THE AUSTRALIAN JOURNAL OF
EDUCATIONAL
TECHNOLOGY

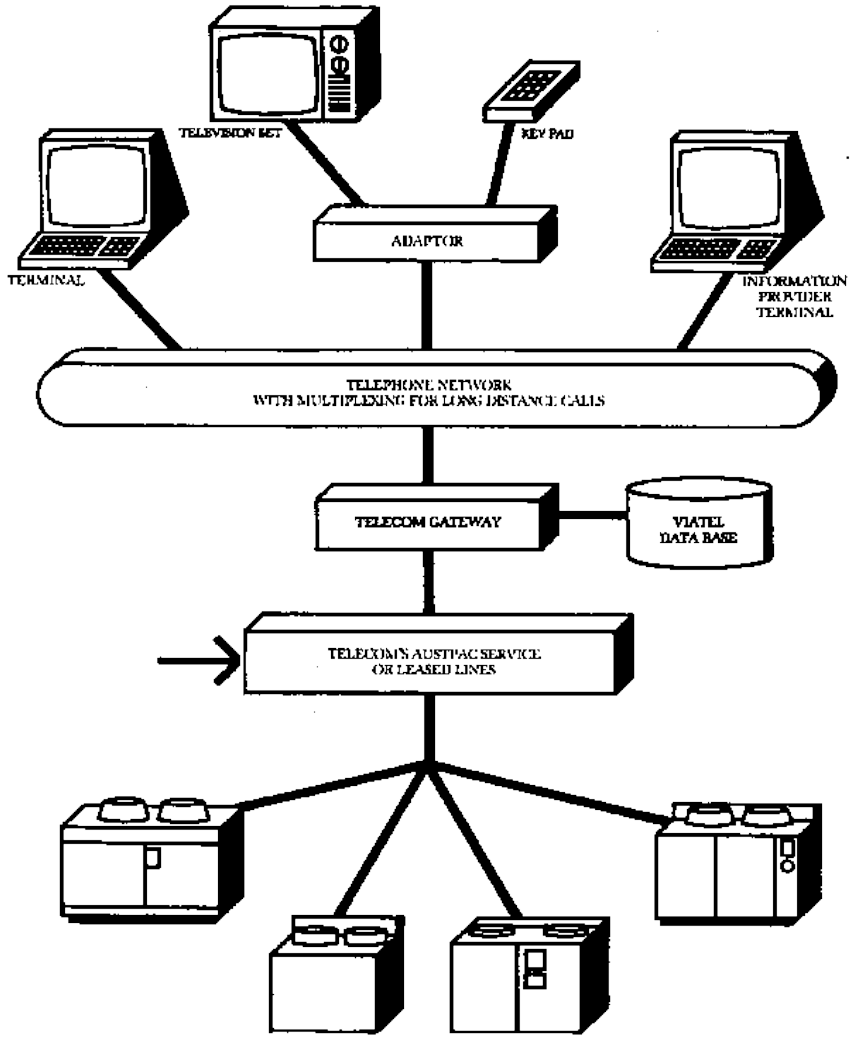
Promises, promises - Viatel and education

Peter Hosie
Education Officer
Audio-Visual Education Branch
Education Department of Western Australia

VIATEL is the term coined by Telecom Australia to describe the forthcoming computer-based information retrieval system. A centrally based computer will be used to store information and the existing telephone network used to distribute that information. Anyone with a specially adapted television set, keypad and telephone will be able to use this Public Database by the end of 1984.

Access to the stored information will be gained by keying in numbers on a simple-to-operate keypad. No previous computer training will be needed to operate the system which is based on the British Prestel, operating since 1979. Videotex is a two-way system, with virtually unlimited page storage and is 'user-friendly'. Finding information will be a straightforward process. The USER (public) will be able to enter into many types of transactions with an INFORMATION PROVIDER (ie. a source responsible for entering information into the system). Telecom itself will not provide much actual information on Viatel. Private organisations and individuals will supply information. and decide whether or not they wish to charge a fee for the use of information. Telecom, through a GATEWAY system, will act as the facilitator of information exchange between USERS and PROVIDERS. The GATEWAY system allows easy access to a diverse range of data bases, containing large amounts of information, not presently available to computer USERS.

Table 1: Schematic diagram of the Telecom gateway system (courtesy Telecom Australia)



Making reservations at theatres or hotels will be possible. Sending, receiving and requesting information, as well as purchasing goods and banking, will be among Viatel's many applications. Running a travel agency without access to Prestel's updates of rail, flight and shipping information is now virtually impossible in Britain. Putting an essential service on Prestel - the British Rail timetables - was a turning point in acceptance of the service. It will probably also be necessary to provide

information about an essential service, such as rail timetables, to get the Australian system off the ground. In France, a scheme to supply free videotex terminals, instead of directories, to telephone subscribers in three million homes, by 1982 began in 1979 (*Screen Digest*, 1984, p.1). The eventual target is to supply 30 million terminals, called Minitels, by the 1990s. Home banking facilities are now becoming widespread in countries with videotex systems.

Australia's only present full-time videotex consultant, Paul Budde (1984, pp. 87-88), sees new opportunities being provided by VIATEL for personal computer owners such as:

- Downloading of software being from videotex data bases.
- Use of personal computers as videotex terminals.
- Electronic mail exchanges between personal computer users.

Other commentators on the possibilities of the videotex system, such as Quigley (1984, p.91) suggest that with 'the growing computer literacy amongst children, perhaps it will be in the education area that videotex will experience its greatest success'. Such a claim is dubious. Like many of the new information technologies, the promise is great but the immediate reality does not quite measure up.

International and (limited) Australian experience indicates three possible applications of videotex to education: direct teaching, the use of data bases as sources of information and improved educational delivery through enhanced administrative systems.

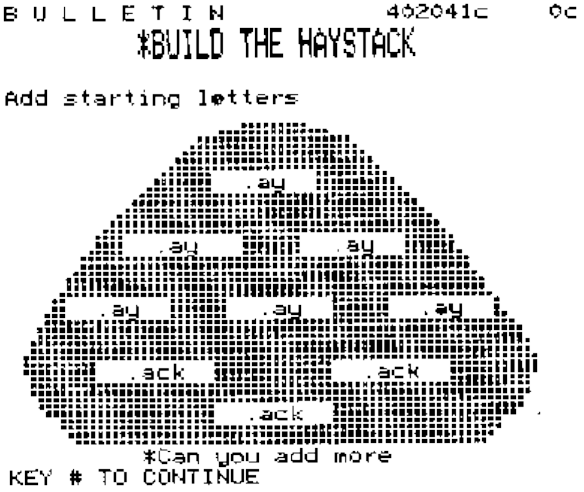
Large amounts of public, up-to-date and free information will probably be available on VIATEL through a commercial or public provider. Other free data bases may be available to users. As Thompson (1982, p.120) observes: 'While interactive uses of the system are in their infancy, major use of Prestel by education is to access the existing Prestel database'. This is understandable, because videotex is intended primarily as a public information provider. Everyday statistics and stock market news, weather and exchange information will be readily accessible. Manipulation of current data could provide a vital new approach to economics, business studies or geography. Tertiary institutions in Britain are using Prestel to give additional guidance in the selection of careers by providing specific information about tertiary courses. The Victorian (Harding, 1983) and Western Australian (Dewsbury, 1984, p.2) agricultural demonstrations are excellent examples of interactive data bases containing useful everyday information.

In Britain, the Council for Educational Technology is experimenting with a means of distributing software directly to homes or schools via the telephone system, called TELESOFT. The complete results of this

experiment are not yet available, but preliminary findings suggest that the perennial computer education problem of insufficient quality software will continue to be a stumbling block. What is the point of having a good, cheap system of software distribution when there are not enough worthwhile programs to distribute? Information available on the existing Prestel database is generally aimed at commercial and business users. Hopefully, the lure of a large-scale market will stimulate the design of reasonable quality educational programs. If an organisation can provide them on VIATEL, wide usage is likely.

It is estimated that most of the material (97 percent) now available in Britain is one-way. Quality design, preferably complementing the curriculum, is necessary. The interactivity of such software is paramount if students are going to be actively engaged in using it. Demonstration material recently designed by the New South Wales Correspondence School shows some promising interactive capabilities. This system is potentially an important application of videotex to distance education.

Table 2: New South Wales Correspondence School lessons

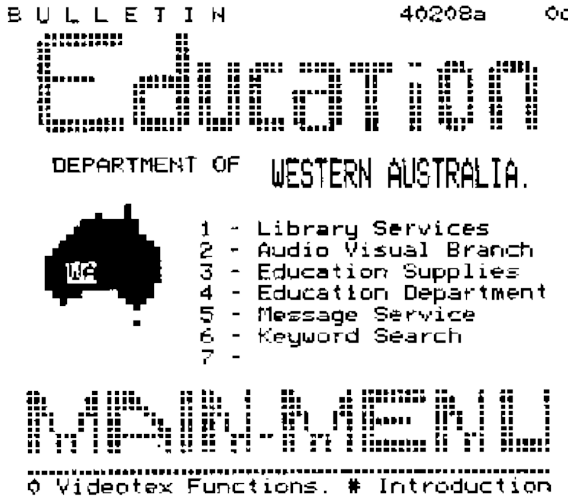


Experience has shown that the development of quality software is a costly business. A coordinated effort by all education providers in order to attain economies of scale, it is necessary to spread the cost of course design. For this to happen, curricula between States need to be transferable and exchangeable (Hosie, 1984), this is not the present situation. Subject curricula which have a core of similar information (such as physics or mathematics), could be planned on a national scale, instead of every State 'doing its own thing'.

Interactive programs need to be highly formatted so that 'window programs' can be written in such a way that data are in a form suitable for collection. Window programming for videotex is not a part of the standard videotex offerings but a separate program initially developed by International Computers Ltd (ICL) and now offered more widely. The use of 'keyword' search has the potential when developed, to assist in the location of information. At the moment, however, features like 'keyword' and 'reveal' are presently well below the sophistication of similar priced microcomputers.

Teachers could, at least in theory, improve the presentation of lessons by locating resource materials which are otherwise difficult and time-consuming to find. Information bases for libraries could be broadened and requests processed more quickly. Also, the cost savings achieved by not having to purchase annual directories would be substantial. However, the effective introduction of Viatel-based learning and information retrieval will demand a considerable commitment of staff time. A financial break-even point will be reached when the access time for multiple users exceeds the cost of purchasing such directories for local use.

Table 3: Education Department of Western Australia's main menu



At the moment the greatest educational use of videotex appears to be in the area of assisting administration. The Education Department of South Australia has already run videotex trials in administrative applications (Dunnet, 1983). The Education Department of Western Australia has also

set up demonstration material; the author of this article assisted in the design of this material. Many uses, such as supplying orders, library searches and updates of acquisitions are some of the potential uses isolated by the South Australian trials. An 'electronic mail' service, for example, can get messages to people quickly and conveniently.

Apart from winning the hearts of tree conservationists, there is also potential to rescue thousands of educational administrators presently drowning in a sea of paper. Rapid exchange of information is possible. However, only information of a general nature is suitable for running on the system, because it is neither particularly secure nor confidential.

Among the exaggerated claims for videotex is that of its value for purely educational purposes. Even the most convincing 'technoenthusiast' could not help but be concerned about some of the shortfalls of the present technology. For example, the speed of page change is quite slow. People accustomed to the almost instantaneous page change of a microcomputer quickly become frustrated with the rate at which information is presented. Related to this problem is the reliance on hierarchical indexing. This is a simple but slow and awkward method of getting to the information one is seeking. Admittedly, if the user is familiar with the system it is possible to go directly to a prescribed page. The system promotes the use of retrieval skills and use of indexes necessary to locate information. It is a so a prime example of how old and inefficient linear design concepts are being applied to new technology.

Surprisingly, videotex cannot 'scroll up' as most microcomputers can. Pages have to be changed in linear progression at the snail pace previously mentioned. The changes have to be made fairly often because, as most of the literature on the subject neglects to explain videotex pages have a low 'bit ratio'. It is possible to get only 700 characters (letters or numerals) - or the equivalent of a quarter of an A4 page - on the screen. The colours are full and the image sharp if a monitor is used. The colour fades noticeably when using a standard TV receiver. The Prestel-based alpha-mosaic graphics (sometimes called 'Lego' graphics) are low in resolution, although graphic enhancement is soon to become available. Fortunately, putting your own material on the system and editing it into shape is a relatively straightforward process. Developments in related commercial applications of videotex show promise for education. The recently developed Philips interactive videodisc is an exciting Viatel compatible peripheral which is proving popular with travel agencies. The system combines the vast information base and user friendliness of videotex, with the visual brilliance of videodisc, to provide 'interactive video brochure'.

Videotex programs, suitable for downloading quickly on micros, require a special modem (75 baud out and 1275 baud in) and software to emulate the Prestel terminal and decode telesoftware. These cost an estimated $A300-$A400 for a Commodore 64. The BBC Acorn, a microcomputer approved for purchase for primary schools by the Education Department of Western Australia, has the necessary modem and software to emulate Prestel incorporated into the CPU. Such a capability will no doubt be offered as an option on a wide range of micros in the future. Moreover, the advent of cheap terminals ($US200) in the United States combined with cheap data storage and access has reportedly led widespread usage.

When used in conjunction with the Telecom Packet Switched Network, VIATEL will provide a cheap (for the cost of a local call and $10-$12 hour connect fee) means of distributing software. Fees for accessing private data bases, via the Telecom gateway, are yet to be announced. The cost of using private information sources will be one of the factors determining whether education can afford to use the system. MICRONET, a service for British home computer users, has reportedly become Prestel's fastest growing service (Inglis, 1984, p.2). For L8.00 ($A12) a quarter it will be possible to access Prestel's new service - MICROCOMPUTING. A range of services, including MICRONET and CB-like chat facilities, will be offered by MICROCOMPUTING. The cost of installing another telephone line ($A150), the annual rent on the line ($A190), Telecom gateway charges ($A10 per month), private data-base fees (such as computer time and house access charges) - when combined with the cost of a terminal - will cause many educational institutions to think twice about using VIATEL immediately. Also it is unlikely that the purchase of a dedicated terminal - costing around $1500 for a Sony keypad with monitor is justified, considering the small amount of administrative use it is likely to get. However, the recently released Tandata terminal (which can be used with a normal television) does provide some scope for experimentation.

The assertion that technology has its own imperatives has already become a cliche. While it seems obvious that educationalists cannot afford to ignore developments in information technology, it is crucial that realistic expectations about the application of this technology, to education are held. Videotex terminals are unlikely to be sitting on each student's desk for some time. Adaptation of microcomputers to access freely available information seems a possible use of VIATEL for education. When enough software of sufficient quality is available, and the technology improves to APLPS standard, wider educational usage is more likely. The availability of a reasonable pool of well designed software could provide the catalyst for wider acceptance. Changes in the state of the art will no doubt make the technology more attractive to educationalists.

Anyway, as Abramson (1984) points out, administrators usually lag five to ten years behind the technological innovations affecting them.

The timing should be just about right. By the time videotex is accepted, it will be a greatly improved (and cheaper) version of the present offering. Nevertheless, there is still a potential for developing the present technology for educational use.

References

Abramson, N. Transient Technology - Satellites and Computers in the Year 2000. Octagon Lectures, Perth, June 1984.

Budde, P. Mass Communications Is Closer Than You Think. *Today's Computers*, May 1984, pp.87-88.

Dewsbury, R. "How to garden by computer". *The West Australian*, April 7, 1984, p.2.

Dunnet, C. *Videotex*. Educational Technology Centre, Education Department of South Australia, 1983.

Harding, W.J. *Developments In Computerised Information Systems In Agriculture*. W.A. Department of Agriculture, Melbourne June 1983.

Hosie, P. J. Coming Soon - Videotex. *Avenues*. Education Department of Western Australia, Vol.1, (3), p.5.

Hosie, P. J. "Share and Share Alike" (Unpublished paper).

Inglis, A. British Telecom introduces Prestel Micro-computing. *Educational Technology Newsletter*, June 1984, pp. 1-2.

Inglis, A. *Screen Digest*, February 1984, p.1.

Quigley, C. Videotex will Grow With Our Kids. *Today's Computers*, May 1984, pp.91.

Thompson, T. Videotex in Education. *Media In Education and Development*, September 1982, pp.118-120.

Please cite as: Hosie, P. (1985). Promises, promises - Viatel and education. *Australian Journal of Educational Technology*, 1(1), 39-46.
http://www.ascilite.org.au/ajet/ajet1/hosie.html