Are videoed lectures an effective teaching tool?

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Videoing face-to-face lectures is growing in popularity within higher education. Previous work has focused heavily on discussing the potential benefits. To provide educators with a more balanced view, this short paper highlights the reasons why this activity may not be worthwhile.

1. Introduction

When used appropriately, video can be a powerful teaching medium (Hartsell and Yuen 2006; Shephard 2003). Reviewing the previously reported uses of video reveals two areas where it is especially effective:-

1. To grab a student's **attention** and **motivate** them to learn (Oishi 2007; Hoover 2006; Hazen, Kelly and Sramek 2002; Benney 2001; Roskos-Ewoldsen and Roskos-Ewoldsen 2001). For example, showing a television news clip at the start of a lesson to simulate discussion and demonstrate the relevance of the topic to the students' own lives. Thus, the primary aim is *not* to use video to teach the material itself. Or as Oishi (2007, p. 32) puts it, *"These videos do not provide content, but they can stimulate the interest that makes the curriculum relevant or "jumpstart" lessons"*.

2. When a highly **realistic depiction of reality** is important (Brunvand and Fishman 2007; DeLeng, Dolmans and van de Wiel 2007; Palmer 2007; White 2007; Jones, Kolloff and Kolloff 2006; Wagener 2006; Green, Voegeli, Harrison and Phillips 2003; Marshall and Cullen 2003; Herron, Dubreil, Corrie and Cole 2002; Liedtka 2001; Harwood, and McMahon 1997; Verran 1992). This could be when it is necessary to expose students to things they would not otherwise have the opportunity to see (e.g. medical procedures), or when it is necessary to 'humanise' a topic (e.g. showing dramatisations or films when teaching about the war). This is exemplified by DeLeng, Dolmans and van de Wiel (2007) who used video case studies to improve medical education. They explain *"The video cases enabled them [the students] to create realistic mental pictures of disorders, provided integrated pictures of patients as people, which challenged them to elaborate the cases seriously and were more memorable than text-based cases."* (p. 181).

However, there is one growing use of video within higher education that does not fit into either of these areas; namely the videoing of live face-to-face lectures for students to watch again later.

At its most basic, a videoed lecture involves directing a video camera towards the front of the lecture theatre to capture the lecturer, their Power Point slides and their voice. A more advanced setup involves videoing the lecturer and displaying their Power Point slides along side in a separate frame. Given that a videoed lecture essentially involves the live capture of salient visual and auditory information, the situation in which only the lecturer's voice and the presentation graphics stream are captured can also be classed as a videoed lecture.

Emerging technology can automate the process. This ensures that a lecturer only needs minimal technical knowledge and spends no additional time creating the recordings (other than the time to give the lecture). Providing there is a camera/s installed in the lecture theatre, this technology will record the lecture, process the file and then add it to a database so a student can search for the video online (e.g. E-Lecture Portal 2007; Wang, Ngo and Pong 2007; Hürst and Deutschmann 2006; Mertens, Ketterl and Vornberger 2006; Fujii, Itou and Ishikawa 2006; Hartle, Bär, Trompler and Rößling 2005; Zhang, Crawford, Rui and He 2005; Mukhopadhyay and Smith 1999).

Proponents of videoing lectures argue there are many benefits for students. Previous discussions of the negative aspects of videoed lectures have focused on either short-term issues or, more commonly, the technical limitations and quality issues. Given that automating the process of videoing a lecture is not a simple problem and the enabling technology is not yet mature, this is a reasonable area for concern. However, one important point is surprisingly absent from discussions thus far; can videoed lectures actually have a negative impact upon a student's education?

This paper seeks to redress this balance. Putting technological issues aside, it briefly reviews the benefits suggested previously (Section 2), and then highlights why videoed lectures may not actually be a worthwhile activity (Section 3).

2. Potential benefits of videoing lectures

It has been argued that videoing face-to-face lectures can provide students with a valuable resource to complement their studies (Hermann, Hürst and Welte 2006; Krüger and Nickolaus 2006; Brotherton and Abowd 2004). Students can watch the videoed lecture to revisit any points that they did not understand whilst watching the lecture face-to-face. Furthermore, they can stop, start and rewind the video to address their specific needs. In fact, software has been developed that enables students to personalise a videoed lecture by adding their own annotations (Lauer, Trahasch and Zupancic 2005). On a more practical level, videoing lectures allows students to catch up if they miss a face-to-face lecture. This also enables them to adopt a more flexible learning pattern if they wish.

Despite these suggested benefits, few evaluations have been conducted. Furthermore, the evaluations that have been conducted show conflicting findings. Some indicate that videoed lectures can improve students' grades and increase their overall level of

satisfaction and confidence with the course (Chiu, Lee and Yang 2006; Day and Foley 2006; Harley et al. 2003; Zupancic and Horz 2002). However, other work found that the availability of videoed lectures made no significant difference (Brotherton and Abowd 2004; Bell, Cockburn, McKenzie and Vargo 2001). There is also conflicting evidence surrounding whether providing video recordings of lectures has an adverse affect on attendance (Brotherton and Abowd 2004; Bell et al. 2001).

3. Potential negative impact of videoing lectures

Although some (but not all) evaluations revealed positive feedback from students (Section 2), there are two underlying reasons why videoed lectures may not benefit the majority of students.

3.1 Videoed lectures make learning uninteresting

When physically attending a live lecture, the lecturer can convey their enthusiasm for the subject, thus grabbing the students' attention and inspiring them. However, whilst the lecturer can be an excellent public speaker and the subject matter presented in a fascinating way, these qualities are often somehow lost when transferred to a video watched on the small screen. Additionally, the viewer is less forgiving of the lecturer's minor mistakes and audience disruptions when watching the recording. Given that a student will have between 6 and 12 hours of face-to-face lectures a week, if they routinely spend their time re-watching their lectures on video, it is likely their learning experience will become dull and repetitive.

To be fair though, this is ultimately a matter of personal opinion. Readers are encouraged to watch some of the examples of videoed lectures available online (searching Google or iTunes will reveal many) and judge for themselves.

3.2 Videoed lectures may hinder the development of students as independent learners

Although the authors argue that videoed lectures are simply an uninteresting format (Section 2), this really comes down to a matter of personal choice. There is, however, a more important reason why the authors believe that videoed lectures will not benefit students in the long term.

One of the key aims of a university is to help students develop the transferable skill of being able to learn for them selves. They should not see a lecture, or indeed the lecturer, as the only source of knowledge about the subject area. Instead, a lecture should teach students the key ideas, and students should then be expected to consult other sources to clarify things they did not understand. For a new student this may be as simple as studying the recommended course text book, whereas more advanced students may visit the library, search the internet or even read academic journal papers. This activity is crucial if students are to develop into independent learners.

When considering the purpose of a university at this basic level, the argument against videoing lectures is clear. Videoing lectures promotes the idea that the lecture is the only important source of knowledge about the subject area. It removes the students' need to consult other sources, and hence reduces the opportunity for them to develop

as independent learners. Or in other words, videoing lectures promotes the transfer of knowledge and facts, whilst diminishing the importance of constructing knowledge.

It *could* be argued that the common practice of giving students a copy of the Power Point slides suffers from the same problem as giving students a video of the lecture. However, this is not true. Power Point slides (typically) give students an overview of the concepts and key terms, however, their virtue is that they are incomplete. Therefore, in contrast to videoed lectures, they only provide a starting point for making notes and consulting other sources to clarify points that were not understood.

Clearly, it is idealistic to believe that all students independently investigate things they did not understand after a lecture. In reality, they often do not. Pragmatists may argue that universities may as well accept this, and use videoed lectures to overcome the problem. However, the authors argue that anything that reinforces the idea students do not need to look beyond the lecture material to gain an understanding of a subject area should be treated with caution.

4. Conclusion

This short paper draws attention to the growing trend of videoing lectures. The educational benefits of this activity have previously gone unchallenged. In a bid to start a more balanced discussion and prevent the area from becoming technology-driven, this paper examined both sides of the argument.

Ultimately, a student only has a limited time to spend on a course outside of class. Whilst using videoed lectures does have some merits, a student's time is probably better spent answering questions that require them to do some independent study and focus their attention on key aspects of the course.

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