

Origins and Development of Computer Literacy for the 90s: An Inservice for Teachers

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Abstract

How can I use computers in the classroom? What is the Information Superhighway and where is it going? How can I keep up with my students? How do I access the Internet? What is the Global Classroom project? How do I use multimedia to enhance my teaching and my students' learning? Did someone say 'technophobia'? These and other questions serve as a springboard into creating a 'big picture' of current and emerging developments in information and communications technology (IT)*. This paper discusses the origins and development of an inservice program designed primarily for teachers wishing to develop effective strategies in making use of computers in the classroom.

1. Introduction

Acknowledging that trying to keep up with the rapid rate of change in our 'technological' (some may say 'information' or 'communications') society is often a constant cause for research or another crash-course on yet another new version of a software package, it is clear that there is a need for users (in this case, teachers) of IT to acquire a coherent view of current and emerging trends. Thus began the development of a broad-based training course, *Computer Literacy for the 90s*, an attempt at providing a 'big picture' balanced with foundational 'hands-on' training.

Structured into six 3-hour sessions the program does not promise a short-cut to becoming a computer-whiz but it does aim to provide a sound foundation on which to build knowledge relevant to each teacher's situation. By placing the current rapid rate of change in the field of computing (and communications) into a broader context than the specialised focus of skills-based training (such as, *Using Word for Windows*, *Excel Spreadsheets*, *Desktop Publishing using Pagemaker*, *Connecting to the Internet*, etc) the course aims to equip participants with both an understanding and a set of strategies for how to develop better computer literacy.

While there may be a legitimate academic debate about whether 'computer literacy' accurately describes this fundamental understanding, or facility, it is clear that today this description implies much more than the ability to handle a wordprocessor. Not so long ago 'computer literacy' implied competence with writing a computer program. It soon became roughly equivalent with knowing how to use a wordprocessor. Today it tends to imply generic or transferrable skills and, for many people, the desire to become 'computer literate' has much more to do with getting connected to the Internet or the 'Information Superhighway'.

* for reasons of convenience, we will use 'IT' to include information *and* communications technology

2. Early Issues

In discussing how we would design a computer literacy course we had to explore some provocative topics such as:

- the ‘history’ of teaching and learning and the roles that ‘tried and true’ methods such as drill and practice have to play with the new technologies;
- whether the current curriculum shelters students from technology while they are at school or prepares them for it;
- reform in the school—does it reflect the rapid technological changes occurring in the workplace?
- what are the problems associated with students having freedom to access information resources and services on the Internet?

As we began to consider the ramifications of developing such a course many side issues surfaced—such as the problem of following-up and consolidating the professional development back at school: for many teachers this would still mean either seeking out their local IT champion (if they had one) or becoming such a person themselves. Other interesting developments during the ongoing development of the course have been the publication of the final report of the Broadband Services Expert Group (in March 1995), and the more recent announcement by the Commonwealth Government of the establishment of EdNA (the Australian Education Network).

3. Teaching Issues

In order to present the course in a flexible manner we had to take account of the various learning styles students may prefer. This was (and is) an issue that must always be addressed. Compounding this is the power of mystification that often accompanies technology and the situation frequently encountered in schools where students know a whole lot more about the technology than the teachers.

A central question, which is best asked once an understanding of the potential of computers in education is established, is ‘to what extent should computers be incorporated into existing teaching programs?’ There are a number of obstacles to exploring this issue because there is still today a carry-over attitude from a decade ago where computers were viewed as naturally fitting into the Mathematics or Science curriculum. Given that the printed page has had universal application and the ample evidence that the current revolution in IT will be as profound as the revolution initiated by the Gutenberg printing press, it seems that such an attitude should be purged. But at the same time, neither can there be a prescriptive answer to the initial question. *Consideration* of the extent really serves as a means to remain alert to the need for ongoing critical evaluation of these new tools. We’ve all been subjected to the hype associated with the marketing of multimedia and this is a constant problem when the *wow* and *zow* of an animated interface takes prominence over any presumed pedagogical outcome.

4. Content

We were also faced with the task of designing the course so that it would have sufficient appeal to hold interest over the specified amount of time. We chose to commence by

disassembling a PC—all hands on deck unscrewing the case discussing each of the main components as we came to them...SIMMs, hard disk, power supply, floppy drive, CD-ROM drive, logic board and slots for add-on cards. This has proved to be an excellent group ‘warmer’ and helps convince even the most technophobic of participants that a computer is not really any more mysterious than their television or hi-fi system! Of course, taking all that ‘older’ technology for granted is another issue and being reminded how easily we do take things for granted also helps to demystify things.

So where to next? We decided to boot up both Macs and PC’s and look at the differences and similarities between these common desktop platforms. A little ‘hands-on’ so that even the subtle difference in mouse-click could be appreciated was used as an introduction to the GUI, or graphical user interface (acronym included) and this was compared briefly to the older (though still extant) DOS. We’ve found that historical perspective—sweeping through time from the Gutenberg printing press, to the telegraph, telephone, radio, television, digital computers of the post-World-War-II period, the brief history of satellite technology and the briefer period since the first microchip—all helps in building some kind of ‘big picture’. Obviously, there is no *definitive* big picture, or at least not to the authors’ knowledge!

Following on from this the basic suite of ‘office’ software is introduced and participants are again shown that there are many foundation elements common to most software. It is just that a spreadsheet is generally used for a particular kind of task, as is a wordprocessor, database, graphics or presentation package. Basic principles of desktop publishing are covered and for this another journey into the world of (peripheral) hardware such as scanners and printers is included. At this stage we try to incorporate a hands-on production of a mini poster, c-v layout or dinner invitation. This has varied depending on the wishes of the class though we have generally found that the enthusiasm to get through the first few modules and onto the Internet has been a determining factor.

However, before introducing computer networks and the extensive resources and tools on the Internet we have felt it important to focus on the computer as a standard feature of today’s classroom. As a consequence, we have had to incorporate a module on presentation techniques and capabilities of standard ‘office’ software and stressed the importance of investigating pedagogical issues arising from the use of this technology. This is all further emphasized in a review of a few CD-ROM multimedia titles where both good and bad examples of this new medium are evaluated with the class. Issues concerning instructional design and the production process of multimedia titles is also discussed. At this point the ‘big picture’ is visited again but this time in terms of where this technology is all heading. The marketing of desktop multimedia systems has had until only recently a fairly free reign, and the average home (or school) user could be forgiven for assuming that this would be the main trend in desktop computing for a good while yet. But the recent rash of *Internet Internet Internet* in the media and party policy documents has changed all this. In some ways it is true that multimedia will still maintain a prominent position but perhaps it will be better appraised in the light of the vast (hypermedia) resources to be found on the World Wide Web. The roll-out of broadband network infrastructure by both Telstra and Optus also brings much promise to enhanced high-speed interactive network services and really points to a convergence of multimedia with communications technologies.

Once the basic services on the Internet such as email, news, and ftp are covered the class is introduced to the World Wide Web. Examples of projects which extend beyond the single classroom are explored and both collaborative and exploratory-based learning are introduced as discussion points. After a period of free exploration the class is set a (group) task (by consensus) of assembling a set of resources on a chosen subject. This

could be resources of particular interest to teacher-librarians or career teachers, for example.

5. Summary

By aiming to provide a *broad* knowledge of current types of software we thought it important not to recommend any particular proprietary software over another—besides, there is never an easy answer with different people having various opinions on what *they* like best or find most useful. (Of course, it seems impossible not to have at least one discussion on the pros and cons of certain software corporations!) Clearly though, common features of wordprocessing applications still occupy an important position in basic computer literacy and so we proceeded to identify a main message that “wordprocessing is not just another name for typewriting”. In our combined fourteen years of computer support it has never ceased to amaze us that even self-proclaimed computer literates hardly use the feature-set of a wordprocessor beyond a bit of cut and paste.

Our aim has also been to provide participants with some useful strategies for further developing their utilisation of computers in the classroom. Ultimately, there is no substitute for the insights gained through self-directed learning.

While we have experienced some success in the delivery of *Computer Literacy for the 90s* we feel that there is still a long way. This is also true of IT in education generally. Academically, there is still a relatively small selection of courses in this country that actually attempt to probe deeply into the issues of teaching and learning with IT. There seems to be no shortage of forums and conferences on the subject but by and large these are still only fulfilling a ‘seeding’ function. There is also no shortage of still fairly highly-priced skills-based computer courses. Skills-based training is of course still very important but without some kind of big picture acquisition teachers will either be left behind by their students or fall in the trap of teaching content which is no longer relevant.

The course described briefly above is taught in small groups with a maximum of eight students per tutor. Classes are encouraged to explore issues that are particularly pertinent to their schools.

The Faculty of Education aims to be a contact point for schools accessing the Internet and a forum for computing related issues for teachers. In the coming months a number of listserv mailing lists will be established to further this aim.

(visit the Faculty of Education’s home page at <http://www.edfac.unimelb.edu.au>)

6. About the Authors

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