Bioethics and Media in Education

The ethical dimension of biological and biomedical advances has become much more prominent in UK education in recent years. Dr Chris Wilmott of the University of Leicester and editor of BioethicsBytes explores how the media can contribute to the science and ethics debate.

Taking a furtive glance along the corridor, Dr Abra Durant steers his patient Pete towards a place where their conversation will not be overheard. ‘You know’ he starts, ‘They’ll tell you you’re all out of options, but that’s not necessarily true’. He goes on to encourage Pete to allow him to perform an experimental transplant using a pig’s kidney, an operation unsanctioned by the ethics committee.

This exchange, from the medical drama HOLBY CITY, may have been no more than an intriguing subplot during most viewers’ early evening entertainment. As an enthusiast for the use of multimedia in teaching, however, I saw a case study – one that I have subsequently used as the kernel for a tutorial on the science and ethics of xenotransplantation.

Accounts of dramatic breakthroughs in biology, particularly in biomedicine, are frequently portrayed in news bulletins. In recent months, these have included: the suggestion that embryos for research can be made by fusing human cells to animal eggs; attempts to build a synthetic organism; expanding preimplantation genetic diagnosis to cover more conditions and the possibility that normal cells might be ‘reprogrammed’ to become stem cells. At the same time, changes in legislation concerning, for example, presumed consent for organ donation (i.e. an ‘opt out’ scheme rather than the current ‘opt in’ donor card model); on broadening the National DNA Database to include all UK citizens and visitors; and on a code of conduct for scientists, have been proposed. Each of these developments is intended to offer benefits to individuals and wider society, but all are controversial and generate significant ethical dilemmas. Add into the mix important ‘old chestnuts’ such as abortion, euthanasia, use of animals in research, GM crops and climate change and it becomes clear why the need for training in handling the ethical dimension of biological and biomedical advances is being increasingly recognised.

Formal acknowledgement of the importance of bioethical awareness can be seen in a number of recent developments in UK education. New specifications for GCSE Science, courses taken by all 14 to 16 year olds in England and Wales, were introduced in September 2006. The new curricula place much greater emphasis on ‘How Science Works’; students are expected to know much more about ‘how and why decisions about science and technology are made, including those that raise ethical issues’. In higher education, benchmarking statements have been issued by the Quality Assurance Agency to describe the core content and characteristics of honours degree programmes in some fifty or more different disciplines. The benchmarking statements for Biosciences, issued in 2002, make several explicit references to the need for all undergraduates studying biology and related disciplines to have a grasp of the ethical implications of novel developments in their field.

What roles can multimedia resources play in teaching about bioethics? Clearly news footage itself can prove a useful focal point for discussions. The growing availability of streamed news on the BBC website and (hopefully, by the time you are reading this) on the Newsfilm Online service provide access to reportage.

Documentaries are often, of course, a visual way of conveying information which it would be difficult to describe adequately in a lecture setting. With few exceptions, I would rather show a short clip or clips from an episode and leave time for developing discussion prompted by the excerpt(s) rather than showing the programme in full. In the bioethics sphere, several episodes of the BBC’s flagship science series HORIZON remain useful, including ‘Trial and error’ (about the death of Jesse Gelsinger in a gene therapy trial), ‘The world’s first face transplant’ and ‘Who’s afraid of designer babies?’ The 2006 Robert Winston series A CHILD AGAINST ALL ODDS showed the science of pioneering treatments involving in vitro fertilisation and associated procedures, but also demonstrated very vividly the ethical dilemmas and the emotional anguish for the families seeking help. ‘The drug trial that went wrong’ (DISPATCHES) and the sections on performance-enhancing drugs in SPORT’S DIRTY SECRETS are amongst other recent documentaries that have also proven useful for teaching.

As illustrated by the HOLBY CITY example above, fictional programmes can be a rich source of scenarios for engaging students with the issues arising from developments in biomedicine. The autumn 2006 series of the CASUALTY spin-off was positively dripping with significant ethical storylines. In addition to the xenotransplantation story mentioned, there was also useful footage for discussing euthanasia, stem cell therapies, counterfeit medicine and genetic screening. Medical dramas in general do, of course, throw up a larger than average number of ethical debates and their use is quite widespread in medical education.
particularly in the USA. The bioethics.net website, for example, has an entire section devoted to discussions prompted by episodes of ER and the ghastly compound noun ‘cinemducation’ has been coined in the title of a book, subtitled ‘a comprehensive guide to using film in medical education’.

This reminds us that availability of off-air material is not limited to made-for-TV resources. Recordings of major films can prove similarly useful; these include GATTACA (1997) (genetic screening and discrimination), MILLION DOLLAR BABY (2004) (euthanasia), and THE ISLAND (2005) (human cloning). I also use the James Bond film DIE ANOTHER DAY (2002) in a lecture on gene therapy, but as a classic example of an important scientific concept being bastardised by filmmakers!

Having spotted the potential of clips from films and programmes such as these, what is the best way to share them with like-minded colleagues at other institutions? Publishing a book is clearly one option, albeit a rather static capture of availability at one moment in time. We have pursued an alternative and more interactive model. Exploiting the rise of user-friendly blogging servers, in this case wordpress.com, BioethicsBytes is a website where recommendations concerning suitable films, television and radio programmes, and books can be listed and shared.

The BioethicsBytes site consists of a growing collection of commentaries and reviews in a variety of styles. Early posts tended only to alert users to the existence of a particular resource and made suggestions about suitable clips from within the whole programme/film that would be most useful as a discussion starter, or to illustrate a particular point. More recently, content has diversified to include both structured guidance on the ways that a particular clip might be used, and other posts that look in rather more detail at the significance of a programme in the context of broader academic discourse. Examples of the latter would include commentaries on the boundaries between humans and other species as illustrated in both DOCTOR WHO and in the Channel 4 documentary series ANIMAL FARM.

Highlighting the merit of any particular programme would, of course, be of very limited benefit if interested readers could not obtain copies of the episode in question. It is for this reason that cross-referencing to the BUFVC’s Television and Radio Index for Learning and Teaching (TRILT) has always been an integral part of the BioethicsBytes resource. Many university staff remain sadly unaware that they can obtain copies of programmes via the BUFVC and that, within the fairly minimal constraints required under the terms of the ERA license, they can use that material freely and legally with students on their campus.

The merits of a second TRILT service, the weekly e-mail alert, should also be more broadly recognised in the HE community. An unlimited set of keywords can be assembled into one message and you can specify the day on which you want your alert to be delivered. Inevitably some programmes crop up very regularly within the listings, but the benefits of prior warning about a potentially significant new transmission outweigh any irritation about scrolling past ‘old friends’. Without notification via the TRILT e-mail, for example, I would have been steering well clear of the anarchic comedy SOUTH PARK. My TRILT alert on the keyword ‘stem cell’, however, drew my attention to an excellent ninety-second explanation of stem cell science buried within the episode ‘Kenny Dies’. This summary, both humorous and surprisingly accurate, is an absolute gem; I have used it frequently when teaching both biological scientists and medics.

As the name implies, BioethicsBytes is focussed on media resources relating to the ethical significance of developments in biology and biomedicine. The concept, however, of using interactive ‘Web 2.0’ technology to share peer-generated recommendations for use of multimedia in teaching is readily adaptable to any discipline.

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**RECOMMENDED WEBSITES FOR TEACHING BIOETHICS**

Bioedge
www.australiansbioethics.org/
Produced by the Australasian Bioethics Information service, Bioedge is a weekly update on recent bioethics stories. Subscribing to the weekly e-mail alert is an efficient way to keep tabs on developments in the field.

Nuffield Council on Bioethics
www.nuffieldbioethics.org
Since its inception in 1991, the Nuffield Council on Bioethics has produced many definitive reports on ethical aspects of developments in biology and medicine, most recently on the forensic use of bioinformation.

BioethicsWeb
http://www.intute.ac.uk/healthandlifesciences
Now part of the broader Intute service offering recommendations of good resources for education and research, BioethicsWeb is a Wellcome-funded portal for articles on bioethics.

Bioethics Briefings
www.bioscience.heacademy.ac.uk/resources
A series of short documents offering background on both the science and ethics associated with recent developments, including a worked case study and other advice on teaching about the topic.

Damaris
http://tinyurl.com/2duny2
Their Culturewatch section has a number of thought-provoking articles. From a bioethics standpoint, the study guides and articles on films tend to be more relevant than those about TV programmes.

BioEthics Education Project (BEPP)
Primarily produced for a secondary education audience, BEPP offers useful links to a number of relevant resources.

Citizen Science
www.at-bristol.org.uk/cz/
Based at the @Bristol Science Centre, the Citizen Science site offers a collection of interactive ethics-themed games resources of particular, but not exclusive, relevance to secondary science.

Bioethics.net
http://www.bioethics.net/

Literature, Film and Genetics
http://www.literatureandgenetics.org
A site with similar aspirations to BioethicsBytes, although the emphasis is more on the literature end than on the use of moving images.

BBC News
http://news.bbc.co.uk
An ‘obvious’ choice, but the availability of news items as streamed clips makes this an increasingly useful source.

ITN Source
http://www.itnsource.com
Another good way of tracking down specific reportage, particularly if it pre-dates BBC online.

Genewatch
http://www.genewatch.org/
An interesting website on all things genetic, coming from a precautionary perspective.

Bioethics Today
http://www.bioethics-today.group.shef.ac.uk
A helpful portal providing links to a variety of online resources covering ethical aspects of biomedicine, particularly on genetic topics.

National Institutes of Health (USA)
http://bioethics.od.nih.gov/
Another portal to web-based resources on bioethics.

BioCentre
http://www.bioethics.ac.uk
Centre for Bioethics and Public Policy.

Christian Medical Fellowship
http://www.cmf.org.uk/literature/
Includes a very thorough collection of ethics resources, particularly their CMF files.

Wellcome Trust
http://www.wellcome.ac.uk/node/5240.html
A charity funding many projects in bioethics and/or public understanding of science. This link goes to a series of reports on activities organised by the Trust’s Biomedical Ethics programme.

Quality Assurance Agency
http://www.qaa.ac.uk/academicinfrastructure/benchmark
The benchmarking statements for bioscience include several references to the importance of ethics education in biology courses.