis:

- Initial Set Up (6 minutes and 25 seconds)
- Joint Markers (1.04)
- Shutter Speed (6.30)
- Aperture and Lighting (3.16)
- Focus and Field of View (1.45)
- Scaling (2.14)

The videos were used as learning resources on the Biomechanics 2 unit during the 2007/8 academic year. In the weeks prior to when video skills were delivered on the unit, the six videos were uploaded to the video sharing website YouTube™. This method of delivering the videos was chosen due to the ease with which the videos could be uploaded and its perceived accessibility to students. Instead of introducing the six topics and describing the necessary skills as part of a lecture, as had been done in previous years, the URL to the account where the videos were hosted on YouTube™ (www.youtube.com/BiomechanicsMMU) was provided on the Unit’s WebCT Vista site. Students were instructed to watch the videos and make notes on them prior to the subsequent laboratory session.

At the start of the laboratory session, instead of revising some of the important topics and skills from the lecture, as had happened in previous years, the tutor asked questions to check that the videos has been viewed by the students.
and that salient points had been understood. As in previous years, students received instruction on how to use relevant features on the cameras, and were then organised into small groups and told to record a video of a member of their group performing a standing vertical jump; that could later be used for technique analysis. The session was concluded, as in previous years, with students evaluating each others’ videos.

Students were later encouraged to complete an online survey that was devised by the authors to evaluate the following aspects of their learning experience:

- Their previous knowledge and experience of YouTube™
- How and where they accessed the videos
- Any technical issues they encountered
- Their opinion of the quality of the videos
- The learning experience provided

The survey was created using a free online questionnaire website (www.freeonlinesurveys.com). Once complete, the URL of the questionnaire was made available to students through the Unit’s WebCT Vista site.

Findings from the evaluation

Of the student group, 71% (41/58) completed the survey. All of them had heard of YouTube™ and all but two of the respondents had previously used it. The whole of the ‘Initial Set Up’ video was watched by all students and the remaining five videos were watched in their entirety by at least 93% of them. Fifty nine percent of students watched the videos on campus and 54% viewed them at home using broadband. Thus, some students watched at least one of the videos on campus and at home. The minority of students who did not watch all of the videos did so because of technical problems, later isolated
to a temporary problem in the halls of residence, rather than because of poor time management.

Figure 1 shows that all of the respondents thought the quality of the image and overall production quality of the videos was either very good or good. All but three students thought that the sound quality was also good or very good.

Apart from one student, all of those who responded to the survey thought that the overall content of each of the videos was either very good or good (see Figure 2).

When asked to rate each video as a learning resource, Figure 3 shows that approximately 70% of students considered them to be very good. The vast majority of the remaining students considered the learning experience to be good.

Asked to rank ways of accessing any future video content, YouTube™ came out marginally ahead of WebCT, both of which were ranked well ahead of storage on a networked drive.

In comparison to teaching video skills in the essentially passive environment of a lecture, putting the six instructional videos on YouTube™ allowed students access to high quality information and skills demonstrations at a time and place of their choosing. They also had access to the resources as often as they wished. Results from the survey shows that students engaged with these learning resources and confirmed that they embraced YouTube™ as a medium for accessing them. Viewing of the videos by the students in advance of the laboratory session allowed the tutor to act as a facilitator, rather than as a demonstrator as in previous years. The learning environment therefore shifted from one where emphasis was placed on demonstration of skills to one where students learned and practiced skills that had previously been demonstrated to them by watching the videos. Thus, the tutor felt that students had a more equal and enhanced learning experience than in previous years. Students confirmed the quality of the resources and recognised the benefits made by them to their learning experience.

Students also recognised that the videos provided a valuable revision aid. If they are retained on YouTube™, it will allow students to have access to them when they leave University. In addition, the videos allowed students who missed the scheduled sessions through no fault of their own to acquire necessary knowledge and skills with less need for the tutor to be involved. Biomechanics tutors in the Department are often asked by students to refresh video skills that they covered earlier in the programme. Easy access to the videos by all students should reduce the amount of time that tutors spend doing this in the future.

Further considerations

Use of YouTube™ has the advantages of free bandwidth, 24/7 anywhere access, and ease of use for both staff and students. It is, therefore, currently a more attractive option than using the University’s VLE to deliver such material.

However, when using online video sharing sites such as YouTube™ the following points need to be considered:

• Obtaining informed consent from people in the video is paramount as they are on show to the world; although access could have been limited to students on the unit through use of their YouTube™ accounts
• Video producers need to have very high confidence in the accuracy, quality and production of their videos
• There is a risk of bootlegging (content being downloaded and used without consent)
• The potential risk exists of YouTube™ changing its terms of use (e.g. charging for use, limiting video length, number etc.)

Conclusion

The use of YouTube™ to present instructional videos proved to be a very positive experience by both students and staff, and one that shall be repeated. The authors have already added another video to the series and plan to include a final one later in the year. They are also currently producing another series of instructional videos on the use of force platforms in sport and exercise science.

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