Editorial

Editorial: Human Computer Interaction and Emerging Learning Technologies

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Abstract

When we design learning environments that incorporate new technologies, we need to consider many issues. One of these is human computer interaction (HCI). HCI has evolving into an interdisciplinary field that includes computer science, learning science, psychology, graphic design and media design, as well as several others. Devising effective HCI in highly immersive and participatory environments is the future work of learning technologists and instructional designers.

Keywords: emerging technologies; Human Computer Interaction; learning technologists; future systems

As learning technologists, we are excited about emerging technologies and their potential for education. We evaluate each new technology according to its potential for increased student participation and engagement. We measure the ways these technologies help our students achieve learning outcomes, as well as explore and experiment with emerging technologies to enrich our students' knowledge of the world and teach them skills they can transfer to their future careers.

When we design learning environments that incorporate new technologies, we need to consider many issues. One of these is human computer interaction (HCI). HCI has evolving into an interdisciplinary field that includes computer science, learning science, psychology, graphic design and media design, as well as several others. HCI extends from the academy to the technology industry itself in the form of user-interface (UI) and user experience (UX) designers. As digital computing becomes more pervasive, HCI has expanded to include almost any aspect of technology design.

HCI often misses the mark, however, when it comes to developing efficient and effective learning experiences. Software companies and marketing firms will include computer scientists, multimedia designers and behavioral scientists in their design teams. Nonetheless, HCI for pedagogy or instructional design often lags behind. Within the academy, we confront the assumption that educational psychologists can address these areas, and that HCI design expertise is not required. Or, when HCI courses are offered, design concerns specific to pedagogy are omitted. The need persists for HCI design that

explores the intersecting issues between computer science, design and learning theories. This will require development teams that incorporate more expertise on the interaction affordances that promote high quality, richly interactive educational experiences. Design experts, software developers, educational psychologists and experienced teachers will all need to work together. Absent this change, we will continue to hope for each new technology as it emerges and continue to be disappointed.

Additionally, we will need to take into account the changing nature of HCI itself. Only a decade ago, HCI was about finding the best ways to interact with graphics, text, icons, colors, forms and navigation systems on the World Wide Web. Future HCI will continue to include these topics, and will expand to include interactions within the Internet of Things, in the context of machine learning and AI agents, as well as the environments presented by virtual reality and augmented reality systems.

Devising effective HCI in these highly immersive and participatory environments is the future work of learning technologists and instructional designers. In every issue of Issues and Trends in Learning Technologies, we publish research studies by established and new scholars about how to use emerging technologies effectively to serve students' needs. Human computer interaction will remain a vital area of research and practice well into the future. We will seek to publish further content on the cutting edge of this crucial field.