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25 Years on: progress in computer-based learning

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ABSTRACT

1996 saw several papers addressing and informing readers about developments in computer-based learning and their effective use in teaching also the impact of technological developments on services and personnel.

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Teaching; learning; technology; developments; CPD; health communications

Murray (1996) briefly mentions the First National Conference of the CTI (Computers in Teaching Initiative) and the initiative's vision as it relates to Computers in Nursing & Midwifery Education For more about the CTI in general see <http://www.ariadne.ac.uk/issue/5/cti/> (Martin, 1996). Since 1996 like many computer teaching initiatives including the Learning and Teaching Subject Networks (LTSNs) and the CTI have been subsumed into the Higher Education Academy now called Advance HE) see <https://www.advance-he.ac.uk/>

The explanation of the CTI's role is still available online <http://www.ariadne.ac.uk/issue/5/cti/> and explains that 'The CTI was challenging all academic staff to rethink their approach to teaching and learning given that the past 5 years had seen dramatic changes in UK higher education:

- increased student numbers and class sizes;
- reductions in unit costs;
- students arriving at university with more diverse academic backgrounds;
- Teaching Quality Audit (TQA).¹ and that

'The CTI believe that information technology has a role to play in addressing many of the issues raised by these changes. Our view is that computers should empower good teachers, not de-skill. Computers offer the opportunity to depart from the traditional constraints of the curriculum, allowing teachers and learners to schedule the place, time and pace of learning. Their capabilities can facilitate experiences

that would be too expensive, dangerous or time-consuming to generate in conventional terms. Visualisation techniques will enable teachers to illustrate their teaching in a more dynamic fashion than the current norm.

New generations of authoring tools will broaden the base of courseware authorship and students themselves will increasingly act as authors in their coursework. IT will support important teaching strategies such as collaborative learning as well as assessment.'² (Martin, 1996)

Longstaffe (1996) also looked at using computer technology in support of teaching and learning. Giving a good overview of the state of play in 1996 and highlighting developments that were needed to enhance computer-based learning including collaboration and sharing of resources and their current use to enhance the teaching and learning process: 'Computers can be used as sophisticated audio-visual aids in support of the conventional presentation of information, they can be used:

- to provide a great deal of information
- to deliver interactive learning materials
- communications devices; and
- to train students in the software applications that they will come across in
- their careers.'³ (Longstaffe, 1996, p. 34)

Also emphasising future needs 'One of the principal needs in education today is to develop systems and structures which will enable the recent rapid

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advances in technology to supply appropriate support for the learning process. It is vitally necessary that technological advance is paced by human understanding.' (Longstaffe, 1996. p. 36)

Since 1996 the availability of computer-based learning materials has progressed rapidly even if its effective use still depends on educators' abilities to understand and fully utilise technological advances.

Roy (1996) investigated the use of a student response system (SRS) using handheld clickers. I remember using such a system in large lectures very effectively if carrying, handing out and collecting them afterwards was time-consuming. Now we have the effectiveness of student responses via smartphones, computers and built-in wifi in teaching spaces so we can use online classroom apps like poll everywhere <https://www.polleverywhere.com/>, kahoot <https://kahoot.com/>, Socrative <https://www.socrative.com/> and similar programmes either free or via subscriptions far more cheaply than handheld clickers.

For the range of possibilities look at Bryson (2021) pdf guide to quizzes and polls to support teaching and learning which shows examples beyond the usual multiple-choice questions including word clouds and using images as a way of collecting data for student practicals. These programmes are effective and overcome one of the main criticisms of clickers that they were time-consuming and slowed down lectures (Roy 1996). However, the modern apps do rely on students having mobile devices and lecturers using them effectively to avoid disturbing the flow of a lecture, but they do support and encourage student engagement when asked questions and all can be involved not just those willing to talk in class. As Roy says in conclusion 'The more student-centred style of lecturing possible with the SRS can remove many of the well-known shortcomings of the conventional lecture.' (p. 31)

Lund (1996) looked at the changes in technology over the past 5 years and their implementation with caveats that are probably still true today including training and emphasising staff engagement in developments 'It is the involvement of each employee and director that will make the new technology department a success.' (p. 25). We are still going through rapid changes in technology and this paper as well as websites are well worth reading for advice see (Business Reality Check, 2021).

Many recent papers in the journal have shown how computer-based developments and the use of

programmes have led to significant improvements with effective examples of teaching and learning materials.

The value of developments and the need for further improvements at scale have been highlighted dramatically in UK higher education with the change due to the pandemic from face-to-face to fully online teaching and learning which has had a massive impact on staff and students and highlighted the need for both to improve their digital skills and digital literacy, for example, see the paper looking at the integration of information communication technology services and Digital Skills in Times of the Pandemic Covid-19 by Manco-Chavez et al. (2020).

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