Chapter XIII

Drawing on Design to Improve Evaluation of Computer Supported Collaborative Learning: Two Complementary Views

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ABSTRACT

This chapter addresses theoretical frameworks for the evaluation of computer-supported learning environments. It outlines the characteristics and obstacles this evaluation must face with regard to projects that design learning experiences, stressing the notion that human-computer interaction is imbedded in social context that is complex and dynamic. The authors examine how scenario-based design and program theory can contribute to
the design and evaluation of computer-supported collaborative learning (CSCL) and present a case study in which both approaches are applied. Based on the revealed complementary frameworks, a compelling approach is drafted that combines both of them. Our goal is to make CSCL designers more aware of the benefits of evaluative thinking in their work and to introduce two tangible approaches to evaluation that, when implemented as a design step, can strengthen CSCL initiatives.

PROGRAM EVALUATION IN CONTEXT OF COMPUTER-SUPPORTED COLLABORATIVE LEARNING

This chapter addresses theoretical frameworks of evaluating computer-supported learning environments. We describe two approaches that facilitate the design for evaluation of computer-supported collaborative learning (CSCL) and then proffer ways in which the two approaches can be used together. Our perspectives on these matters are based, in part, on experiences as directors of evaluation in laboratories in the United States and Germany within the Wallenberg Global Learning Network (WGLN). Our collective experience includes work on technology and teaching reform in higher education, program evaluation theory, evaluation of CSCL and learning design.

It is increasingly common for the academic community at large (and grant-giving organizations, in particular) to call for some kind of program evaluation as an integral part of proposals for the development of computer-supported learning environments. Within this call, we see a growing need for formative evaluation approaches that address the specific requirements and characteristics of computer-supported learning environments (Keil-Slawik, 1999). Keil-Slawik (1999) points out that one of the main problems with evaluating computer-supported learning environments is that some goals and opportunities just arise in the course of the development process and cannot be specified in advance. Therefore an evaluation that aims to test if the specified goals were met is not helpful. We believe that this is due to the fact that design in this context addresses ill-structured and situated problems. Therefore it requires evolutionary and cyclic processes. As Weiss (1998) notes, “much evaluation is done by investigating outcomes without much attention to the paths by which they were produced” (p.55). We argue that the evaluation processes in CSCL projects must draw out “the reality of the program rather than its illusion” (Weiss, 1998, p. 49).

For investigators designing and carrying out projects at the intersection of information and communication technology (ICT) and the learning sciences, evaluation is difficult. Evaluation efforts are often subverted by a myriad of
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