



The Impact of New Technology on Broadcasting Education

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Abstract:

The world of education is changing rapidly, and not always for the better. Schools are underfunded, teachers are overworked and students are less engaged than ever before. But there's hope on the horizon: video conferencing systems like WebEx® and Zoom can help educators collaborate more easily, reduce costs in the classroom, improve student performance and much more. For the last twenty years, educational broadcasting in Britain has enjoyed a relatively stable and comfortable existence. That security and tranquility is quite suddenly being shattered as a result of major technological and a political developments. New information technology is going to change educational broadcasting in ways that were inconceivable from years ago. Let's take a look at how technology and broadcast is changing education for the better:

Key words : New technology, Broadcasting, Video conferencing, WebEx, Zoom.

Introduction : Broadcast media and technologies

Television, radio and print for example are primarily broadcast or one-way media, as end users or 'recipients' cannot change the 'message'. Note that it does not matter really what delivery technology (terrestrial broadcast, satellite, cable, DVD, Internet) is used for television, it remains a 'broadcast' or one-way medium. Some Internet technologies are also primarily one way. For instance, an institutional web site is primarily a one-way technology.

Radio and cassettes:

A great deal of publicity is being given to high technology in education, particularly microcomputers and video-discs. There is a away from the effects of equally powerful low cost technology. Audio recording is not new in education, nor glamorous, but the development of cheap, easy-to-use audio-cassette equipment has already had a major impact on the use of educational broadcasting, both in schools and adult education. For many years, schools have used tape-records to record school radio broadcasts. Nearly all schools have audio recording equipment. Recording is ubiquitous, and the ability to record has been much enhanced by the introduction of combined radio-cassette

machines. Recording became even more significant in 1983 when the BBC switched secondary school radio broadcasts from afternoon to night-time transmission. This move, resulting from the wish of the BBC Radio 4 Controller to offer a popular programme to a wider audience on the VHF (FM) band-width, requires recordings to be made in schools automatically at night-time using time-switches.

This change has been implemented despite initial opposition from the BBC's own Educational schools had electronic time-switches, and night-time transmission requires local education authorities to spend over 200 000 on extra equipment. It entails centralized planning of recordings in advance and a pilot showed that there was a high failure rate in overnight recording due to teachers not correctly operating the automatic recording equipment. The BBC radio producers, the Educational Broadcasting Council and the local education authorities all thought that the move would reduce the use of radio in secondary schools. At the time of writing, it is not known whether these predictions will come true. However, in Norway and Sweden, an alternative system works very effectively most local education authorities have set up an audio visual unit in which programmes are recorded off-air by a full time technician in which they request the programme that they need. The service is relatively cheap to run and there is virtually no failure rate in there is no real need to broadcast radio at all since all programmes could be mailed on tape at very low cost to the local centers.

At the Open University, the impact of audio-cassettes on radio has been dramatic, with radio transmission in 1983 dropping to less than thirteen hours a week, and over 500,000 cassettes being mailed to students. Furthermore, more than a third of the students who listen to the radio programme that remain do so on recordings. In 1982 91 per cent of Open University students had audio-cassette players. Just under half of the radio recordings are made off-air by students themselves but the majority are heard from cassette tapes ordered by students through an audio-cassette loan scheme which has been in operation since 1977. Students wanting to hear a radio programme on cassette may obtain up to four programmes at a time by sending a request card to the University's headquarters. In 1981 42,000 programme recordings were requested, and the loan scheme increased the average listening rate by 6 per cent to 44 per cent, at an average cost to the University of 28 percent per programme request.

Cassettes can be used for a variety of educational purposes for which radio is less suitable or convenient: practice leading to mastery of a technique; commenting on diagrams, charts, tables or text; talking students through a home experiment; backing up or commenting on the television programmes; recordings of conversation, interviews, language use and discussions, which can be replayed several times for the purpose of analysis'; and many other uses. The Open University has designed an audio-cassette package which demonstrates various ways in which audio-cassettes can be used in a home-learning situation.

Academic staff at the Open University like audio cassettes because they can easily integrate them with the texts as they design their courses. They can take a recorder home and rough out ideas as they develop the text, whereas with a radio programme, with its continuous and uninterrupted flow, it is impossible to develop such close integration between sound and print. The final cassette tape still benefits from being produced to ensure good sound quality and

to avoid mistakes or ambiguity in the script, but academics generally feel that they have much more control over the cassette script than with radio.

Video-cassettes:

The pattern regarding audio-cassettes and radio is repeating itself with video-cassettes and television to some extent, although there are important differences. As with audio-recorders, a video-cassette player in a school gives more flexibility to the teachers in their use of broadcast materials. However, there are far fewer video-cassette machines in Britain doubled from 1980 to 1981, This brought the number up to only 25 percent, and few schools has more than one, which meant that they could no play back and record at the same time. Nearly every secondary school had a video recorder in 1981, but the average number per school was only two, not really enough to give the case of access and flexibility required in video recording and playback equipment would do more than anything to increase the effectiveness of schools television. It is significant that the increase in equipment over the last five years has been paralleled by an increase in the overall use of television, particularly in secondary schools, Nevertheless, there is still not enough equipment yet in schools to justify the transfer of schools television to night-time transmission although, technically, it is easier to record television than radio off-air because of the in built clock on most video-cassette machines.

Video-discs and interactive video:

There are different manufacturers' formats for video-discs and a variety of models within each format but, nevertheless, the principle of video-disc technology is relatively simple to grasp. The more advanced systems using laser technology allow up to 54,000 single still frames, with full colour, to be stored on one side of an disc. Each frame can be individually identified and accessed almost instantaneously. The rate at which these frames can be played can be varied across a wide range of speeds, from stepping through single frames, through slow motion, up to normal or even fast speeds. Two high quality independent sound tracks capable of synchronization with the pictures when played at motion speed are also available.

These features allow a combination of moving and still pictures to be played linked to stereo or two independent sound-tracks. The systems allow for slowmotion, frame-by-frame presentation, fast motion, fast or slow forward or reverse search, or still-frame presentation with no picture jitter at all on still-frame, each feature un r the direct control of the viewer. More significantly full computer control over the video-disc player is possible, either using an 'in-board' microcomputer linked to the video-disc player through an 'interface', i.e. a processor or computer programme that allows the microcomputer electronic assess to the video-disc player's controls. With the right interface, it is possible to link up low cost domestic video-disc players with low-cost micro computers, and to combine graphics keyboard symbols from the computer with sound and pictures from the video-disc, on the same television set, with pictures from a both sources either overlaid, or presented in sequence.

Cable and satellite could have major implications for education, but given the slowness with which they are likely to develop in the United Kingdom I shall limit myself to a very brief outline of their potential and limitations and the likely consequences for educational broadcasting.

Teletext and view data :

Teletext systems such as CEEFAX and ORACLE which broadcast 'frames' or 'pages' of information that can be called up at any time by the viewer, have at the moment only two real educational advantages: they are useful for up-dating information, such as news headlines and weather forecasts; and the service is free. Their educational limitations though are considerable. The number of pages that can be accessed is limited, in 1983 to around either hundred, and since each teletext page holds far less information than a printed page, the total amount of information that can be accessed is very small indeed. Because of the inherent nature of the technology, teletext information that can be easily condensed and up-dated. There is no possibility of two-way communication, and a viewer can have irritating time delays while waiting for pages called up. Teletext services have been used, however, for transmitting computer programmes to schools, which are received on a standard aerial and dumped into a BBC microcomputer, again offering a free, if limited, distribution service.

Microcomputers :

It is the microcomputer which is likely to have the greatest long-term impact on educational broadcasting, as on many other aspects of our lives. Microcomputers will enable individual teachers to create their own audio-visual teaching materials quickly, easily and economically, and will enable the individual learner to interact in a wide variety of ways with such audio-visual materials, which can be tailor-made to the individual's needs. This material is likely to be highly motivating both for the teacher and the learner. To do this, teachers will not need to be highly skilled in using computers, and the learner need not have any programming expertise to study in this way. Furthermore, this is not a Utopian dream: such a situation could be widespread in British education by the early 1990s. The ability to create one's own audio-visual materials on microcomputers will not eliminate altogether the need for educational broadcasting but it will require educational broadcasting to be used more precisely.

Conclusion : New media technology is as a matter of fact the way to go for broadcast organisations willing to meet the ever-growing demand for news based on the many activities going on around the globe daily. However, a lot of care needs to be taken in the acquisition of these technologies especially considering the cost. Video can be a powerful tool in the education space, whether it's used as part of an online course or in a classroom setting. The benefits of broadcast and streaming video systems for educators include reduced costs, improved collaboration between educators and students, high-quality audio and visual communication. These advantages will allow students to develop deeper understanding of topics through interactive learning experiences that are more exciting than ever before.

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