The More Things Change… memoirs of a computer-based educator

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This paper, and the invitational ASCILITE '96 keynote presentation which it summarises, provides a personal reflection on thirty plus years of involvement as an educational technologist developing teaching and learning materials.

My personal evolution as a developer from tape-slide presentations and spirit duplicator produced, paper-based materials to computer-based, interactive multimedia on CD-ROM and the World Wide Web is probably not particularly interesting. I'll attempt, therefore, to emphasise trends and implications—the iterative nature of media developments and the slow rate of real change.

In particular, I want to highlight the superficiality of the changes in media technologies, the interdependence of media specialists and users in the learning process, and the absolute importance of managing change.

> The genius of a good leader is to leave behind him a situation which common sense, without the grace of genius, can deal with successfully. (Walter Lippmann: Roosevelt Has Gone, 14 Apr 1945, in *Bartlett's Familiar Quotations*, 14th Edition)

1. Getting Things Done: These are the hands…

This morality tale starts in 1964 when the author was in his first year of teaching, although it could have started much earlier with the design and preparation of tape-slide presentations for a hobby group.

The setting is a year seven classroom and the author is helping students who cannot even read at a year three level to follow the day's lesson in their reading books. All are listening intently to the author's voice as it comes from a tape recorder at the front of the class. The reading lesson was taped on his personal recorder at home the preceding Sunday; due to the lack of adequate school resources, the same personal recorder is used for playback. This is audiovisual technology during an era of afternoon tea and bake sales (in Australia it would be chook and lamington sales) to raise funds for 'basic' school equipment.

A couple of years later, we find the author attending classes in the daytime and working a midnight to 6:00 am shift in the university photography lab to prepare a series of transparencies from photographs taken through a microscope. The lecturer for whom the work is being prepared failed to come in to the Audiovisual Services unit until the day before he needed them for his class. This is appropriate work experience for an educational technology student and the author's 20-30 hours per week postgraduate assistantship requires a 'will do' attitude.

A year later we find the author back as a teacher helping a colleague stretch his limited teaching budget. With roughly six classes of 30 students, all of whom need to know about dissecting frogs, they spend half the budget on a roll of black and white film plus a few sheets of photographic paper and litho film. Enlisting the after-hours help of an enthusiastic student from each class, one of whom dissects the frog purchased with the other half of the funds, they produce a set of wall photos and 8" x 10" transparencies for use by the biology teacher. This is local development of multimedia resources on a low budget with the bonus that the students involved can answer questions from their classmates.

Moving forward to 1970, the setting is a keynote presentation for the American Library Association annual convention in Chicago and the topic is developing resources for drug education. The room is in darkness and the presenter is silent while coloured images (35mm still photographs and graphics showing library resources, lists, and those possessed by drug habits) move across a super-wide screen at the front of the 1200 or so seat Convention Centre and the haunting, but almost deafening, sounds of a Gregorian Chant fill the air.

Peering through the darkened room at the projection stand, we find the author (obviously a much younger incarnation as a postgraduate student) poised over a bank of slide projectors and fade-dissolve unit controls which he is manipulating in a pattern synchronised to the music. Incidentally, in keeping with the time and place there is a row of workmen standing idle at the back of the room—union rules require an electrician in attendance for every piece of equipment in the conference hall. This is multimedia with a human element.

Fast forward to 1972 and a community-based cable television station in Calgary where the author is producer, director, designer, graphic artist, researcher, and relief camera operator for the multi-site live broadcast of a two-day long urban planning simulation involving the 'walk-in' or 'phone-in' participation of hundreds of viewers for an annual conference of the Community Planning Association of Canada. This is interactive multimedia with a human element and is replicated a year later for the state educational TV system.

One bright spring day a year or two later we observe the author along a rushing stream. With two 35mm slide cameras around his neck he is recording the efforts of over a hundred oil spill technology trainees who are trying to contain several hundred gallons of brightly coloured cooking oil deliberately, but reluctantly, spilled for their training exercise. The 100 rolls of film shot that day are cheap compared to the cost of the spill and eliminate the necessity for additional training spills over the next several years. The resulting tape-slide presentation is low budget (if you ignore the cost of the spill itself) and produced for local conditions, with the added benefit of helping to protect the environment.

Now to 1976 and a rural training centre in Sri Lanka where the author is training rural development officers to prepare very low-cost posters and other tools for family planning education. Lessons include everything from manufacturing 'ink' from used crankcase oil and the carbon deposits in the chimney of an oil-lamp to hand-drawn 35mm slides (Figure 1). This is human interaction with a technology element, particularly since the poster design critic is the author's four year old daughter.

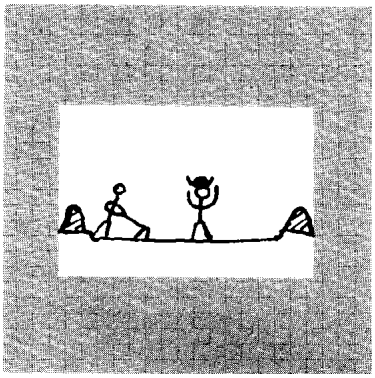

Figure 1. A sample handmade slide on road construction from the author's article on 'Basic Communication Techniques' in UNICEF's *PSC Newsletter*, 4:3, p 9, 1980.

During this decade the author writes two editions of the *Community Media Handbook* (1973 and 1979, Scarecrow Press), one result of running countless training courses for educators and community groups on the development and use of communications media. Regrettably the hardcover book gets wide circulation in libraries but fails to reach the community audience. Books are a wonderful teaching technology but if they fail to reach their intended audience they fail to meet their purpose.

By 1978 the author is alternating between consulting work in Canada and (primarily) SE Asia (Figure 2). He considers purchasing one of the word processors that then current advertising suggests have so much potential for eliminating paper, the drudgery of office work and written reports, but the distributors are only interested in serving the multi-order business and government markets, so he purchases a 48K dual disk drive desktop computer and display terminal (this is in the days before Apple, Radio Shack, and the Commodore Pet, let alone IBM, Compaq, and the other desktop late comers). This is the calm before the storm.

> The paperless office? What a joke… Far from reducing paper consumption, office machines are spewing reams of paper at a staggering rate. Copy paper use [as used in laser printers] has jumped 400 percent in the past 10 years. Some 5000 sheets are used each year for every Australian worker, including those that don't go near an office. (Campbell, V (1996). 'The Paperless Joke', *Information Age*, Aug, 22.)

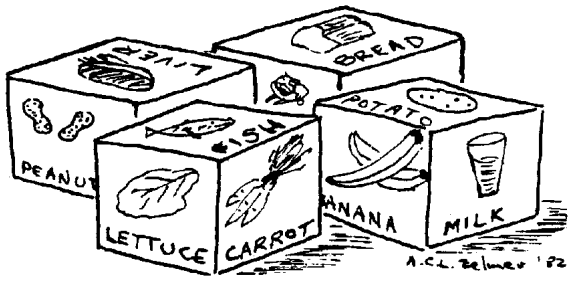

Figure 2. 'food cubes' from The Voluntary Health Association of India's *A Manual of Learning Exercises for use in Health Training Programs in India*, p 19, 1983.

The new computer must be assembled before delivery (high school students solder chips and other components into memory boards, etc., as part of a work-study program), so the author is soon back overseas with a development agency shooting extremely low-cost 16mm training films on chlorinating drinking water. Externally planned and executed without sufficient local knowledge, the filmlets are not useful for village training but the shooting provides a training opportunity for the staff of the newly established national TV facility, the filmlets provide a useful addition to their archives, and the author becomes a self-taught (under the palm trees) Basic programmer. This is inappropriate technology but with a positive outcome.

There is a 50% chance that whatever the author is doing over the next three years relates to making the new computer work. A custom programmed terminal emulator needs almost constant revision, leading to experience with assembly language programming, as the local university upgrades their facilities. The initial editor needs text processing functions to be useful, then an interface between it and the database program. All result in a collection of 'buggy' utilities that only the author can use. This is technology searching for a purpose…

It takes the author almost a decade to realise it, but he is in the midst of a career shift—from educator developing and using low-cost communication technologies to computer-based educational technologist—and is experiencing a paradigm shift—from technology as artefact to technology as tool. In the early to mid-1980s we find him helping primary school students learn about computers through

assembly language programming (what else do you do when there aren't any educational applications?), although he often knew less than they did, and college students learn how to use computer applications and make appropriate decisions about the use of computers. This is a new technology searching for an educational purpose.

By 1990 we find that the author has worked with at least a dozen different computer operating systems, has consulted on business computerisation in Canada and overseas (Figure 3), owns several personal computers of various types and capabilities, and is based in Australia working full time for a tertiary institution. His work at what will become Central Queensland University (CQU) now focuses in two areas: teaching undergraduate students about computers and their application and managing a National Priority (Reserve) Fund (NPRF) computer-based learning project for the Faculty of Health Science. The project's ultimate goal is a 'hospital in a box', a computer-based interactive learning package which simulates the activities of a hospital nurse. The project falls short of the goal but demonstrates yet again the need/desire of students to learn from real-world situations and computerises the Faculty of Health Science. This is still a technology searching for a purpose but the dreams are looking more realistic.

Figure 3. Voluntary Health Association (Delhi) staff using their new desktop computer, January, 1990; sketched by the author from a photo for use in locally produced project report.

As the 1990s continue the author becomes increasingly involved in the operations of CQU's Department of Mathematics and Computing and gains recognition as a computer professional by completing a PhD on managing technology change (based on user feedback from the NPRF project). He is part of the team responding to a recent Discipline Review by implementing the Bachelor of Information Technology (BInfoTech) degree, develops the core first year unit 'Human Issues in Computing' to help address the Discipline Review issues, and chairs the CQU Computer Security Committee. This is technology training in context.

June 1996 finds the author in Rockhampton, Queensland completing a much-delayed CAUT-funded interactive multimedia package for diabetes education (Figure 4). The masters student who provided much of the labour (design, user testing, and programming) for the project has already returned to Malaysia for a delayed honeymoon when cartoons of CD-ROMs and jewel cases arrive—still requiring assembly, packaging, and shipping. This is back to hand labour and the assistance of the author's spouse…

Later the same month and into July we find the author in Singapore for APCHI '96 and an orientation program for CQU's Singapore students, followed by a similar orientation program and staff training in Sydney. CQU now has 11 campuses in operation or final planning and the author is responsible for the delivery of the BInfoTech degree in Sydney and Melbourne. The days between APCHI and Orientation Week are filled with editing the second edition of *Computer Basics for Health Practitioners 1996* (Australian Health Informatics Association (Queensland) Inc) and visiting the National University of Singapore's CyberHospital (http://ch.nus.sg).

A few days later we find the author back in Rockhampton organising student projects, mediating staff complaints over computer security, planning a new teaching unit—Introduction to Multimedia—taping several commentaries on the social effects of technology for ABC Radio's *Queensland Sunday* program, and writing this paper. Technology as toy and tool, using technology to develop and deliver learning materials, and responsible commentary on the technology—this is life in the 1990s.

2. Experience is Utilising What Has Already Been Done

As indicated previously, the purpose of this morality tale is not to focus on the career of a single individual, but to extract some lessons for computer-based educators as we rush towards the end of the 20th Century. The historical context provides, depending upon your point-of-view, several examples of the triumph either of unionism protecting jobs or common sense 'gone amuck' and technology sadly under-utilised.

- The Hagerstown USA delivery of direct teaching via television to year 1-12 classrooms in the mid-1960s, a lighthouse project of its time, probably did not result in the long term replacement of a single teacher. The subsequent introduction of inexpensive video technology likewise does not replace teachers, it primarily substitutes for 16mm film in school-based entertainment and occasionally delivers supplementary resource materials.
- Educational simulations and games did not become widespread, particularly after the widespread negative reaction to 'games' and the use of morality and decision-making exercises by poorly trained teachers. Instead we find conference presenters in 1996 extolling the virtues of converting computer-based simulations to paper-based exercises for classroom use—as if computer-

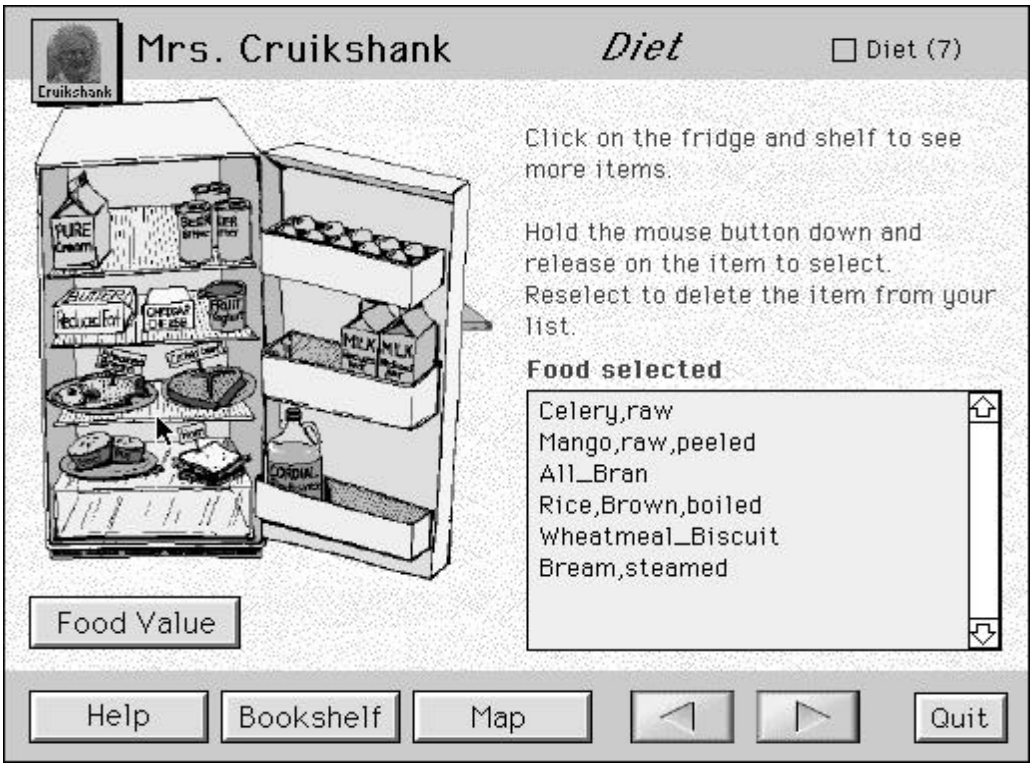

Figure 4. A screen from the CAUT-funded interactive multimedia package for diabetes education completed in 1996 using student labour. This screen shows the interface and a typical activity. Users select food items for their client from the fridge and shelves, look up the food values as required, and write a justification in the nursing care plan on the next screen. User testing provided the screen design and verification of the interaction.

based simulations had not originally been converted from the paper-based exercises of the 1960s and reported as action research projects through ERIC, etc.

- Multimedia is still a technology searching for a purpose other than entertainment, regardless of how many of us are training computer-based multimedia specialists.
- Computer technology is in the same category. We accept advertising messages at almost face value, adopting new technologies and tools without regard for their deficiencies, missing components, expected life span, user needs, or length of learning curve required.

  I know that I am not alone in finding, for example, that
  - hardware and software vendors are consistently delivering 'beta' versions, expecting me to debug them during use,
  - new multimedia tools have upgrades available even before I've installed them, and
  - many functions never get used while other functions don't work as advertised.
- Every new technology creates a 'bandwagon' effect—you aren't with it unless you are using the new technology—and last week's technology is obsolete and ineffective.

While some individuals have made each and every one of these technologies work for particular purposes and places, none of the technologies have been as effective, or as universal, as their exponents have claimed/hoped. That is, of course, obvious to any reasonable observer. Each technology has its own strengths and weaknesses, just as each learner is unique, with individual learning preferences.

These technologies have all had a demonstrated potential for development and use by individuals as well as being part of the dominant mythology that courseware development requires a team of specialists. I'm not sure that I would totally lay the failure of these technologies for education and training on the supposed need for high cost priesthoods and temples—some people, after all, have never been able to make any technology work—but I would suggest that some of the best courseware has been, and continues to be, prepared by individuals or small groups working with minimum facilities. We like the production qualities of Lucas Films, Village Roadshow, or even the university's commercial multimedia unit, but slick productions don't necessarily lead to cost effective educational courseware on a sustained basis [see also 4].

Experience indicates that while courseware exemplars may be produced with an adequate budget and a proper team of specialists and content experts, most courseware is designed and produced with a limited or nonexistent budget by individuals or small groups and is oriented towards a specific local situation and user needs. This is often derided as 'reinventing the wheel' or the result of the NIH (not invented here) syndrome, but the reality is that presenters are as unique as learners, and while some

are capable of working with a variety of materials or using materials developed by someone else, many are not. Student needs, particularly within locally based units (eg. Marketing the Queensland Tourist Product), may also be localised. Baldwin's supposed vision when he was Minister of Higher Education regarding the economies of scale to be brought about by every lecturer in the country using a single curriculum and common resource materials will remain a dream, particularly as many regional institutions owe their existence to the niche role they play by responding to local needs.

Given that, and the insatiable demand for courseware which results from the adoption of new technologies, it should be no surprise that many lecturers still use nothing more sophisticated than typewritten notes on an overhead projector and distance education materials are primarily text-based and distributed on paper. The conventional courseware team development model implies a timeline expressed in months or years plus a significant budget; individual development may be shorter but still implies a significant investment of time and resources (usually personally provided, thus often inefficient).

Part of the problem results from the individual nature of the 'lecturing' role. Most lecturers have no role models other than the lecturers they observed during their own training and may never see the newer technologies used successfully. Even at conferences the use of technology is minimal (how many ASCILITE presenters won't even use a microphone) and fraught with difficulties, leading those of us with previous experience using buggy technology to also fall back upon OHPs or other tools which we can control.

3. Many Hands Are Required: Student labour

If the advantage of age is experience with a variety of technologies in an even wider variety of educational situations, the advantage of youth is enthusiasm and a need to know. The US Peace Corps and comparable overseas volunteer programs in Australia and elsewhere proved that young people are capable of making a major impact on seemingly intractable problems when appropriately motivated and supported. University-industry cooperative programs and discipline-based 'projects' similarly provide an opportunity to apply textbook theory to real world problems and are highly regarded by potential employers and students alike.

While the basic staffing of the NPRF project with Health Science was paid—computer technician, staff/student computer support assistant, and part-time project manager (the author)—the majority of the development work plus the network installation and management was provided by students who were 'paid' in academic credit (undergraduates in the Computing Project or similar units, as a research laboratory for postgraduates—one of whom was the author). The undergraduates in particular provided most of the day-to-day support for courseware development and the operation of the system, including designing and writing the initial courseware development tools [3].

The CAUT-funded diabetes project likewise depended heavily upon student 'staff' and would likely not have been completed except that the project was the research vehicle for the principal courseware programmer. This individual (and some of the other student staff) was paid for a portion of her work but the monetary return would have been a few cents per hour if averaged over the total project [2].

There seem to be two major arguments against the use of student staff. First, that the use of unpaid student labour is exploitive, and second, that the quality of their work is inadequate. Neither argument is totally false.

- Since students can easily be exploited they must have clear guidelines and, preferably, a written contract indicating their responsibilities. However, payment can come in several forms—cash, academic credit, access to scarce resources, and publication opportunities [5, 6, 7].
- Student design work is often very creative but difficult to implement in a cost-effective manner. Because of their inexperience students can be easily distracted or so involved with a particular aspect of the project that they lose track of the overall goals. We often forget, however, that the same criticisms apply to academics and other professionals.

  Most non-commercial courseware projects will never achieve the production quality of products developed by dedicated professional teams working in a commercial production facility—they simply do not have comparable support (budget, facilities, etc.). It is also important to remember that even the major commercial development houses have far more failures than successes. Even properly supervised students should, therefore, be allowed to fail at an activity if it contributes to their learning.

  'Horses for courses' applies to quality as well as many other areas. If student labour allows projects to be completed when otherwise they would never be available to learners, and the overall quality is acceptable to the user population, then the quality will exceed the standard of quality lecturers place on their own teaching materials—their continued dependence upon poor quality overhead transparencies, for example.

Students must also be aware that there are significant costs involved in their project and, to be most effective, they must become fully functional members of the development team/process.

- Students (any staff for that matter) require a significant investment in training and supervision. Training requirements will include technical (how to use the software and hardware), process (user training, interface requirements, organising user testing sessions, etc.), and general workplace skills (punctuality, health and safety, finance, etc.). With the NPRF project, for example, one of our third year computing students could not remember how

to format a diskette (his girlfriend had done it for him in first year and he had been using the same diskettes ever since) and had never previously attended a meeting or written a report.

- Team building is time consuming and often ignored in academic institutions (when did your Department last run an orientation program for a new staff member?) but will repay the investment in time and energy many times over. The [paid] student staff in the Department's MCHotLine support service for first year students, for example, operate as a self-managed work group as they juggle face-to-face, e-mail, phone, and fax inquiries about assignments and course-related problems. They run a very professional service, highly regarded by the students they support, but one which could require a half-to-full-time staff member for supervision if they didn't operate as a team.

  Likewise the students involved in both the NPRF and CAUT projects were considered to be, and became fully functional, albeit part-time, members of the staff. In this regard, students are like most other individuals in the workplace—provide them with appropriate responsibilities and rewards and they respond professionally.

The major risk with using student staff is not the potential for a second rate product, they will usually produce as good a product as their trainer/supervisor would under the same circumstances and level of resources, but is the potential for the student labour to neglect their other studies or to be left unsupported by their supervisors. Students require a fallback position in case the required resources are not available or the project fails for some reason. Even in grading the project work there must be a realisation that it was a student learning project and the failed project may have provided more opportunities for learning than a successful one. Learning is, after all, the primary goal.

4. Slow Progress

The classroom is one of the few places where a visitor from any time over the last 2000 years would still be quite at home. Change is slow. We still seem to value the good classroom lecture higher than any other form of presentation, even in our choice of job titles—Associate Lecturer, Lecturer, etc.—presuming that the best learning occurs when students 'sit at the feet of the masters' and listen.

There are a number of reasons for this, and tradition is only one. It is much easier to judge an academic's output by the number of students times lecture hours than to develop a suitable metric for assessing the value of a WWW-based delivered unit which utilises student discussion groups and peer support. My own Department, for example, has difficulty determining my workload as I deliver my 'lectures' to both on-campus and distance students via pre-taped video segments in a unit which is assignment-based rather than having exams. The conventional wisdom suggests that I don't do any teaching (aka work) once the videotapes and other materials are prepared.

I might suggest that we would be better off attempting to assess learning rather than teaching.

Other reasons relate more to our own education and role models. Budget cuts, administrative changes, and even more importantly the introduction of new technologies, have decreased the value of ERIC and similar resources established several decades ago. My academic career began as ERIC was introduced, I understand its value, and know that if I want to find studies on the use of simulations, for example, this rich resource of otherwise unpublished practice-based research is a good place to start. I also know that ERIC abstracts are not always representative of the contents and retrieve the documents themselves whenever possible. A young academic or librarian, used only to electronic searches and abstracts, may ignore anything pre-WWW (or at least pre-computer) and may rely on the abstract instead of reading the original. Yet ERIC, and similar services, had the same impact on academics/educators when introduced that the WWW is having today.

This generational conflict was particularly evident during the NPRF project when we were considering developing computer-based simulations. As anything written more than five years previous supposedly wouldn't be accepted by a thesis supervisor, and 'obviously' anything written pre-computer couldn't possible be of any use to a computer-based project, one staff member refused to consider prior art at all, even though a number of paper-based exercises could have been used effectively as models for our computer-based exercises (and subsequently have been by other developers).

Training, or rather the lack of training, is one of the frequent causes of difficulties with university-based or non-commercial courseware development projects. This is as true of paper-based courseware as it is of the electronic media. The Department of Mathematics and Computing at CQU, for example, has taught professional computing at a distance for more than 25 years. It is only within the last few years that extensive use has been made of commercial textbooks for delivering instruction to distance students rather than relying on CQU (or CIAE as it was) produced paper-based teaching materials.

The quality of those materials obviously varied from unit to unit and writer to writer, and their are adaptability to individual learner needs depends upon the skills of the designer(s) and/or writer(s). The Department has always had a wider variety of supporting materials for on-campus students—videotaped demonstrations, etc.—but often these were also made these available to Queensland students through a network of open learning centres, now the Open Learning Network. Increasingly staff are utilising new media—computer-based simulations, World Wide Web support, etc.—and making all resources available to every student (on-campus students have received copies of the distance notes for some years).

Unfortunately, changes in staff and institutional priorities contribute to the loss or downgrading of this

expertise. The Department does not have the resources to put training programs into place to ensure that course developers have the skills to develop effective traditional materials, and any available resources are more likely to be directed towards more glamorous new media. Course development teams, incidentally, are part of the rhetoric but timelines and resources seldom permit their deployment [4].

A related problem arose in the initial stages of the CAUT project, causing almost six months delay in the project's development, when the project team lacked a common understanding of terminology. Specifically the team disagreed on the meaning of *interactive* multimedia when the project director (the author) failed to implement an adequate staff orientation program. While the problem should have been foreseen even commercial developers continue to produce so-called interactive packages where the interaction is confined to 'page turning'.

Perhaps more than anything else, projects require a combination of literacy, experience, and change management skills for successful implementation. Selection criteria and training programs for project staff, developers, other specialists, managers, student staff and grass-roots users (even those in developing institutions and countries) need the same components (Figure 5).

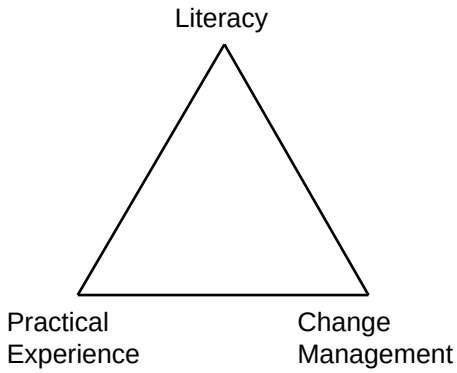

Figure 5. The three components of any educational program/system implementation. Recommendations from a HIC'93 (1993 Annual Health Informatics Society of Australia Conference) workshop led by Bill McGuiness, Rita Axford, and Anita Griffith.

- Literacy is broader than simply the ability to read, it includes the ability to interact with users (understanding their culture and language), and the ability to use the tools available (this might range from cameras to computers, darkroom techniques to software skills). Formative testing skills and the ability to extract meaningful information from user testing sessions, for example, are particularly missing in most development teams.
- Practical experience, as this paper indicates, can be in related areas and over time and a variety of technologies if the individual has the ability to apply the experience to a new situation. It often seems that the most valuable role for experienced staff is 'technology transfer'—explaining to junior staff why they made design and project management decisions. Unfortunately, this seldom happens.
- Any application of technology to learning involves a process of change; and without a plan for managing change, as well as the technology, the technology will fail.

  Change management, therefore, becomes the responsibility of every individual, not just the 'manager'. Our student staff, for example, need to develop the ability to manage their own changed experience, knowledge, skills, and understanding and place them into context. This requires guidance from more experienced staff in understanding the change experience as well as their more normal 'research' related guidance.

5. Supporting an 'Applied' Approach

I've lived in Australia for almost eight years now and during that time I have seen a number of major changes to the structure of our profession—most particularly

- the transformation of the Institutes of Advanced Education into Universities under the Unified National System,
- the increasing technological sophistication which has finally allowed us to effectively deliver computer-based interactive educational and multimedia products,
- the rapid development of on-line services such as the World Wide Web, and
- the repercussions of the recent changes to the Industrial Relations Act.

I won't debate the value of these changes in this forum except to say that we know we cannot properly plan for change when the change is externally driven—the result is almost invariably wasted effort and unnecessary stress.

Through this time, however, ASCILITE has provided both continuity and focus for computer-based educators and students. That isn't to say that the organisation is perfect, or that it hasn't itself also been undergoing change, but rather that

- ASCILITE conferences, such as the 1995 Conference where most of the recent CAUT-funded projects were either discussed or demonstrated, seem to focus on improving tertiary education, rather than just providing an annual forum for 'technofreaks' to debate the latest cycle-saving technologies, and
- ASCILITE members have a willingness to adapt to the changes confronting their institutions, finding ways of utilising the technology to overcome the new constraints, and hopefully provide an inspiration to their colleagues and students rather than letting the technology be a threat.

I am reminded of an article which I recently read (and failed to save so that I could provide proper attribution)—it seems that a recent survey identified a number of lecturers opposed to the use of technology in teaching. The survey indicated that they were unhappy with the lack of chalkboards and whiteboards in large lecture theatres since you cannot write as

much information on an overhead transparency as you can on the chalk/white board. I suspect that this is a classic case where the introduction of new technology exposed an existing problem. It is likely that the lecturers were really opposed to preparing their lectures, and thus any required OHPs, in advance and that they were totally unaware of the effect of their existing poor presentation techniques. In my experience, ASCILITE members have been quite sensitive to such situations and have led by example rather than by ridicule.

Some of our colleagues *will*, from time to time, accuse us of having jumped on the most current bandwagon. Often we are either ourselves, or are promoting others as, 'Product Champions', individuals who fervently push for a particular change within our organisation.

There are risks in such strategies. Product champions are far too often unsuccessful in their endeavours, perhaps because the timing was wrong, or they failed to obtain sufficient support, or simply that the innovation was misunderstood or required a unacceptable change in behaviour. Leigh [1] suggests that 'product champions generally identify themselves, the problem for organisations is how to help them succeed.' He goes on to warn:

> Of the many lessons to learn about using product champions to foster experimentation and hence change, probably the most important is:
>
> *Don't let a product champion go down with the product or idea.*
>
> Product champions who have put their career on the line to experiment with change must be rewarded not punished, recognized not given the cold shoulder. [Emphasis in original]

The challenge to ASCILITE is to ensure that an appropriate system of rewards and recognition become a part of the fabric of experimentation and learning in our institutions.

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