Editorial

Joined-up learning technology

The phrase 'joined-up' is fast becoming something of a badge for modern imaginative ways of thinking. While much of this attitude may be 'hype' there do seem to be trends which stress joined-up views of the world. From a social perspective this is evident in moves towards political union in Western Europe and the global influence of multinational corporations. Technology is also contributing to the joined-up view. Multimedia supports new forms of expression, which integrate diverse forms of representation, as eloquently advocated by Negroponte (1995). Networked technologies enable and encourage global communication and information dissemination, as emphasized by the recent decision in the UK to support the development of a Distributed National Electronic Resource (JISC, 1999).

What are the implications of joined-up thinking for learning technology? The glib answer would be that they are many and significant. This instinctive response is understandable. There are rapid changes in the way in which educational provision is conceived, as epitomized by the notion of lifelong learning. In parallel ever more powerful technology is becoming ubiquitous. The combination of these two developments is bound to raise high expectations. However, if learning technology is to realize its potential in a joined-up world by making genuinely useful practical innovations we must apply a much deeper analysis of the issues.

It is not difficult to identify joined-up aspects of the use of learning technology:

- support for lifelong learning by breaking spatial and temporal barriers in the provision of learning opportunities;
- support for international teaching programmes;
- access to multimedia forms of representation matched to contemporary theories of learning and teaching;
- encouragement for cross-sector work, for example, the current emphasis on links between FE and HE.

This is not an exhaustive list, but it indicates the scope for the application of learning technology in a joined-up world. The papers in this issue echo some of these themes and illustrate how we can start to conduct a critical analysis of the use of learning technology in a joined-up context.

The first two papers highlight the growing awareness and acceptance of learning technology. The results of the questionnaire survey of staff in Scottish higher education institutions reported by Haywood, Anderson, Coyle, Day, Haywood and McCleod enable them to assert that 'Very few staff at any level view C&IT as of little or no value to teaching in their subject, most seeing it as being of moderate to significant value . . .' This finding concurs with the results of the phenomenographic study conducted by Jones, Asensio and Goodyear which 'point towards a common philosophy held by practitioners of networked learning'. However, both studies also highlight the need for more work if the capability of technology to encourage joined-up aspects is to be realized. Haywood et al. note the existence of significant barriers to use of learning technology, e.g. lack of time and a heavy focus on research compared to teaching. Jones et al. emphasize that, while there are generally positive feelings towards learning technology, academics lack effective 'rules of thumb' for its effective use. This raises important issues for the design of effective technology-mediated learning environments.

The Internet-based course in structural biology described by Sansom and Moss is offered to students from thirty countries, illustrating the role that technology can play in joining up educational provision in an international context. While developments such as this are extremely welcome, the discussion by Pincas of cultural aspects of online discussion sounds a warning: 'It may be pessimistic to assume that cultural differences and confusions are ineradicable, but at the very least, educators must be aware of, and make attempts to, safeguard against their worst effects.'

The use of rich-linked resources is a major feature of the descriptions of the Internet-based course in structural biology by Sansom and Moss and the software tool for stimulating practical chemistry by Povey and Bennett. These developments feature the linked use of technologies such as visual representation and access to text-based discussion groups. The potential influence of multimedia as a catalyst for joined-up approaches is evident in the claim by Pincas that the very nature of literacy will be altered.

In a context of lifelong learning and the distributed provision of learning environments the role of assessment will be crucial. The use of technology opens up some fascinating opportunities for development. Peat highlights this in her discussion of online self-assessment materials. Maclaran and Sangster describe how the use of technology can enliven and facilitate the use of more traditional assessment techniques, i.e. multiple-choice questions.

Learning technology clearly resonates with the notion of joined-up thinking. However, our understanding of exactly what forms this resonance can take, and how we should encourage it, is limited. The papers in this issue illustrate how a combination of research and examples of successful use can help us overcome these limitations in our thinking.

David Squires

References

Negroponte, N. (1995), *Being Digital*, London: Hodder & Stoughton.

JISC (1999), *Adding Value to the UK's Learning, Teaching and Research Resources: The Distributed National Electronic Resource (DNER)*, *http://www.jisc.ac.uk/pub99/dner_vision.html.*