

Sharing the vision: exploiting Web 2.0 technologies in promoting the use of multimedia in bioethics education

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Abstract

Bioethics is a field of emerging significance in society, and the importance of students grasping the ethical implications of developments in the biosciences has been echoed in recent curriculum changes. Broadcast programming and films represent a vast reservoir of vignettes suitable for promoting engagement with the science and ethics of such breakthroughs, yet it has not always been easy for educators to be aware of these resources. By exploiting a pre-existing blogging platform it has been relatively straightforward to develop BioethicsBytes, a searchable repository where ideas and recommendations about the use of multimedia clips can be shared with likeminded teachers and lecturers. The approach described here has been specifically applied in the area of bioethics education, but is readily transferable to any discipline.

Introduction

Thousands of hours of television are transmitted each year. Whatever our field of study, this level of broadcasting is bound to include many features with relevance to our course content. Conversely, the sheer scale of output can make locating the appropriate material problematic. It is unrealistic to expect the programme descriptors in general-purpose information services, such as the Television and Radio Index for Learning and Teaching (in the UK), to include sufficient annotation to satisfy all the nuances of discipline-specific usage.

Given these limitations, alternative means to share recommendations regarding programmes and clips for use in teaching have been investigated. This paper describes work we have undertaken to develop Bioethicsbytes, a web-based repository of commentaries, reviews, and structured guidance for promoting the use of multimedia resources in bioethics education.

Bioethics is a discipline of increasing importance, a fact formally acknowledged by recent curriculum changes at both secondary and tertiary level (Willmott and Willis, 2008). Within the UK Higher Education sector, the undergraduate *Benchmarking Subject Standards for Bioscience*, first published by the Quality Assurance Agency (QAA) in 2002 and tweaked in 2007, make nine explicit references to the provision of ethics teaching in biology syllabuses (QAA, 2007). This emphasis has come as a shock to many academics, trained in an era with different priorities, and many stated that they felt ill equipped to tackle ethical issues (Willmott *et al*, 2004).

At secondary level, the place of bioethics in the school curriculum has been evolving since the turn of the century. Two reports *Beyond 2000* (Millar and Osborne, 1998) and *Valuable Lessons* (Levinson and Turner, 2001) have had a pivotal role in shaping science education. The importance of ethical understanding and wider 'scientific literacy' as identified in these documents has had a direct impact in the development of specifications for both GCSEs (taken at age 15-16) and A levels (taken at 17-18).

The first recommendation of the *Beyond 2000* report included the need for the science curriculum to provide “*sufficient scientific knowledge and understanding to enable students to read simple newspaper articles about science, and to follow TV programmes on new advances in science with interest*” (Millar and Osborne, 1998: 9). A number of recent projects have helpfully addressed the use of newspapers in science education (e.g. Jarman and McClure, 2007; Hyden and King, 2006). To date, the consideration of television representation of science and scientific news has not been so well advanced. Like their colleagues in universities, Science teachers in schools have reported feeling uncomfortable dealing with ‘opinions’ rather than ‘facts’ (Lewis, 2006).

It seems clear, therefore, that there has been a very real need for greater resources to equip teachers and lecturers to tackle issues in bioethics education and Bioethicsbytes is one service intended to meet that need.

Rationale for Bioethicsbytes

The Bioethicsbytes project rests on several foundational principles. The first is our conviction that there is huge pedagogic value in the use of video. In the context of a DIVERSE conference this is not a particularly shocking revelation, but is nevertheless worth restating since many of our academic colleagues have not, perhaps, been as keen to embrace the use of audiovisual media.

Secondly, we are particularly enthusiastic about the use of video *clips* or cameos (Holtham, 2007). An extract has the advantage of focussing immediately on the key issues. If, for example, you have an hour long documentary and only a 50 minute teaching slot you are going to struggle to show the whole episode without incurring the wrath of whoever is scheduled next in your venue. No doubt one or two of your students will also be underwhelmed by your offer of some extra tuition. Selection of clips, rather than a full programme, frees up time for discussion, thereby enhancing the educational merit of the visual material. Furthermore, use of selected segments rather than whole episodes allows you to bring together clips from a variety of sources within the same presentation. In this way, representation of different viewpoints on a particular issue, for example the different approaches taken in ethical decision-making, is facilitated. We regularly use clips as scene-setters, as case studies, and/or to convey particular factual information in an engaging manner.

Thirdly, broadcast material can readily be obtained for educational purposes. The legal use of television programmes and films are subject to various regulations, some of which are jurisdiction-specific. In general terms, however, footage can be used freely provided that relatively straightforward conventions are adhered to (see, for example, the Educational Recording Agency website www.era.org.uk for licensing rules in the UK).

Fourthly, there is an important distinction between having permission to show broadcast material and knowing both what is available and how best to exploit the resource. Colleagues may require specialist assistance to locate and use appropriate clips. We have found that so-called Web 2.0 technologies, such as blogs and social bookmarking, are ideal for sharing practical suggestions regarding suitable footage. Our particular focus is on bioethics education, but the approach taken could easily be adapted to all manner of different subject disciplines.

The debt Bioethicsbytes owes to TRILT

Before turning specifically to the Bioethicsbytes project, it is important to draw attention to a fantastic resource available to academics in the UK. The Television and Radio Index for Learning and Teaching (TRILT, www.trilt.ac.uk) run by the British Universities Film and Video Council (BUFVC), provides

two great services for knowing the details about broadcast programmes. Firstly, TRILT offers a searchable database of the transmission history covering terrestrial and satellite broadcasts since 1995. Each programme has a unique ID code, which can then be used to identify recordings available free of charge via the BUFVC's back-up service, an archive of programmes, including all terrestrial broadcasts since June 2008. Secondly, TRILT can provide weekly e-mail alert warning you of any programmes coming up in the next fortnight that match your chosen keywords. There is no limit to the number of keywords you can employ, and these can range from quite broad categories through to the ID for one specific episode of a particular series if you are already aware of its pedagogic potential.

It was via a TRILT e-mail that we first became aware of an excellent resource for teaching about one of the most controversial areas of recent bioethics. A search for "stem cells" came up with a listing for *Kenny Dies*, an episode of the anarchic cartoon series *South Park*. Not renowned for its educational pedigree, *South Park* seemed an unlikely source, but on the strength of the alert we requested that the programme be recorded. As a consequence we unearthed a fantastic 90 second clip which, over the last three years, has been a staple component of our lectures and workshops on the science and ethics of stem cell biology.

The limitations of TRILT

The *South Park* example is particularly striking since we would not have known about it without the TRILT service. Invaluable as TRILT has proven, however, it is not realistic to expect a general-purpose alerting tool to include adequate information to highlight the subject-specific potential of all programmes, nor to make recommendations about how a particular clip might be incorporated into classroom activity.

A second example, *Better the devil you know*, an episode of the medical drama *Holby City* nicely illustrates the limitations of TRILT. The programme contains a very good cameo for introducing xenotransplantation, the suggestion that we might overcome shortages for human organ donation by using animal organs instead. The TRILT entry for this episode (ID: 005BD824) states "*Abra returns to Holby and clashes with Ric over the treatment of a terminally ill patient, when Abra decides to offer the patient an illegal transplant. Chrissie thinks she's cracked it with Sam.*" Armed with this information alone, it is unlikely that the pedagogic value of the clip would have come to light.

It was clear therefore that despite the many benefits of TRILT, there was room for an additional service for sharing rather more specific advice on the use of multimedia resources in teaching about bioethics. Over the last two years we have been developing Bioethicsbytes to meet this need.

A Web 2.0 solution

Bioethicsbytes (www.bioethicsbytes.wordpress.com) is a weblog, or 'blog' for short. When blogging first started in the 1990s, it was initially seen as little more than a vehicle for sharing the contents of your personal diary with anyone who might be interested. The fact that some of the more salacious diaries inevitably proved to be early crowd-pleasers added to the slightly tawdry image of blogging as a means of communication. Within the last decade, however, blogging has grown into a global industry worth billions of dollars and the content of blogs has diversified (Technorati, 2008). Educational and academic blogging is now an increasingly respected activity to the extent, for example, that in August 2008 the Nature publishing group and the Royal Institution are co-hosting an inaugural conference on Science blogging.

The growth of blogging has been fuelled by the establishment of free blog-hosting services such as Blogger (www.blogger.com) and Wordpress (www.wordpress.com), the home of Bioethicsbytes. There are many advantages to using a blog-hosting service. Firstly, a range of off-the-shelf style sheets are available and you don't need to know any HTML in order to produce your blog, although an ability to

work with code can help to improve the appearance of your site. Secondly, the service includes in-built searches based on categories, tags or reader-selected keywords. Thirdly, the blogs have good visibility on Google and other search engines. Fourthly, an extensive range of statistical and tracking tools come as standard, thereby allowing you to know how many people have visited your site, how they found you and the specific pages they visited when they were there. Fifthly, the blog is interactive and responsive – unless you invoke restrictions, users are free to post comments and suggestions and, unlike more traditional media, the blog author(s) can edit the resources whenever it seems necessary or sensible so to do.

As Bioethicsbytes has evolved we have developed a range of posts. Reviews and recommendations regarding the usage of clips are the main format of blog entries. A variety of media genres are covered including films, TV fiction and documentaries, but also radio, books and podcasts.

The aim throughout is to deliver helpful information regarding the science, the ethics and the pedagogic potential of each of the multimedia resources. A review will typically summarise many of the key issues within the programme and highlight specific clips (via reference to timecodes) that are most useful for teaching on the topic. Where applicable, the relevant TRILT identification code is noted to assist users in ordering their own copy of the video/audio material. Exemplar questions for steering discussion based around the specified clip(s) are sometimes included, and worksheets in PDF format are provided for use with some videos. Our most academically rigorous entries are branded as “extended commentaries” and seek to consider the multimedia resource in the context of scholarly articles on the topic.

Clearly, Bioethicsbytes is an accumulative and ongoing project; previous entries remain valid provided (at least some of) the target audience can still access the relevant source materials. Guaranteeing access to the clips has, however, always been a concern – particularly with the increasing prominence of bioethics in the secondary education curricula. The resources generated on Bioethicsbytes have much potential for teachers in that sector, however most schools are not members of the BUFVC (for which a subscription is required) and thus cannot access their services.

The rapid rise of online video is now circumventing some of these difficulties; many valuable clips are ending up on sites such as YouTube and GoogleVideo (although the provenance is sometimes questionable) and news reports are also becoming a staple provision on the websites of broadcasters such as the BBC. We are therefore looking increasingly to the development of study guides and background briefings linked to freely available online media, which can then be streamed, or in some cases downloaded, for use in the classroom.

Other new innovations in Web 2.0 technologies are being incorporated alongside the core activities of Bioethicsbytes. For example, it has proven relatively trivial to add a “Bioethics in the news” sidebar fed automatically using a specific tag generated on Delicious, the social bookmarking service (<http://delicious.com/chriswillmott/bioethics>). These news articles are being tagged for a separate purpose, but the automated feed provides additional benefit to users of the Bioethicsbytes site.

In a separate development, we have recently started to distil information gleaned from TRILT and other sources into a page alerting users to upcoming television programmes that they may wish to record at the time of broadcast. This includes tried-and-tested material, which we may well have already described in the Bioethicsbytes reviews, as well as new documentaries and dramas that we anticipate will be relevant for the teaching of bioethics.

Conclusions

Bioethicsbytes has been developed as a means to promote the use of multimedia clips in teaching about the ethical issues associated with developments in biology and biomedicine. Despite being a field of increasing importance, the specifics of bioethics are likely to be outside the remit of most members of the DIVERSE community. Nevertheless, the approach undertaken in this project is readily transferable to other disciplines, and as such Bioethicsbytes serves as a paradigm for both the use of clips of broadcast material and the use of emerging Web 2.0 technologies in enthusing and equipping teachers.

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