BOOKS

The Role of Technology in Distance Education
A.W. Bates (Ed.)
Beckenham, Kent: Croom Helm Ltd.,
1984, 231 pp.
Reviewed by Angelina T. Wong

There are two major groups of adult education professionals who need to be kept informed about the growth of technology in distance education. The first is the staff working in the increasing number of specialized distance teaching institutions around the world. The second group is the staff working in conventional institutions who are considering the necessity of the possibility of off-campus teaching. For the purpose of program planning, both of these groups need to carefully consider the range of educational media which are available and appropriate for distance teaching. Given the speed of technological development, there is often a pressure to use technology for its own sake. In addition, each new technology usually generates its own group of enthusiastic supporters who tend to proclaim its merits and overlook its weaknesses.

The Role of Technology in Distance Education is aimed at the above audiences. It provides a comprehensive review of the range of technology now being used in distance education and examines some of the issues arising from these technological developments. The book groups the different forms of educational technology under two major sections: media in course design, and media in course management and presentation.

In the first section, there are chapters on texts and word-processors, broadcast television, satellite and cable, videocassettes, video-discs, computer-aided learning, radio, audio-cassettes, and home kits. Each of these chapters opens with a description of the current state of the art, followed by the cost of the system (based on 1983 estimates), and ends with some crystal gazing as to how future developments are likely to evolve.

The second section deals with course delivery and administration, and includes chapters on telephone teaching, Cyclops shared-screen teleconferencing, computers in academic administration, teletext systems, viewdata systems, tutors and media, and local media resource centres. The final two chapters constitute a third section which attempts to pull together the various media, using the pedagogic differences between the various media as a framework for discussion.

The editor of this book, A.W. (Tony) Bates, is a Reader in Media Research Methods and head of the Audio-Visual Media Research Group, in the Institute of Educational Technology at the Open University. He has succeeded in pulling together a team of contributing authors who can write lucidly and interestingly about a topic that often confuses or overwhelms academics and administrators. Fifteen of the seventeen contributing authors are associated with the Open University, and the experiences which they use to illustrate the capabilities of the given media are based on the Open University's courses. Nevertheless, they have managed to provide some realism about the various technology as well as to stimulate some re-assessment of the more "conventional" media such as audio-cassettes and broadcasting. Nichola Durbrige, for example, presents a convincing case for the continued use of the "simple, quick and cheap to prepare" audio-cassettes (chapter 9.)

A few of the terms used in the book may cause some confusion for Canadian readers. For example, the "viewdata" system described in chapter 15 is a system which allows a user to access information stored in a remote computer via the public telephone service. It is commonly known as "videotex" outside Britain, and the Canadian counterpart is the Telidon system. The "teletext" referred to in chapter 14 is an electronic data distribution method using broadcast and/or cable as the transmission medium. "Teletex" is a form of telex-style electronic mail available at the Canadian post office. Britain happens to have the largest teletext service in the world. The "Cyclops" system described in chapter 12 is a unique system developed by a research team at the Open University. Its main strengths are its writing and drawing facility and its interactiveness.

The final two chapters (18 and 19) serve as a stimulus for educators to think about how they should use technology for distance teaching. As a matter of fact, readers who are unfamiliar with the various forms of educational technology should perhaps read chapter 18 before tackling the others. John Sparks makes an excellent attempt to relate the selection of technology to the different kinds of audiences, subject matter, courses, forms of access to education, as well as the different study patterns amongst those who want to learn.

In the final chapter, Tony Bates predicts that the new technology will provide: (1) a wider range of teaching functions and a higher quality of learning; (2) lower costs; (3) greater student control; and (4) more interaction and feedback to the students. However, he also points out that effective distance education requires technology which is so cheap, reliable, easy to use and multifunctional that it can be found in every home. The recently developed technology (e.g. video-discs, Cyclops) which are capable of delivering highly individualized and interactive lessons are simply not yet cost-effective. It appears that books, broadcast television, radio, audio-cassettes and the telephone will still be the dominant technology for home-based learning in the near future.

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MICROWARE

By Leonard F. Proctor

If you have suggestions or contributions that you would like to make to this column, please forward them to: Dr. L.F. (Len.) Proctor, Dept. of Educational Communications, College of Education, University of Saskatchewan, Saskatoon, Sask. S7N 0W0.

COLOR SLIDES FROM YOUR COMPUTER

by Barry Brown

Computer graphics has become an industry catch-word. Those fortunate or rich enough, with the appropriate interface equipment, are now utilizing computer generated transparencies to enhance their presentations. Even a modest dedicated computer slide production system costs as much as many complete microcomputer packages. Those of us without the luxury of specialized computer transparency equipment would often find it useful to include computer slides in our presentations. This article is designed to help you create computer generated color graphics by direct photography of the computer monitor screen.

Computer generation of graphics offers distinct advantages over manual methods. Some of these are:

* create, view, and modify graphic before committing to final medium of presentation
* reduce time and effort required to produce graphics
* increase uniformity and legibility of graphic presentations
* synthesize complex information to produce simplified visual presentation
* merge text and graphic to permit comparison, contrast, or sequence of information
* quickly and easily modify shape, size, format to increase communication value
* change, at a key stroke, pattern or color variations to delineate, highlight or contrast information
* employ exploded, zoomed, or rotated aspects of a visual to spot-lite specific information

Many software graphic packages are available which perform the above operations. This article will deal only with conversion of the screen image to a 35 mm color transparency. Beagle Bros ALPHA PLOT and Phoenix ZOOM GRAFIX were utilized to create the graphics in this column. A little experimentation with any graphics package will give you the necessary color screen images to test your ability to convert computer images to color slides. If you find it difficult to obtain an appropriate image with which to experiment, use one of the excellent graphics that often introduce game disks.

Creation of color slides directly from the computer screen is simply a matter of snapping a picture of the monitor screen. Attention to the following photographic tips will greatly increase the possibility for an initial success since a number of technical variables inherent to television and camera come into play.
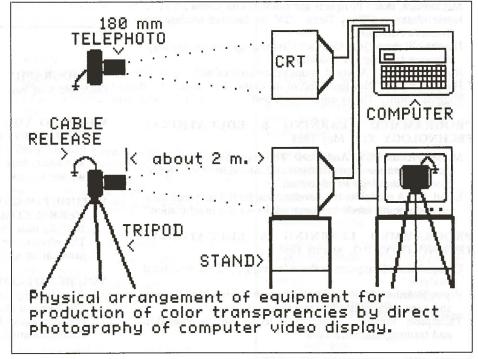
Several companies produce equipment specifically designed to photograph the computer screen image directly. If large scale presentations are envisaged, this type of equipment may prove cost effective, but for the casual user the least expensive method makes use of readily available equipment. The key component is a single lens reflex camera with interchangeable lens. Access to this type of camera is important in order to see the same image through the camera view finder as will be imaged on the film. The camera must have capability for lens interchange to permit fitting a telephoto lens.

Most television monitor and receiver screens (cathode ray tube CRT) feature a curved face-plate which causes a distorted image when photographed. One way of eliminating this distortion is to obtain a flat-screen CRT display, but these are scarce and cost about $2200. The best way for an occasional user to minimize distortion caused by screen curvature is to utilize a long or telephoto lens when photographing the display. The camera remains several feet from the display, tending to compress distance perspective. Telephoto lenses from 135 mm to 300 mm work adequately, but a 180 mm or 200 mm lens seems to give best results.

It is imperative that a sturdy tripod is utilized to provide a well composed and shake-free image when a long telephoto lens is used. A cable release reduces camera shake as the exposure is made. Arrange the camera and CRT display as shown in the diagram. Make certain the camera is level and centered vertically and horizontally on the screen. The camera could easily be two meters from the screen when a long lens is used. Move the camera closer or further from the screen, focusing each time, until a clear image of the screen area to be photographed is obtained. Note that most camera view-finders show somewhat less than will appear on the film.

Physical arrangement of equipment for production of color transparencies by direct photography of computer video display.

MICROWARE

Crop the image in from screen edge about two to five centimeters, depending on screen size. Arrange the camera and display so that no window or room light is reflected directly into the camera. Sufficient overhead light for working will not usually impair image quality.

Quality of final image depends on several factors with display type and quality foremost. If you have a choice, a color monitor will always give better results than a color receiver, since rf modulation and demodulation reduces resolution of the screen image. It goes without saying that one should always select the most expensive and well maintained color monitor available. Monochrome monitors are also suitable for many types of information and are treated in exactly the same manner as a color display.

Selection of a film depends on cost, quality, and processing. Good results have been achieved with Kodak Ektachrome and Kodachrome daylight type film in the ASA 200 range. Some experimentation is necessary in order to establish a repeatable standard of quality. It is important to keep an accurate record of all film and exposure data so that success can be repeated and poor results eliminated.

Exposure is best set manually as automatic exposure systems can be tricked by amount of information and background color on the screen. A good starting point is an aperture setting of f8 and a shutter speed setting of one second. The scan rate of a television display is 30 frames per second with a totally blank screen between each frame. Thus exposure time must be longer than 1/30th of a second or there is a risk of obtaining a partial frame. The image improves when the shutter remains open long enough to allow several separate frames to be recorded additively. Exposure times of a half second and one second seem to be the best in most situations.

Exposure and color are affected greatly by the settings on the video display. If the display has detents (click-stops) on the color shading, tint, contrast, and brightness controls this provides a good starting point. If such is not the case select an average setting that looks good on the screen as the beginning point. A 20 frame roll of film should be exposed using two or three different graphics. Aperture and shutter speed should be bracketed. This can be accomplished by starting with a shutter speed setting of one second and an aperture setting of f8. Make one exposure at that setting and then, keeping shutter speed constant, shoot exposures at f4.5, f5.6, and f11. Then, with the same graphic, repeat the exposures with shutter speed held constant at a half second. Repeat this process with a different graphic and/or a variation of settings on the display. Make sure a test of light colored vs dark colored background is carried out. If careful details are recorded of the set-up, film, exposure, and display settings it will be possible, when the slides are developed and analyzed, to determine a standardized procedure which will ensure success during future sessions.

Don't hesitate to attempt to make your own color computer generated slides, as they have the potential to revolutionize the manner in which you communicate educationally. □

MEDIA PERIODICALS

MEDIA & METHODS, 21:3, November 1984

McKenzie, Jamieson A. "The future isn't what it used to be: Videotex in on the way"

Hunter, C. Bruce and Allen L. Wold. "Basic guide to the complete educational computer"

MEDIA IN EDUCATION AND DEVELOPMENT, 17:3, September 1984

McCormick, Bob. "Prospects and problems for China's TVUs"

Hosie, Peter and Tony Dean. "TV for isolated students in Western Australia"

Hewitt, Clive and Jack Cairns. "Catching up with technology-distance training for industry"

Rodwell, Susie. "A world communications crisis?"

Hart, Andrew. "Not just a bit of an extra"

Higgins, John. "The computer and text"

PROGRAMMED LEARNING & EDUCATIONAL TECHNOLOGY, 21:2, May 1984

Milne, J. A. and J.S.A. Anderson. "The microelectronics education programme-dissemination and diffusion of microelectronics technology in education"

Lloyd, G. "A model for the development by industry and commerce of multi-media resource packs for use in education"

PROGRAMMED LEARNING & EDUCATIONAL TECHNOLOGY, 21:3, August 1984.

Oxley, Alan. "Computer-assisted learning (CAL) of structural analysis"

Wyer, Jo-Anne. "New bird on the branch: artificial intelligence and computer-assisted instruction"

Thompson, Vincent. "Information technology in education and training: the CET view"

Oliver, Elizabeth. "The development of a computer database for education"

Emms, Stephen J. "The M & C's skillcentre CBT project"

Vinegrad, M.D. "Learning by example: a CBT approach"

Morrison, R.K. "Computer-based learning-the way ahead"

Telem, Moshe. "Computer crimes in schools"

Dunn, Seamus and Valerie Morgan. "Aims and interest groups in educational computing" □

MEDIOGRAPHY

WHAT DO YOU MEAN, WHAT DO I MEAN (CASE STUDIES IN COMMUNICATIONS) Motion Picture SAL/-MARLIN 1976 18 min., sd., col.

The focus here is the way we see ourselves and the way we see others.

WITHOUT WORDS: AN INTRODUCTION TO NON-VERBAL COMMUNICATION Motion Picture PH/Marlin 1977 23 min., sd., col.

The effects and interation of non-verbal barriers on communication are presented here.

YOU'RE NOT COMMUNICATING Motion Picture CF 1980 20 min., sd., col.

The focus of this program is that communication is a two way process and an understanding of the process improves communication. □

MEDIA NEWS

dards introduced as a result of the new technologies
• improve the quality of education provided in respective jurisdictions

Seven themes will take advantage of the breadth of experience brought to the Congress by the international participants and speakers. These seven themes are:

Teaching & Learning

Theories of learning, new designs for curriculum, teaching about and teaching with computers will be discussed as this theme focuses on the interaction between the new technology and the classroom.

Management & Technology

The challenge inherent in managing new technologies affects everyone in the educational community. Administrative applications — financial reporting, scheduling, communications, data banks, office functions — will undoubtedly be explored by congress participants.

Employment & Training

Technology is creating new opportunities for employment and career preparation. An indepth look at these opportunities in the context of the changing workplace will be offered.

The Future Society

Congress participants are promised a crystal ball into the future, looking at how technology will affect our work, our play, culture, the environment and how we will get along with each other.

Innovations & Applications

Hardware and software take center stage in a world-class exhibit and a variety of learning sessions designed to demonstrate innovations in technology and unique applications to education.

Special Needs & Interests

We will look at unique applications to serve the specialized needs of individuals, including the education of the physically and mentally handicapped and the use of technology as a means of bringing people together.

Policy & Planning

The effects of technology on human values and goals; questions of privacy, control and ethics in an information society . . . these are all part of a multi-faceted dialogue aimed at "rounding out" the issues of education and technology.

By dividing the World Congress into themes, the face-to-face nature of a smaller conference will be combined with the advantages of diversity that characterize a larger gathering.

As part of the "Innovations and Ap-plications" theme, the Congress will feature a world class exhibit of high technology equipment and services relating to education and culture from around the world.

Early, discounted registration is scheduled for the fall of 1984, with complete program information available in September 1985.

Questions concerning the World Congress on Education and Technology may be directed to the Congress Coordinator, British Columbia School Trustees Association, 1155 West 8th Avenue, British Columbia, Canada V6H 1C5. Telephone: (604) 734-2721.

Film Showcase April 15-19, 1985

Objectives

Since the first FILM SHOWCASE In 1970, this event has been Canada's major marketplace for 16mm non-theatrical films. It provides a unique opportunity for 16mm film producers/distributors to exhibit their newest films and video product for library personnel, educators, film society representatives, government officials and business people, all of whom have financial leverage in recommending purchase, lease and/or rental of 16mm film and video product. *Film Showcase* is not a forum for film workshops or screen education seminars.

Location

FILM SHOWCASE will be held at the YMCA Conference Centre, Geneva Park, on Lake Couchiching, near Orillia, Ontario.

Program Format

Each day, twenty nine distribution companies will be operating 29 screening areas simultaneously. This year all twenty-nine distributors will be attending for the full week (Monday-Friday).

Further Information

If further information is needed, or if you have any special requirements, please contact:

Jean Harding, Co-ordinator
FILM SHOWCASE 1985
22 Bardwell Crescent
Scarborough, Ontario M1R 1C9

(416) 979-5097 or (416) 757-9517 □