

Wiki Research: Knowledge Advancement and Design

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Abstract: This workshop focuses on two interrelated themes; knowledge advancement and design. The *knowledge advancement theme* explores the educational use of wikis in different institutional settings and the challenges that arise as the open architecture and shared authorship features of wiki software meet practices grounded in concepts of individual learning. This links to the *design theme*, in which the affordances and specific features of wiki technology are considered in relation to designs to support collaborative knowledge building. Designs that afford spaces for teachers and other types of experts will also be in focus. Participants contribute to a 'wiki on wiki research' in advance of the workshop, coordinated by the organizers to take up relevant issues. A CSCL research network on wikis using a redesigned XWiki is an intended outcome.

Goals

The goal of the workshop is to identify emerging research issues in the study of relationships between knowledge advancement and wiki technology. The rationale for this goal is found in an increasing interest in collective knowledge building and creation and the need to take on complex challenges or problems that would typically be beyond the capacity of the individual (Hakkarainen, Palonen, Paavola, & Lehtinen, 2004; Lund & Smørdal, 2006). Wikis, with their collaborative and collective features, are an interesting 'social software' that seems to hold potential for supporting collective knowledge building activities inside, outside and across institutional settings. The open architecture of wikis differs from more structured types of collaborative environments such as learning management systems. At the same time, it is argued that the CSCL community may benefit from examining wiki's potential for inquiry based and exploratory learning activities and for supporting relationships between individual and typically collectively generated results.

Themes

There are two interrelated themes that we consider particularly relevant for wiki research, namely design and knowledge advancement. Research on knowledge advancement in relation to wiki technology explores the educational use of wikis in different learning settings, and how such use challenges established practices, tasks, and concepts of collaborative knowledge building. In particular, wikis seem to be conducive to authoring and publishing jointly produced information resources. However, tensions emerge when the historically individual and private character of writing is mediated by a technology that has shared ownership and transparency as its main features. Therefore, an emerging research issue in the study of knowledge advancement in institutional learning settings is the critical examination of wiki features that may facilitate transitions from individual to collective epistemology. What are the tensions between the collaborative writing practices that characterize wikis on the one hand, and the knowledge advancement practices in school and workplace contexts, for example, on the other?

The design theme addresses the design of affordances and domain specific features in wiki technology. An emerging research issue related to technologies that develop 'outside institutions' is the characteristics they develop when taken up in learning contexts in institutional settings. Therefore this workshop investigates design principles and affordances that uphold the collaborative, democratic features of wiki architecture when used in the more individual, goal-directed efforts in school and work settings (Blevis, Lim & Ozakca, 2005). For example, in the HCI and design (HCI/d) program at the School of Informatics at Indiana University Bloomington, an installation of wiki-based collaboration tools is presently in use by both faculty and students in both research and teaching contexts and it has been undergoing considerable iterative development. The wiki collection is used not only as a means of collaborative co-construction of knowledge, but also as course management software and virtual world support for physical world design studio culture. The collection is organized according to a deontic logic—a logic of permissions—which allows some contributions to be private to individuals, teams, classes, and research groups, while allowing other contributions to be public, mirroring the practices of real-world design studios.

In workplaces, there is interest in convergences between design principles from CSCL research and the ambiguous architecture of wikis. In schools, concerns center on developing potential in wiki technology to support teacher and student participation in collaborative knowledge advancement. Tasks that are suited to individual and co-located settings, for example, may not necessarily align with collective and distributed settings. Our previous research on wikis shows that we need assignments that take collaborative problem solving as a point of departure (e.g. Lund, forthcoming, Lund & Smørdal, 2006). This involves producing a result that amounts to more than the sum of its individual contributions and that cannot be reduced its separate parts. The design theme thus specifically addresses how prompts, categories and meta-level features may be inscribed in the wiki learning environments to scaffold collaborative learning activities (Ludvigsen and Mørch, 2003).

Expected Outcomes

We believe that CSCL perspectives have an important contribution to make to research that is exploring the potential of social media for educational use. The contribution of the workshop is to make apparent this link between the potential of wiki technology and CSCL perspectives on 'how to' design for collaborative practices of knowledge advancement. The use of wiki-based approach in this context as a starting point for exploring how the wiki notions of shared construction of knowledge can be applied and extended to scaffold complex collaborations in institutional and educational settings, and in mixed virtual and physical world contexts. The importance of aligning educational practices in institutional settings with the technological and social affordances of wikis is one contribution that CSCL research brings to the table. The importance of accountability, the significance of balancing freedom and structure in designing task constructions, the need to include space for the teacher/expert, and how to create specific opportunities for reflection is valuable CSCL knowledge to take into account as the ambiguous structures of social software make their way into institutional settings.

In return, the transparency of participation in wiki productions affords researchers the possibility to glean data from microgenetic (interaction), macrogenetic (the aggregated wiki production), and ontogenetic (individual trajectory) levels. For CSCL research, wikis thus contribute new opportunities to analyze how these processes mutually constitute collective aspects of collaboration and knowledge advancement. Furthermore, the specifically social character of wiki applications, which emerged as a means of engaging communities outside of schools and other learning institutions, also invites into the CSCL research a greater concern with the broader community and with issues of democracy and participation.

The strong link between knowledge advancement and design research within CSCL is at the core of this workshop that investigates the social and educational use of wikis. These issues are explored 'hands-on' in advance, during, and after the workshop. The organizers from InterMedia have established a wiki environment at www.intermedia.uio.no/wikiresearch/ that will be sustained in order to pursue research issues before but also after the conference, as an outcome of the workshop. The environment is based on XWiki (<http://www.xwiki.org>) and will function as a shared object for a network of wiki researchers. Based on discussions and activities in the wiki and in the workshop, the wiki will be redesigned and serve as an open research resource for the broader CSCL community.

References

- Blevis, E., Lim, Y. K., & Ozakca, M. (2005). The Design Exchange: A Collaborative Online Community for Designers based on Shared Construction of Design Knowledge. 11th International Conference on Human-Computer Interaction: Online Communities and Social Computing, Las Vegas, NV (10 pages)
- Engeström, Y. (1987). Learning by Expanding: An Activity - Theoretical Approach to Developmental Research. Helsinki: Orienta-konsultit.
- Hakkarainen, K., Palonen, T., Paavola, S., & Lehtinen, E. (2004). Communities of Networked Expertise. Amsterdam: Elsevier/Earli.
- Ludvigsen, S., & Mørch, A. (2003). Categorisation in Knowledge Building: Task specific argumentation in a co-located CSCL environment. In B. Wasson (Ed.), Designing for Change in Networked Learning Environments (pp. 67-77): Kluwer Academic Pub.
- Lund, A. (forthcoming). Wikis: a collective approach to language production. *ReCALL*.
- Lund, A., & Smørdal, O. (2006). Is There a Space for the Teacher in a Wiki? In Proceedings of the 2006 International Symposium on Wikis (Wikisym '06) (pp. 37-46). Odense, Denmark: ACM Press.