

STATEMENT Carol Strohecker
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Dr. Carol Strohecker, Senior Research Scientist
Everyday Learning / Media Lab Europe
Sugar House Lane (Crane Street), Bellevue, Dublin 8, Ireland
+353 (0)87 419 4359 / +353 1 474 2872 / Fax +353 1 474 2809
stro@media.mit.edu / www.medialabeurope.org/el

Current situation in creating, sharing and reusing e-Learning Content

Progress in learning theory is not well reflected in eLearning programmes: models based on transmission of knowledge still dominate, rather than models based on construction of knowledge.

Key issues at stake / obstacles to progress

Moving toward models of knowledge construction complicates production and evaluation processes: platforms and interaction designs need to allow for more variegation in kinds of inputs and outputs, and duration and depth of learners' involvements; evaluation methods need to consider learners' variegated expressions, so evaluations take more time and learning progress is more difficult to ascertain; also learning progress becomes more a matter of subjective review, so criteria need to be clarified and negotiated. Furthermore business has some pressing problems and can't wait for resolutions of these larger issues.

Initial thoughts on what needs to be done

From a research perspective we need to better understand the extent and range of diversity in human thinking and learning. We need to design for creativity, for the making of knowledge individually and collectively by people of a broad range of styles and therefore differing needs in strategies for representation and action. In order to enable such designing for diversity we need to support research and experimentation into uses of modal combinations in inputs to and outputs from computational systems. These inquiries must be informed by technological progress as such systems are becoming increasingly powerful in terms of processing power, storage capacity, bandwidth, portability, resolution and modalities of visual, sonic and haptic input and output.

From a business perspective we need to improve learners' experiences through acknowledgment of contexts of use, and through content representations and strategies for interactions that address differences in thinking and approaches to constructive processes. We need to develop better techniques for metadata, ways of reusing legacy content, and standards ensuring operability across platforms and infrastructures.

Initial recommendations for policy actions and/or actions to be funded

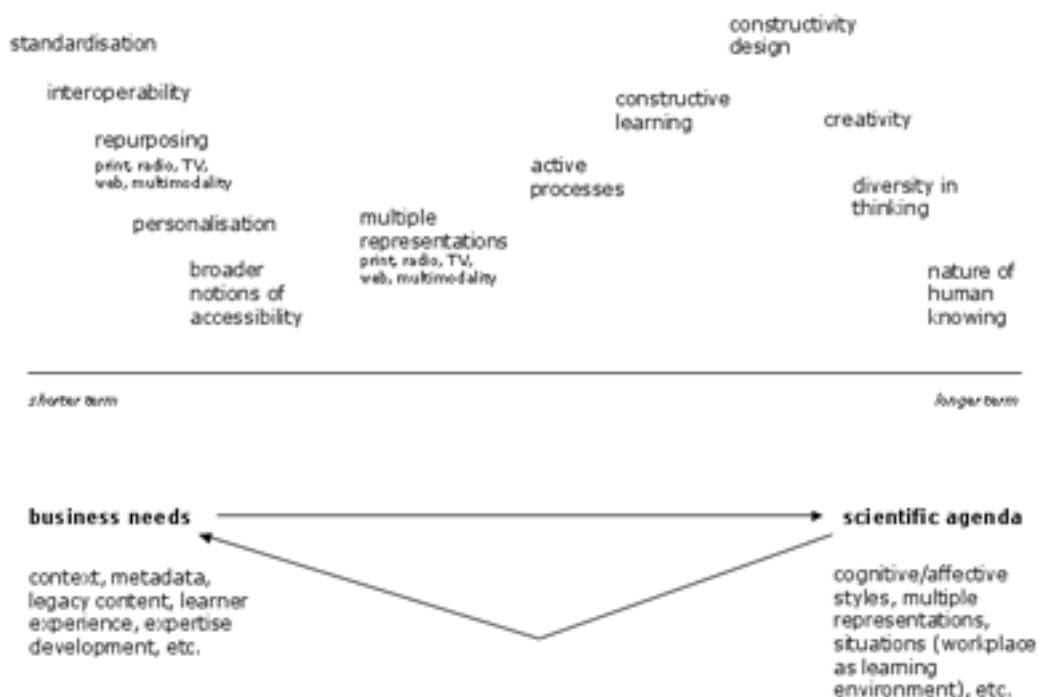
Formulate programmes in terms of shorter term objectives reflecting business needs and longer term objectives reflecting research needs, considering how objectives along this range can feed and inform one another. Begin with two points the research and business perspectives have in common: the need for multiple representations of ideas and the need for new kinds of environments as thoughtfully, participatorially designed contexts of use for learning tools.

From a research perspective, multiply representing an idea can accomplish two purposes: it is a strategy for enabling access to an idea by people with varying perceptual, cognitive and affective faculties; and – consistent with the adage that you don't really understand something unless you understand it in more than one way – it is also a strategy for individual learners to become more deeply involved with the idea. From a business perspective, multiply representing an idea within the context of a constructive system can be a strategy for deeper notions of personalisation and a new implication of "access"; it may also be a strategy for reuse and repurposing of content within and across print, radio, TV and web.

One of the agenda items needs to be an emphasis on design so we can address not just modes but qualities of representations, getting beyond trivial associations of modality to learning style (such as "thinking visually," thinking verbally," etc.). Rembrandt and Van Gogh could both make an image of a house but the images would differ, and one may be better suited than the other to a given expressive or communicative purpose; furthermore a student of Rembrandt would likely make a less skillful or refined image than would Rembrandt himself.

We also need to understand how context affects representations and how to best use modalities singly and in various combinations – illustrative, photographic, textual, spoken, musical, Foley, etc. We also need to develop ways of arriving at optimal representations – not just through notions of design expertise and renderings prior to learner encounters, but through new notions of learners' participatory designing appropriate to their own constructive activities.

From perspectives of both research and business, we need to understand and employ the importance of environments and situational contexts in learning programmes. Surrounding conditions can both support and inhibit learning and learners – epistemologically, socially and psychologically. Furthermore environments are dynamic, changing and "learning" in their own ways over time. Educational research and business innovation can come together in considering workplaces as learning environments in which employees grow in capabilities to learn as well as in skills needed for immediate tasks.





BIOGRAPHY Carol Strohecker

Carol Strohecker is a Senior Scientist and Principal Investigator of the Everyday Learning research group at Media Lab Europe, the European research partner of the MIT Media Lab. She is concerned with how people think and learn, and how their constructive interactions with objects, artifacts, and technologies can elicit and support these diverse processes.

Prior to joining MLE in 2001, Carol worked in the United States at MERL – Mitsubishi Electric Research Laboratories and in the Human Interface Group of Sun Microsystems. She earned the PhD of Media Arts and Sciences from the Massachusetts Institute of Technology in 1991, and the Master of Science in Visual Studies from MIT in 1986. She has served MIT's Media Arts and Sciences Programme as a Lecturer and as a Presidential Nominee on the MIT Corporation Visiting Committee.

Carol is on several research-related boards and international programme committees, and has been a Fellow of the Harvard University Graduate School of Design, the US National Endowment for the Arts, and the Massachusetts Council for the Arts and Humanities. She holds 4 US patents for her work in interactive media tools and methods.

Phone: +353 87 419 4359
Email: stro@media.mit.edu