Editorial Preface

Learning Systems Design

Liliane Esnault, Editor-in-Chief, E.M. Lyon, France

The design of Learning Systems has been and is still strongly impacted by the development of Web-based technologies and, more generally, by the increasing embedding of information technology in pedagogy. Thus, designing a learning system is at the crossroads between system design (and especially innovative systems design), information systems design and pedagogical design.

The locution “Learning System” covers a broad range of elements, from the situation of a small group of students involved in one single learning activity for a couple of hours to the corporate integrated administrative and pedagogical system of a university.

Despite this diversity, a learning system might be characterized, as any other social system, very roughly, by:

- a border, which delineates the scope of the system
- a purpose, an intention
- a number of actors, more or less organized
- a number of actions, grouped in a set of processes
- a business model (this being taken in a very general sense of: resources employed vs. value created)
- a set of supportive means, including models, methods, theories, knowledge, know-hows and so forth, and tools
- an environment that enables and constrains the systems.

Designing a learning system is the job of multi-disciplinary teams including, but not limited to, faculty members and, as often as possible, learners. The experience of other professionals in design, such as innovative product designers, information systems designers and new organization designers, might be of great help in designing learning systems. In the same way, relying on design models and methods, even if they were not designed for the pedagogical area, might help shorten the whole process time span and improve the efficiency of the system implemented. This issue of the International Journal of Web-Based Learning and Teaching Technologies has a lot to do with learning from system design to develop and implement efficient learning systems.

A very interesting model often used in innovation — and technology — management is Actor Network Theory (ANT). ANT comes from the work of two French sociologists, Michel Callon and Bruno Latour (see references in the first paper). First thing in ANT is that an actor is not neces-
sarily a human being; it might be any kind of artefact, technological or not, entities, concepts, organizations, documents and so forth, and human beings. A network is the full set of relationship that links all these actors together. ANT is of specific interest when it comes to the introduction of novelties (e.g., new technologies, but also new values or a new state of mind). Another interesting topic is the idea of provisional stabilization (or “temporary truths”), meaning that the actors’ network needs to agree on some stabilized knowledge to be able to go further. This idea might be helpful when dealing with areas where technology is not a stabilization factor in itself because of its rapid change.

The first paper — *Web-Based Education Accountability System and Organizational Changes: An Actor-Network Approach*, by Xueguang Ma and Roy Rada — presents an application of ANT to the development of a new, Web-based education accountability system. Part of their conclusion is that:

*The collaborative modeling and system development processes shaped social practices in the teacher education program...Education is an intrinsically social phenomenon. Technology is intrinsically vital in supporting education. The challenge of successfully implementing social and technical change requires the support of organizational theories such as ANT.*

The second paper — *Strategic Design for Web-Based Teaching and Learning: Making Corporate Technology System Work for the Learning Organization*, by Brian Corbitt, Dale Holt and Stephen Seagrave — presents the process of integrating online and on-campus education within a single university. They argue that only strategic design:

*can create and sustain enduring teaching and learning value, supported by corporate technology, * based on “vision, leadership, trust, encouragement, reward, appropriate forms of staff recognition and development, facilitative structure and continuity of action.*

It prevents from being too “product centered” while integrating and fostering “new forms of academic collegiality.” It enables integrating the core values of the university in the “digital enterprise.” Strategic design, again, is not something new, but its application to a corporate-wide learning systems design proves to be:

*the best way forward in exploiting the potentials of the corporate technologies for the enduring benefit of all parties with a stake in educating the organization’s learners.*

Designing online learning systems might be seen (or even feared) as a totally new process that has to be invented from A to Z. The third paper — *Online Behavior Modeling: An Effective and Affordable Software Training Method*, by Charlie Chen, Terry Ryan and Lorne Olfman — argues that well-known and effective training methods, such as behavior modeling, can be usefully transferred to online learning. Furthermore, the authors conclude that “online behavior modeling is more cost effective than face-to-face behavior modeling,” at least in the area of software training.

The fourth paper — *Asynchronous Learning: Emerging Issues for the 21st Century*, by Anil Aggarwal, Murray Turoff, Ron Legon, Gary Hackbarth, and Danni Fowler — is an attempt to produce a temporary stabilization (in the sense of ANT) regarding asynchronous learning by building on the shared experience of faculty members with several years of e-teaching experience. The authors discuss a variety of issues...
— volume, quality, economies of scale, strategic partnerships, hybridization of courses and programs, information and resource overload, changing nature of faculty’s job, assessment, competition, turbulent software environment and emergence of m-technologies. Understanding that:

we are entering a completely free and open marketplace for higher education, where the student becomes a true consumer, who can choose among a wide range of alternatives institutions for the same degree program without ever leaving home,

the authors argue that:

those who want to produce quality and successful systems for education … need to focus on the efficiency and design systems that easily integrate with each other … [they] should not be caught in dependencies on any one system and in inability to move to better systems.

The “View From the Industry” paper — **Academy-Industry Collaboration: The Example of Bridge E-Learning**, by Dany Lessard and Jacques Gaumond — presents an example of collaboration between companies and academic bodies in an attempt to build a community of practice linking academic and practitioners in an e-learning job. The idea is to create a consortium of partners to develop and share knowledge about e-learning and also to develop content and support for new learning materials. After a little more than 1 year of existence, Bridge E-Learning was able to derive its grounding principles, validate its business model, issue the first contents and provide community members with improvement in their e-learning knowledge and practice. This paper is an example of a possible business model to help break the barriers between academic bodies and companies and bridge the gap between initial education and life-long learning; not only regarding the public or the content of the trainings, but really at the level of learning system design.

Liliane Esnault (esnault@em-lyon.com) is a professor in information systems management, e-business, and project management at E.M.LYON, and project manager in e-learning development. She graduated from Ecole Supérieure de Physique et Chimie de Paris (ESPCI) and has a PhD in fundamental molecular physics. She is also teaching an e-business course in a French-Chinese executive MBA organized by the Rhône-Alpes Region and Shanghai University. She is currently involved in the European research project PALETTE (integrating an inoperable and extensible set — a palette — of innovative services to improve individual and organisational learning in communities of practice). She is the author of several writings linked with her areas of expertise: e-learning and pedagogy, information systems and technology management, project management, management of organizational networks. She also is a member of several associations devoted to information resources management, e-learning and network learning, and international projects management.