

# Providing for Lifelong Affiliation with Distance Education Institutions and the Feasibility of Doing So with Personal Computer Communications

by Gary M. Boyd

## Introduction

In our rapidly changing and deeply compartmentalised world people have a growing need for opportunities to reenact personal affiliative performances; to reiterate meaning and to reaffirm identity. People also need on-going access to 'state-of-the-art' information in all the professions. Universities with deep historical roots and leading edge research can and do meet these needs for certain minorities. Distance education institutions are doing a good job at providing more open access to basic courses of studies; perhaps they can also adapt to meet these life-long affiliation and knowledge needs.

## Innovation

Innovations occur when there is the happy conjunction of four factors: (a) pressing problems, (b) solution oriented people, (c) choice opportunities (e.g. staff replacements, additional resource sources), and (d) new solutions looking for problems to which they apply. March and Olsen (1976) argue that it is the conjunction of these factors rather than "rational planning" which brings about actual innovation.

## Problems

For individuals in our society the perennial problems of meaning, purpose and opportunity are acute. The problem of meaning is also the central concern of ethnic and religious political-action groups. The survival and growth of organizations which provide both security and opportunity is a central concern of their members. Distance education institutions are organizations serving their employees and their students (Indeed many people who work for such institutions also study through them).

## The institution's problems

Most open learning or distance education

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Organizations are publicly funded. They need to demonstrate the legitimacy of such funding by attracting and retaining large numbers of students. What happens is that particular areas of study (e.g., computers, small-business management) attract many students who take a few courses and then disappear. They may return later to complete a degree or to study some other newly fashionable subjects. But they may not. Except where enrollment is artificially restricted for political reasons as with the UK Open University, large fluctuations in enrollment make distance education planning difficult. Because the political legitimacy of these organisations depends on the size and kind of clientele they are seen to serve, large variations in enrollment numbers and kinds make it difficult to maintain successful claims on public funds over the comparatively long time periods needed for producing and delivering packaged courses. The appropriate scale of permanent institutional staffing is also made difficult to determine by large changes in enrollment (Rekkedal, 1982).

## The clients' problems

The nominal reason for most people's participation in distance education is to improve their work status. Two other reasons: to gain knowledge for its own sake, or for social contacts, each account for about ten percent of the students (Holmberg 1982). Distance learning in particular is chosen over other means mainly because it enables students to budget their time more efficiently and more pleasantly. There is also a particular appeal for those who like solitary study.

It is very difficult to determine whether a deeper search for the meaningful life underlies the stated objective of career advancement. In European and North American society most men and women answer the question "Who are you?" by naming their job. The search for identity and meaning is expressed as a search for a better job, or perhaps still even as an attempt to try and find some "true" vocation. Certainly the fact that most distance education students say that they pursue their

studies in order to improve their work opportunities, does not preclude the deeper quest for affiliative meanings which add up to a "self-esteemable" identity being operative in distance studies. Coltman (1983) notes that impending loss of study often promotes identity crises.

The main source of motivation for continuing with distance study, aside from self-confidence, is according to Bowlay's work in Australia (Bowlay 1979), "perceived support from significant others". Some of the "significant others" are tutors and whichever other distance education students have become friends through local study centres or summer schools. Means for maintaining contact with these people should therefore increase the probability of continued course taking. Professionals possessing high status in the work field of the student are also "significant others". They will encourage the worker to take courses or use other facilities of the institution if they are affiliated with it themselves and if it is seen to be doing a good job.

These higher status practitioners also need continuing affiliation with organisations which give them critical evaluations of the latest research results and practises in their fields. To some degree this is provided by professional associations. It is also provided by many universities both informally through contacts between professors and former students, and formally through special extension services. Distance education institutions are now at the place where further undertakings along these lines appear to be indicated for the reasons given above.

## People and Opportunities

March and Olsen's second and third factors are of necessity peculiar to particular institutions, places and political situations.

Fortunately most distance education organisations are fairly young so that many of the staff have flexible attitudes toward change. Unfortunately some institutions are already heavily bureaucratised, and committed to rigid job-description contracts with staff unions. Even if contracts allow for the closing of certain operations

on ground of financial exigency, often the severance benefits involved mean that almost no resources can be re-allocated to newer more vital functions.

## Inadequate solutions

If some means were to be found which would encourage frequent continuing contact between students and the distance education institution even when no courses per-se are being taken, the problem would be at least half solved. Of course, alumni associations do play an important role in maintaining contact between graduates and universities. But many distance education students don't graduate, they just suspend studies. Television and radio broadcast messages do attract and sustain interest for many students, and newspaper display advertising is also somewhat effective; but not effective enough.

The telephone is, in North America at least at present, the most convenient means for communications between students and institutions. The telephone has some major disadvantages. It is preemptory in its summons, and therefore calls forth various forms of telephone protection, such as non-answering machines, which reduce its usefulness (we have all been caught in little inadvertent games of telephone tag).

The mails are slow and expensive. New computerized letter generating and addressing programs do facilitate correspondence, but not enough.

The broadcast media (TV/Radio) are cheap, and effective attention attractors, but they are one-way channels and altogether lack privacy. Newspaper columns and display advertisements are also cheap, but suffer from the same limitations as broadcasting. All of these "mass" media need to be complemented with private fast personal return and interaction channels. Teletex may provide some capability of the kind needed if it ever becomes widely enough available. At present it is not much more than a curiosity. NAPLPS (Telidon) videotex is slightly more widely available, but is still preposterously expensive (Only a requirement that NAPLPS decoder/encoder chips be built into every TV set in the way that UHF tuners are now required to be built in, will open up the videotex world (Godfrey and Chang, 1981).

Another advantage of computer correspondence and computer conferencing is that it can be asynchronous. People participate at whatever odd moments they choose. That this medium is acceptable, and even highly appealing, to large numbers of people is attested to by the success of the Special Interest Groups, and 'CB' channels on the CompuServe and Source computer utilities (Bowen and Peyton, 1984). What we have here is a cheap fast pleasant new way of communicating which seems very well suited to persons' needs for continuing educational affilia-

tion. Since telematics are cheap flexible and easily configured to handle very large numbers of communications this would appear to be the basis for an adequate solution from the institutional standpoint as well as that of the students.

Telematic communications are self-auditing. A complete record of how many people are participating and where they are located is readily available. It can be used by the distance education organisation as a basis for subsidization requests. If the students pay for the messages from them to the institution then the amount of those payments is also an indication of the legitimacy of the enterprise, in the sense that token payments for public transit, or for medicare serve this end.

## Conclusion

There is currently a realisation that student support services are of equal importance to the packaged and broadcast learning materials in determining the success of distance education schemes (Stewart, 1983). Counselling, and the provision of arrangements for continuing interactions between students and faculty, and among students are vital parts of the support service. At present they are expensive and difficult to provide. A prototype experiment in carrying on these functions with the aid of personal-computer communications should be undertaken now.

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TABLE 4

| STUDENT RESPONSE TO THE USE OF TELIDON DELIVERED TESTS IN COURSE IN ORNITHOLOGY N=15         |   |   |
|--|---|---|
| 1. Is this the first time you have taken a test using Telidon?                               | Moderately easy to use<br>Yes<br>No   | 100%<br>100%<br>-                           |
| 2. Did you have any problems with the system?  | Yes<br>No   | 53%<br>47%                                  |
| 3. What was your reaction to this technology?  | Very easy to use<br>Moderately easy to use<br>Difficult to use<br>Very difficult to use         | 40%<br>60%<br>-                             |
| 4. Was the test...   | too long?<br>too short?<br>right length?<br>no answer?  | 20%<br>27%<br>33%<br>20%                    |
| 5. What was your impression of the graphics used?  | added significantly?<br>useful<br>not very useful<br>much too slow?                             | 33%<br>60%<br>7%<br>-                       |
| 6. Was the display time...   | too slow<br>acceptable<br>very good<br>inaccurate<br>some uncertainty<br>acceptable<br>accurate | 20%<br>73%<br>7%<br>7%<br>33%<br>47%<br>13% |
| 7. How did you find the graphic depiction of content?  | Yes, very<br>Yes, fairly<br>No, confusing<br>uncertain  | 27%<br>60%<br>7%<br>7%                      |
| 8. Was the wording of question easy to understand?   | Yes<br>No   | 93%<br>7%                                   |
| 9. Would you like to have access to this material during the semester as a self-testing aid? | Yes<br>No   | 93%<br>7%                                   |

### III. Discussion and Implications

While the two uses of the Telidon system reported here (agricultural extension and instruction) may appear unrelated to distance education, it is in combining the findings of both studies that some guidance may be offered for distance education planners.

The agricultural extension field trial with GRASSROOTS revealed that it is possible for a university to collaborate with a commercial electronic publisher to their mutual advantage. The University was able to get up to speed in a very short period of time without the capital and operating expense associated with a major database delivery system and network. The system operator gained access to a region otherwise difficult to enter. It also gained experience in the design of action task software not then in use by the company. Ongoing working relationships were established which make it possible, subject to agreement on specific applications, for the GRASSROOTS system to serve a number of distance education projects. The existence of the GRASSROOTS network, relative ease of access, and economy of use should not be overlooked by other institutions interested in this technology for distance education. The analogy here is using the railway company to transport goods rather than building your own railroad or highway system.

Secondly, from the agricultural field trial

emerged confirming evidence that Telidon is an easy-to-use home service for otherwise inexperienced computer users. This confirmation was also received from the specific on campus instructional applications. Furthermore, while there were technical reliability problems, they are of sufficiently short duration or limited frequency as not to mar the general acceptability of this service for home based information access to extension and distance education resources.

Two major hurdles, however, were identified in the agricultural field trial which are of intense importance for distance education. The first is the entry cost of the terminal. A Telidon dedicated terminal with decoder, monitor and 1200 bps modem costs in the vicinity of \$2,000 and is a single purpose device. An IBM PC type microcomputer with the necessary software decoder, colour board and modem will cost in the vicinity of \$5,000 although the educationally priced IBM PC Jr can be put in service with a Telidon configuration for less than \$2,000. The microcomputer decision will, for many potential distance education users, be based on more broadly defined needs than for the use of Telidon access. With costs of this magnitude and the elusive low cost TV Telidon adaptor not yet in sight one is led to conclude that the population of home access terminals is not yet sufficient to warrant major investments in creating Telidon materials for distance education. "How will the students access the data?"

The second major hurdle is regional in significance and has to do with the availability and cost of telecommunication services. In parts of Western Canada telephone line charges established for Telidon by the Government operated telephone companies are extremely reasonable at 5 cents per minute in Manitoba and 6-8 cents per minute in Saskatchewan. In contrast, Eastern Canada has no such provision with regular voice tariffs costing at least 50 cents per minute. In addition rural phone lines are frequently party lines and the attachment of data terminals to such lines is not permitted. The arrangement Infomart has made with Bell Canada for a special INET rate of 25 cents per minute in dialing area 519 is a move in the right direction but its cost structure will inhibit all but short access sessions by the majority of individual users. The recent breakup of AT & T in the United States is resulting in rate increases for some institutionally provided distance education services which threaten the continuance of these services at least in present form. Since Canada is moving in a similar direction with telecommunications policy, potential applications of Telidon to distance education should examine this dimension carefully and then proceed with caution.

From the instructional applications reported it can be seen that there is poten-

tial for Telidon as an effective, user friendly and student accepted system. If the terminal problem and the costs of telecommunication can be resolved within a specific distance education project than our evidence suggests that Telidon is the only presently available practical method of displaying detailed graphic and textual information using a range of colour. It appears to provide intrinsic motivation to students when properly used.

The Guelph trials, unlike the educational television panacea projects of the 1960s, undertook to limit the scope of the application of Telidon to one or two specific aspects of the course. The project team worked with an educational philosophy which sought to emphasize student performance and output rather than teacher input. Most earlier media approaches have concentrated on information input, i.e. the more senses you use the more you can share in. Knowledge of what is expected, student practice and awareness of achievement through feedback on performance seem to the author to be the most fruitful areas for improving student learning. The Keller PSI method and other approaches which emphasize learner responsibility, especially in post secondary and distance education, have demonstrated that such improvement is achievable. These methods, however, are costly in providing intensive and frequent feedback and often result in compromises which reduce the immediacy of the feedback and hence much of its educational power. It is in this era where the Guelph trial concentrated its study of Telidon and where its initial success occurred.

### Conclusion

The potential for Telidon in distance education lies more in the quality of the instructional design decisions than in the technology. This has always been the case with educational media but the novelty of another system can blur one's vision of what comes first, purpose and plan or tool. There are many existing forms in which course content for distance education can be delivered. The test, the audiocassette, printed or film slide illustrations, all can deliver content at a fraction of the cost of Telidon or other computer based systems. What they cannot do as effectively nor as efficiently is provide students at a distance with frequent short tests of learning achievement and immediate feedback. It is in identifying similar limited segments of distance education delivery where Telidon can make a useful contribution.

**NOTE** Based on the difficulty of serving larger numbers of students on campus from a distant database, the University of Guelph and Tayson Information Technology have developed a standalone IBM PC based system, VITAL (Videotex Integrated Teaching and Learning System for Education and Training).

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although not all, of the work commissioned is expected to be regionally informed, nationally significant case studies.

Small research grants (\$500-1000) will be available to selected individuals. Opportunities will be available for contributors to attend coordination meetings and/or workshops/symposiums in August, 1986, Expo year in Vancouver. The project will publish selected materials in either one of four teacher/learning booklets or a monograph. Selection of contributors will be made in January 1985.

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learning system: Bits and Bytes (Don Robertson, TV Ontario)

Distance Education: the Nigerian experience (Francis Z. Gana, Ministry of Education, Lagos)

Format: Canada's National audiovisual information system (Donald Bidd, National Film Board, Montreal)

Satellite Communications: Past Present and Future. (W. Terry Kerr, Department of Communications, Ottawa)

Telidon: its use in Distance Education (Dr. Robert A. Abell, Alphatel Systems, Edmonton)

Among the many AMTEC members attending the 1984 ICEM conference were president Bill Hanson, immediate past-president Barry Brown and president-elect Ed Crisp. President Bill addressed the session on the morning of the second day of the conference, bringing greetings on behalf of AMTEC and describing its function to the interested delegates.

The chairman of the ICEM 1984 Conference was Hans Kratz of Alberta Education. (Many will remember him as chairman of the highly successful AMTEC Conference held in Edmonton in 1979.) Hans took care of every detail including the weather, which was perfect. After this experience let us hope that the Council decides to meet again in Canada before too long. ICEM was founded in 1950 under the name of International Council for Education Films; the name was changed in 1966 to International Council for the Advancement of Audiovisual Media, and in 1980 to International Council for Educational Media. ICEM enjoys Consultative Status, type A, from UNESCO, through the International Film and Television Council, and maintains a secretariat in Paris, France. □

### ICEM CONFERENCE

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tain, Nigeria, Switzerland and the U.S.A.

The theme of this year's conference was "Educational Technology to Enhance Learning at a Distance". The program for each day consisted of a number of speakers followed by a symposium involving the speakers for that day. All of the program events were plenary session, with simultaneous translation between English and French being provided over headphones. A wide variety of topics was presented along the theme of Distance Education: Think before you leap: How to reduce problems in Distance Education (Dr. Bill Winn, University of Calgary)

Extending opportunity: Telidon technology in Vocational Education (Amelia Turnbull, Alberta Correspondence School)

Educational Teleconferencing (Dr. G. Barry Ellis, University of Calgary)

Educational Technology to enhance learning at a distance: a systematic approach (Dr. Ron J. McBeath, San Jose State University)

New Realities in Educational Communications (Peter L. Senchuk, ACCESS Alberta)

Clearinghouse for Computer Software (Dr. S. Jim Thiessen, General Systems Research Ltd., Edmonton)

Technology in Distance Education: Improving Man's humanity to Man (Dr. John S. Daniel, Laurentian University)

By Making too many technological turns, one ends up going around in circles (Andre Hebert, University of Quebec)

The TV Ontario Academy on Computers in Education - a Canadian distance-

### COMPUTER COMMUNICATION

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