EIC Editorial: Vision Issue

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The field of learning technologies has always been sensitive to the innovations in the computer, information, and communication areas. Such prominent innovations as compact discs, the Internet, mobile phones, or the World Wide Web were promptly recognized by early adopters and pioneers, fueling new research directions related to the use of these innovations in education and, in just a few years, provided a large impact on the whole field. Can we expect that the time of innovation and rapid change is not over yet? Which modern research and technology advances will affect the field of learning technologies in the next 10 years? Which emerging research directions should the readers of the IEEE Transactions on Learning Technologies (TLT) pay attention to? Which innovative ideas should be noticed and explored?

To answer these questions, we approached several established leaders in the field of learning and information technologies and asked them to share their vision on some important emerging research directions which will likely drive the advancement of learning technologies over the next 10 years. In this attempt, we specifically targeted recognized “visionaries”—those who were recently invited to deliver a keynote talk at one of the leading research conferences on learning technologies. Each of these experts was asked to prepare a paper for our journal to present their vision: to highlight an interesting emerging area, explain its relevance for the field, discuss associated research problems, and provide some examples of pioneer research which address these problems. To assure quality, all invited papers went through a regular peer reviewing process and were extensively edited after review.

This vision issue of the journal is the final result of this process and we are delighted to present it to the readers and subscribers of TLT. The issue features five papers that highlight emerging issues in very different areas of the field of learning technologies.

In her paper “Toward Social Learning Environments,” Julita Vassileva rethinks different aspects of the traditional educational process in the context of Web 2.0 ideas and the needs of a new generation of learners. She discusses both new needs and new opportunities and presents a range of social learning environments designed to address them.

Judy Kay discusses the impact of emerging trends in user modeling and pervasive computing on e-learning. Her paper “Lifelong Learner Modeling for Lifelong Personalized Pervasive Learning” presents a vision of a lifelong user model as a core of personalized lifelong learning. She reviews the state of the art in several related research areas and presents several projects which explore some critical features of the future lifelong models.

The interoperability of learning infrastructures has been an important aspect from the beginning, yet is difficult to achieve. Erik Duval and Katrien Verbert, in their paper “On the Role of Technical Standards for Learning Technologies,” discuss the role of technical standards for learning technologies, including lessons learned and how standards matter for research.

The paper “Video Collaboratories for Research and Education: An Analysis of Collaboration Design Patterns” addresses new trends in the area of Computer-Supported Collaborative Learning (CSCL). The popularity of digital cameras, along with the growth of video content available through both digital libraries and Web 2.0 sites such as YouTube, promise to turn digital video into the most popular type of educational content and is a growing medium for research discoveries. In this paper, CSCL experts Roy Pea and Robb Lindgren discuss “video collaboratories” as an emerging kind of collaborative learning environment centered on the need for interacting conversationally with video media and metadata.

In the last paper of the issue, “Knowing, Communication, and Experiencing through Body and Emotion,” Kristina Höök explores the potential impact of the advancements in the field of human-computer interaction (HCI) on e-learning. Through several examples, the paper presents modern HCI trends, such as emotional and embodied interfaces, and discusses their application in a learning context.

We hope that these papers will be interesting for both researchers and practitioners in the field of learning technologies and that this issue will help the readers to draw a broader picture of the field development in the coming years.

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