

### Standards

One of the aims of ALT is to promote good practice in the use of learning technology within higher education. Few would not subscribe to this aim, but proclaiming it without a full awareness of the problems it entails is of the same order as proclaiming one's commitment to Peace without further comment. Except for the absolute pacifist, being against war does not mean being against it at any price, but rather being committed to ensuring circumstances in which war will not occur. So it is with good practice in educational technology, which can be achieved only if circumstances are propitious. Such circumstances include sufficient funds, and a willingness in both teacher and learner to accept in whole or in part a technological route – good practice is unlikely to be achieved if technology has been incorporated into the curriculum merely in order to ensure that funds already spent do not appear to have been wasted. Above all, in my view, good practice assumes that users of learning technology are able to concentrate on learning without (necessarily) thinking about the technology, since if the technology cannot be made to work transparently, actual practice will at best lag behind ideal practice, and at worst be abandoned altogether. Impatience is a barrier to learning, and particularly if it is the result of struggling with the learning tools themselves. If the teacher or learner is constantly having to tweak the technology, or ending up with a half-baked implementation because the setting-up process has proven too difficult, the learning tool may well be left to gather dust.

Fax has rapidly become almost the staff of life in both commercial and educational institutions because it is on the whole reliable, and conforms to a single standard. Generally speaking, however, leading-edge technology is unreliable and unfriendly. When television sets were first seen in homes, they required constant adjustment and professional attention, and the television repair business boomed. Today, repairing television sets is a cottage industry, and not only because replacement may be less expensive than repair, but also because modern sets are technologically robust. What is more, in good measure television is now universally popular because the viewer knows that once a set has been bought, he or she merely has to plug in an aerial, tune in the stations, and all will work as expected. Television sets would be less numerous than they are if at each replacement the viewer had to go through a complex routine to make the aerial 'handshake' with the new set, only to find that five times out of ten this task could not be accomplished without expert assistance, and that three times out of the remaining five it could not be accomplished at all.

This is, unfortunately, much the case with interactive-multimedia technology. While word-processing is now at a stage where the user can be confident that the software and hardware will work well together, interactive applications involving images and sound appear to be recipes for frustration. The de facto standard in sound cards for IBM-compatibles, for example, is Westpoint Creative's SoundBlaster, which forms part of that de jure standard known as MPC (Multimedia PC). An MPC system, according to those who defined the standard, is an IBM or IBM-compatible PC with a specified minimum central processor and graphics card, specified minimum amounts of internal memory and physical storage space, a CD-ROM drive and a SoundBlaster or SoundBlaster-compatible sound card. Given this agreed specification, a user might imagine that an application involving sound, developed for the MPC standard, would run perfectly on any MPC system. Matters are not that simple.

Take a PC which conforms to the MPC standard, though not actually marked *MPC* (there are many such systems in use, while 'genuine' MPCs are rare). Contact the producer or distributor of a commercial product intended for use on an MPC system and, before paying for it, ask for a copper-bottomed guarantee that it will work as it should, first time and without professional help with the installation. If the producer is honest, you are likely to be told that no such guarantees can be given, that it may well come down to some trial and error, and that when all the dust has cleared there is still a significant chance that the product may not work at all. Such was the recent experience of a colleague of mine who was told by the distributors of a well-known American interactive-learning product that they could not guarantee first-time success, in particular with the audio element of the product, because their own technical staff had themselves spent several frustrating hours installing it on a genuinely marked MPC. First, they had had to change the sound card since it had turned out to be faulty only when this particular software product had been tried with it. Then time had been spent setting the system parameters so that the PC's internal memory was being handled properly, and discovering the right interrupts. How could they be sure, they argued with commendable frankness, that the product would run properly on a PC system which had been built up over a period of time, whatever standard such a system now supposedly conformed to? Indeed, when my colleague went ahead and bought the product on a sale-or-return basis, it would not run. And, not surprisingly, the installation manual was peppered with pass-the-buck advice such as: 'If you encounter problems, consult your sound card manual' – enough to make a beginner give up before beginning. It took many telephone calls and two visits from the suppliers to adjust everything so that the controller software could be loaded and run. The product was then tested on some students. It crashed after less than 15 minutes, displaying that Windows message which offers as little hope as Dante's gates of hell: the one that informs you of an unrecoverable error and impending termination of the application (once you have clicked on OK – Microsoft at least has a sense of irony). My colleague's final comment on the episode was that she would wait until the technology had matured.

The world of the Apple Macintosh suffers less from problems of standards than that of the PC, which is no doubt partly why some educational institutions have opted for it. But there is little chance that the Macintosh or any other non-IBM system will oust the PC from its firm foothold in the majority of higher-educational establishments. Many interactive-multimedia learning tools will thus have to struggle for a while to establish themselves on a platform which was not originally designed to handle them, and which has spawned innumerable deviations from its so-called standard – in the area of graphics alone, there are more than 30 different PC image formats.

Yet despite all this – indeed, because of it – those of us who believe in the future of computer-based learning technology (and not merely because pressure of student numbers might make it inevitable) need not simply wait for a real standard to emerge out of commerce or entertainment in the way such standards have emerged in the past. On the contrary, academics can be a major force in determining an accepted standard if they are willing to keep an open mind (in other words, to eschew the Not-Invented-Here and the even more childish My-System-Is-Better-Than-Yours syndromes), to co-operate in forming an upgradable standard which everyone can and will accept, and then to promote it by showing what it can achieve. That will be a good start for the good practice we in ALT wish to foster.

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