

## Editorial

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# Computer-Based Learning Systems and Distance Learning

Distance learning was reviewed three year ago [1] preceded by Oscar Wilde's quotation "The whole theory of modern education is radically unsound. Fortunately, in England at any rate, education produces no effect whatsoever". My intention was to amuse, rather than to denigrate distance learning, although the conclusions reached in the literature at that time about its success were mixed. This special issue comprises a number of articles mainly from people working in various parts of the world; content and technology are nicely balanced.

You will notice that there is a noticeable trend towards getting to grips with the difficult but essential matter of evaluation – discussed by Merisotis and Phipps. James Merisotis and Ronald Phipps are senior staff members of the Institute for Higher Education Policy in Washington. They provide a review (not included in this issue) sponsored by the American Federation of Teacher and the National Education Association asking "What's the difference? Outcomes of distance vs. traditional classroom-based learning" in [2]. I have several times searched the literature before in an attempt to get an answer to this question but have been unable to reach a conclusion.

There seem to be roughly equal number of enthusiasts and sceptics so the conclusions of Merisotis and Phipps are unsurprising. During their review they unearthed "several hundred articles, papers, and dissertations" and list what they consider to be the shortcomings of research on the subject. They believe that "more emphasis has been placed on the utopian possibilities of the technology and its potential to do as well as classroom-based instruction, but not enough pragmatism has been applied to allow for a discussion of distance learning's practical implications as a supplement to enhance teaching and learning". They also believe that technology can "leverage faculty time but it cannot replace most human contact without significant quality losses".

The above remarks apply to experience in the United States. Work done in Europe is rarely discussed or cited with the occasional exception of articles from the Open University. A very large amount of money – perhaps £500M – is to be spent in this area by the UK as first heralded in a lavish 1997 publication from the Department of Culture, Media, and Sport entitled *The new library: the people's network* sometimes called "The Grid of Learning".

Referring to the articles in the order in which they appear in this issue – Dr. Dufour et al. from Delft University discuss the Cascade Open directory, available free for use on the Internet. It provides a distributed infrastructure, open for competitive improvement, enabling anyone to extract Internet data covering a particular interest – following the example of Linux software it is not intended to be centrally owned. The system is not directly related to the central theme of this issue but the idea of creating your own set of files for information retrieval is obviously of general interest.

Gordon Joyes and Rachel Scott from the Centre for Teaching Enhancement at the University of Nottingham write about the inadequacies of teachers. They are commenting on a ten-university European project called SteelCAL. New learning technologies are not effectively “embedded in the day to day practice of learning and teaching in most higher educational institutions. . . the main reason is that many academics have had no training and little experience in the use of communications and information technology as an educational tool”. Note that Joyes and Scott mention under “Full Evaluation” that they are comparing “the effectiveness of SteelCAL with an experimental group of students to a matched control group who are taught traditionally”. It will be interesting to hear exactly how they do it. As they say this exercise is “difficult to organise”.

Dr. Martin Oliver, a member of the higher education research and development unit at University College, London, describes the difficulties of evaluating online teaching and learning. In talking about the importance of evaluation he says: “The drive to evaluate has not been matched by support and training for the practitioners who are supposed to carry out these processes”. He concludes that the issues raised in his article “represent only the starting point for an ongoing discourse on the evaluation of online learning and teaching”.

Symeon Retalis et al. from Universities in Cyprus and Greece write about the associated topic of “Web Engineering” which receives little attention in higher education. It covers “multiple technology layers tightly linked together such as HTML, DHTML, XML, CGI, JavaScript, Java applets and servlets, ASP, ISP, web-server customisation, web-related database management systems, web site design, web-based system development processes, etc.”. The phrase “Web Engineering” is well chosen to describe this collection – I have not heard it used before, in a questionnaire, students’ opinion was overwhelmingly in favour of Web-based teaching.

Anthony Rosie’s article is about his experience covering “meaningful engagement and the enjoyment of learning” following the ideas developed by Biggs who suggests that “Relational knowledge involves students in developing systems of interconnection between concepts and learning approaches with teaching as a contributor to this linkage”.

Bernard Scott from the Centre of Educational Technology at De Montfort University talks about the CASTE system for course design and the matter of “conversations” between system and student. Scott was associated with Gordon Pask who died in 1996 and was regarded as a founding father of Cybernetics. The Web of Science shows that Pask’s 1976 book about Conversation Theory has been cited 66 times since it was published. CASTE is being used at De Montfort as part of a masters level programme in learning and teaching.

Michael Sosabowski et al. from the School of Pharmacy, University of Brighton write about chemical structures in their article about stereochemistry applications of computer-based learning. They discuss the significance of the chirality mirror-image phenomenon of carbon-based compounds and the fact that compounds which are the same in every respect but display chirality, may have quite different smells, e.g., of caraway and spearmint. My education in this area was sadly neglected. They illustrate the critical importance of chirality in pharmacy in a brief discussion of the part that it played in the development of the notorious drug thalidomide. The writers say that stereochemistry can be especially enhanced with the aid of computers and hitherto has been difficult to learn and teach.

Diana Thompson and Garry Homer are situated at the University of Wolverhampton which is also active at other sites in Shropshire – notably at the new town of Telford. Wolverhampton and Telford are two of the few large towns in one of the most rural counties in England with a widely dispersed population mainly engaged in agriculture. The authors describe the way in which IT training is carried out at all levels for people in the county.

Professor Mary Thorpe is the Director of Educational Technology at the Open University – the world leader in distance learning. Professor Thorpe says in her article: “Thirty years of experience of distance education at the OU. . . emphasise(s) product rather than process”. She embarks upon an explanation of how “the strategies through which reflective learning has been fostered and the impact this has had on students”.

Mr M.J. Wood is the enterprising head teacher of a Maidstone secondary school which recently won an award for its Web site. He is under no illusions about what has to be done “on a scale of 1 to 20 for measuring the potential use of IT in teaching and learning. I would not be confident to place us beyond point 1”. He comments on the climate of opinion at home: “If parents realises that there is a shortage of text books in a school they will be quick to complain but as yet they see access to computers as a luxury. . . . One of our teachers recently discovered that 24 pupils out of a teaching group of 25 have access to the Internet at home. I suspect that one Christmas in the near future our pupils’ stockings will be filled with cheap hand-held devices which, among other features, will provide Internet access”.

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## References

- [1] T. Cawkell, A new way of learning, *Information Services & Use* **18** (1998), 271–277.
- [2] <http://www.utep.edu/cetal/feb17> (1999).