

High-Tech and Developing Education

by Laurence Brown

Given the tremendous explosion of virtual sources—in the last six months alone—the veracity of virtual education as a viable option is now within reach.

The advancement and extension of technology in the education sector has been remarkable since the first publication of this journal. This however, is not a completely unique experience. Whereas before, demand outstripped the supply of new technologies in most areas because of the infrequency of their development—the current situation presents itself as fascinating mixture of development and demand equity and disparity. This condition has created an economic boom unparalleled in any other contemporary industry. Indeed it is remarkable to consider that the info-tech industry has taken a young American male from relatively humble circumstances and transformed him into the single richest man ever to live—and all in less than a quarter of a century. Such feats have not been seen since the heady days of Alexander the Great—and even he was building on inherited gains.

Today's computer scene is one where bigger, faster and more flashy than ever is the standard expectation from those on the cutting edge of the industry. While this situation is probably no different to any other industry, there are now more people than ever who are on that cutting edge. Since the home PC is accessible to all in the west but the most disadvantaged, it is possible to see entire business communities and tens of thousands of home users waiting with baited breath for the latest software release.

At the other end of the scale however, are those who have spent draining sums of money for both hardware and software which will be obsolete by the time they unpack the product from its box. For these people—of which there are a staggering amount—reform and development cannot come too slowly. Very often their purpose for purchasing their computer set-up in the first place was to remain competitive with corporate rivals. Thus, in order to stay on top, or even keep pace, a continual supply of money has to be supplied for the maintenance of their computer-based performance.

The problem is compounded when it is realised, that the perception of need is a far more powerful tool in the hands of the marketing gurus than the actual existence of same. For most businesses, whichever model computer was the industry standard last year will probably be sufficient for their needs. And in most cases, their needs do not run any further than word processing or account keeping. When it is analysed most ruthlessly by companies who are considering bottom line costings, both of these functions can be performed most adequately by some of the oldest software on the oldest machines. Certainly ease of use and presentation become factors, but for sheer functionality, outdated is usually good enough.

Problems only begin occurring when questions of compatibility and network support are brought into the equation. Such needs tend to force companies, and some individuals, into spending large sums of capital on equipment in order to meet the only requirement not being met by the old computing set-up. The irony is, that the fraternal companies—which it is so important to maintain compatibility with—have often experienced the very same anxieties themselves. Their need for new technology is pushed by the expectation of peers and the clever promotional approaches of the marketing experts. The claim that there is a new operating system on the market is invariably couched in such terms as will make it necessary to buy that system or else

fall behind. Gone are the days where one can move ahead in the business world on computer advantage. Now everyone has the use of a computer, the battle is not for an advantage but simply to stay competitive. And so the ride merrily goes round again.

On the other side of the ledger are the home users and the 'computer geeks'. For the average one of these users, sheer power is often the major factor. Considering the relative pace of advancement in processing speed and the dipping price of memory, it is little wonder that there is a continual clamouring for the latest and greatest products. In part, this is fuelled not by a desire to use spreadsheet or desk-top publishing programs more efficiently, but to be able to play the latest games with life-like animation and three-dimensional sound and to be able to surf the most graphically-intensive sites on the WWW. While there will always be people—and families in particular—who will be satisfied with what they have and will regard their set-up to be adequate for their needs, many will not, and this too becomes another major factor in the drive for development.

Somewhere in the middle of this tug-of-war between stability and progress, is the education sector. There is a significant internal struggle taking place in each education institute between the need to be comfortable with a system, its component programs and with the former budgetary outlay, and an unquenchable desire to be able to conduct research or maintain records or communicate with greater speed, accuracy and efficiency. Like the corporate sector, the issue of finance is one of a dichotomy between potential costs to upgrade and potential losses due to obsolescence. It may cost only \$500 to upgrade one's computer to near-fantastic specs, but when that price is multiplied by 600 computers, the outlay becomes a significant one. This is particularly so if the money must be spent each year in order to maintain so-called 'industry standards'.

The result for educators from this myriad of potential advancements in PC technology is, not yet clear. The drive to produce on-line education options however, is fast becoming irresistible. When such respected newspapers as the Washington Post are advertising on-line undergraduate and masters courses on a daily basis, the trend towards a virtual expansion of educational revenue seems to be garnering legitimacy. While this direction in education is certainly not without its pitfalls, it does offer a flexibility which otherwise has not been available to educators. *Learning For Life*, the Review of Higher Education commissioned by the Howard Coalition Government recognises the inevitability of on-line education as the way of the future. Although the projections outlined in the discussion paper tend to border on the disturbing, there is at least a recognition of what the future is likely to hold.

Certainly, it is foreseeable that education will change so fundamentally within twenty years that there may well be more students in cyberspace than there will be on campuses. Particularly if 'life-long learners' are counted in this number. This projection therefore invites the question 'why are we funding campuses?' Certainly, the cost of construction for class rooms are high, and although the cost of computers continue to mount, the options are fairly incomparable. Such a fundamental shift will change the nature of education itself. Already the emphasis of raw vocational degrees are on bottom-line results. Even now there is a distinct possibility that this trend will spill over into the liberal disciplines such as history. As 'budget' becomes the word of the doomsayer within a given department, there is a disagreeable tendency to make sure that the information is taught and tested rather than presented within a scholastic framework and that an atmosphere of learning and understanding is fostered. Sadly there is a trend towards simply creating yet another product off the assembly line who has paid their way and justified the existence of the department. Departments which

strive for knowledge and the development of ideas and thoughts for the understanding of humankind, rather than concentrating on 'facilitating the vocational development of the consumer', have continued to do so at considerable risk.

With departments all over Australia such as classics or art history either being closed or undergoing such rigorous transformations as to suggest that closure may have been a preferable option, the time for quantifiable self-justification is now. If one cannot justify the existence of one's department based on cash or on immediate estimable benefits which can be pointed to, the future begins to look grim. Sadly, the development of the Internet as a tool for education is promising to accelerate this decline in academic excellence, and strengthen the position of those who would argue that solvency is indeed what a department is all about. At a time of financial adequacy, the Internet may have been a supplement for classroom and library studies instead of a replacement for them.

For all the admirable qualities that a medium such as the Internet possesses, it may well turn out to be a sword in the hand of those who view education as an expense rather than a vital part of any self-respecting, informed and questioning society. As we are led further down the path of economic justification, potentially useful tools such as the Internet will inevitably be grasped by the anaemic claws of the academic bean counters and cynically held aloft as a symbol of the classless future. And yet, what can replace the free flow of information and ideas which take place in tutorials or in informal bull sessions? Certainly e-mail is a wonderful creation—one worthy of an award of some variety—yet is it capable of replacing these established methods of synaptic stimulation? The considered answer is a resounding no. For all the advantages of e-mail (which is worth a paper in itself), it cannot replace the non-verbal language or the intonation and emotion which the spoken word is rich with. This process may be easily and effectively augmented by e-mail, but cannot be shown to be a sufficient replacement to warrant its primacy. This indeed is precisely the reason why distance education is far more difficult than a campus-based degree. While it has been oft-said that 'serious people write', it is also clear that people learn from others and from the round-table free-exchange of ideas which stimulate new conceptions of disciplines and studies.

For lectures, seminars and conferences as well, the element of actual communication could conceivably be transmitted electronically—either by text, sound, or possibly even video. However, these methods also remove by far the most valuable component of such didactic forms of teaching: the post-address discussion. For the occasional lecture, and the majority of seminars and conferences, one is able to mingle with other academics and speak to issues which are contentious, fascinating, or both. Personal contact is an invaluable tool in the development of any undergraduate, or perhaps even more importantly, postgraduate who is seeking to further their understanding in a given field. Most important of all though is that these occasions provide a chance to engage in interdisciplinary discussions which might otherwise have never taken place. While it is certainly conceivable that such encounters could take place in the virtual realm following an on-line conference, there would still be a vital element of the mix missing. There are some who would argue that the meeting of two minds in a textual environment, and then the flow of information and argument which could develop from such an encounter would be of a more pure nature than one which had a physical element. This may indeed be so as a philosophical supposition, however, the lack of 'humanity' in such an environment would dissuade all but the most abstract of minds from participating in such a chaste exercise.

Yet, the only option for many of these departments who have the capacity and foresight to take action before it is too late is to turn to cyberspace to supplement their meagre budgets. As more and more disciplines turn to this developing medium, the picture of what cyberspace holds for education will gradually appear. While there are still a number of academics who refuse to accept that scholasticism is simply a financial exercise, there will be hope that high standards of learning and inquiry can be forged in the virtual universe.

Unfortunately, the most striking analogy of virtual education that can be drawn at the moment is one of a ship searching for an island in a raging sea. The captain knows where the ship needs to be, but the map of the ocean has not yet been drawn. It would seem that this situation will remain until technological standards have been improved to the point that virtual classes and entire libraries can be accessed without any loss of clarity or quality—and even then one doubts if a true replacement for campus-based learning for the Social Sciences or Humanities can take place. Until that time, on-line education will remain in a state of flux. There will still be detractors and those who argue about either spending more money on computers or less—both to the same end of saving the department's budget—however, the education lobby can now be largely said to be resting firmly in the pro-technology development column. And even if it were not, there are enough end-users who are demanding better, faster and more powerful products that education would be left for dust if it did not wish to be part of the revolution. Thus, the only question that remains is the one which is still most important: how are the developments in information technology to be applied to education? As supplement or replacement?
