Chapter X

Tools and Methods for Supporting Online Learning Communities and Their Evaluation

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Abstract

Scientific observation during the last few years has indicated that learning on the Web in many cases is accompanied and promoted by the creation and maintenance of an online learning community. The goal of this chapter is to define and describe the notion of online communities, describe their types and core functionalities, and focus on the specific domain of online learning communities. More specifically, the chapter presents an overall categorization of the technological tools used for supporting online learning communities and suggests a set of general-purpose evalu-
ation methods suitable for assessing quality aspects of these tools, along with a method for the statistical analysis of the derived data. The chapter concludes with a discussion on foreseen future trends concerning ways to enhance the everyday life of online learning community inhabitants and upgrade the effect of online teaching and learning.

**Introduction**

Online communities have been studied by a number of scientific domains including communication studies, sociology, psychology, information systems, business studies, computing, information science, and newly formed departments of cyber or Internet studies (Preece, Maloney-Krichmar, & Abras, 2003). Their evolution depended primarily on the evolution of the supportive technology that provided the communicational infrastructure for bringing community members together. The first medium deployed for community support was e-mail, which was developed in 1972 and, in its primitive form, allowed only point-to-point communication. One-to-many postings were enabled by listserv technology, which became available after 1975. Their basic form has not changed much until today, and they are still used by some online communities. In the 1980s bulletin boards appeared and allowed the threading of postings on a topic-by-topic basis. Similar functionalities were also provided by Usenet News, which along with the rest of the technologies mentioned so far, comprise the set of asynchronous communication technologies deployed by online communities. Chat systems on the other hand (IRC, AOL Instant Messenger, etc.) belong to the set of synchronous communication technologies used for supporting online communities.

The advent of the World Wide Web in 1992 led to the widespread use of Web sites and the formation of online community groups supported by integrated communication infrastructures and graphical environments in 2 or 3 dimensions (e.g., Palace—www.palace.com and Activeworlds—www.activeworlds.com). The next step was to move to more sophisticated interfaces and interaction modes like the ones used in gaming worlds (Doom, Quake, etc.), where users are represented as avatars and interact through text, sound, and streaming video. In recent years, there have been strong and highly populated communities gathered around a certain technology, such as MP3, or open source. Today, with the wide availability of Internet telephone, streaming video, photographs, sound, voice Web cams, blogs, and wikis, the technological alternatives for setting up and maintaining an online community are numerous (Preece et al., 2003).

The notion of setting up user communities is of vital importance in the framework of e-learning. Learning is a process closely connected to social interaction (Hiltz,
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