On-Line Collaborative Learning Environments

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The impact of new technologies on Society and their corresponding influences on Educational Systems has stimulated interest in studies which reveal interesting and effective practice incorporating computer-based techniques, and research which can guide such pedagogy. Developments in multimedia materials, in networking that encourages and supports collaboration within the teaching/learning process, and in software tools that enable students to become knowledge authors not only improve instruction, but can take on innovative roles that have the potential to transform educational practice. This Special Issue, which has these perspectives, features over forty papers covering aspects of collaborative on-line learning environments and is organised rather loosely into six inter-related themes.

These themes raise issues such as how collaborative learning can be engineered to encourage active participation and engage deeper levels of thinking: system facilities which are effective in supporting such interactions: the pedagogies employed in instructional designs and the patterns of interactions which result: the range of applications employing collaborative learning methods and the benefits and particular problems arising in these studies. Other papers consider if the innovations have lasting effects on new courses and the transformation of educational practices; and how these techniques should influence teacher education and staff development.

In Collaborative System Design the papers include topics of how designs adapt to different communities of practice; agent techniques for interlinking individual learning paths as a prelude to collaborative interchanges; various web-based systems for supporting educational transactions via shared documents and multimedia facilities; systems and tools for a Virtual Classroom that supports mentoring; and a system that discusses and employs organisational and technical principles of knowledge management.

A second topic considers the Pedagogies that underpin Collaborative Learning. These include techniques of concept mapping and scaffolding, of supporting collaborative writing in ways that concurrently lead to individual development, and discourse schemes that emphasize structure and moderation of interactions in building up communities of practice. Role play simulations on the Web provide a further approach and these papers, though discussing the pedagogy, illustrate experience through case studies that can result in changes to teaching philosophy as well as to learning.

Collaborative Interactions is a third theme. Some studies report on the patterns of interactions in computer conferencing applications in a variety of contexts, including Languages, the Humanities, Science, Teacher-Training, and Law. Reports on the importance of task settings and structure, and the types of student contributions and feedback in relation to learning should hold the interest of readers, while a paper entitled The Body Matrix examines how the interactive experience is perceived by students, the metaphors which are used in their accounts, and the pedagogical issues which these raise.

A wide range of Applications is discussed in a fourth section, which has case studies from Primary, Secondary and Higher Education in subject areas including Mathematics, Language Learning and Writing, Business Studies, and Education. But each has a viewpoint, for example, broadening students’ perspectives and improving critical thinking; using parents, volunteers and experts to provide support for tutorial and for problem-solving scenarios; employing Virtual Reality and gaming techniques; coping with large classes; and methods of planning and task structuring. Three papers at the end of this section place emphasis on Evaluation, considering student differences in interactions, learning preferences, and how the evaluation experience influences new courses.

A fifth topic is entitled Building Learning Communities. Here the emphasis moves towards engineering communities of practice. One paper examines Wenger’s requirements of mutual engagement, joint enterprise and shared repertoires; another suggests encouraging and making roles and responsibilities explicit via group ‘contracts’. A study with Primary schoolchildren also registers a need for some privacy for participants; while a
fourth paper recounts how a learning community system has been established, in addition to traditional teaching methods, within a Business School.

A sequence of five papers on Teacher Education and Staff Development forms a final section. This includes topics which consider how Information and Communication Technologies, teaching strategies and collaborative learning can be incorporated within these training courses; the difficulties teachers encounter, for example, when training schemes engage students over a large geographical area; and building shared resources of knowledge and expertise.

In summary, this collection of papers provides a rich record of views and experiences of pedagogy and educational practices that are responding to the stimulus of the new technologies. What the authors have to say, and what they have achieved, should both engage the interest of readers and hopefully be of benefit to their own teaching and research activities in on-line Collaborative Learning.