Scaling Educational Online Communities: The Role of Volunteerism in Doing Large-Scale Educational Projects Online

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Abstract: Educational online communities provide new opportunities for adult participation in the classroom. However, working with online adults presents unique challenges for designers of educational technologies as well. In this panel, we will examine the issues affecting the design educational online communities that integrate adults, as well as the role that adults play in making these communities scale to many classrooms.

Keywords: computer-mediated communication, discourse, distributed learning environments, life-long learning

Panel Description

School and community are inevitably intertwined. Schools have a need for community involvement, from PTA (Parent-Teacher Association) attendance to field trips to volunteers. Today, the Internet is changing the very concept of community, removing geographic and temporal boundaries, and making available a broad set of resources. The Internet has affordances that we believe can help members of the adult community to play more of an active role in the education process.

Volunteers are an important part of helping schools live up to their educational potential and play an essential role in building bridges between schools and community. Through volunteers, students see the rich resources available in their local community – they begin to see their school as part of a larger community and the larger community as an important part of their school. Volunteers help remove work load from teachers (tutors), provide role-models for students (mentors), and add to classroom content (scientists, historians), just to name a few.

In this new era, online volunteers are important to building bridges between school and online community. For some, the initial dream for the Internet in education was that each student would have direct access to Nobel Prize winners, award-winning historians, and the like. While this is unlikely (there just are not enough Nobel Prize winners to go around), creating online communities where students can interact with the many scientists, historians, and other established professionals in the field is quite possible. Kids do not need Nobel-quality advice, but can benefit significantly from thoughtful input from intelligent adults with relevant domain knowledge.

In educational online communities, volunteers provide tailored scientific explanations to students having trouble doing scientific experiments, mentoring relationships to students in need of guidance, and act as historical resources by sharing their life experiences. As the communities grow larger, the need for these volunteers grows accordingly.

This panel will discuss four projects that rely on volunteers to reach their full educational potential: The CoVis Mentor Database, Knowledge Forum, One Sky Many Voices, and the Online Community of History. Panel participants will discuss the role of volunteers in making an online education project work on a large scale. Issues such as recruiting, the contribution/personal gain trade-off, management of deviance (inappropriate behavior such as use of profanity, personal attacks, and the like), and timetable issues will be discussed in detail.

In addition, the panel will examine issues affecting the scaling of online communities generally, such as classroom integration, generation of teaching materials that can be used in many settings, and the architectural issues involved in designing educational software which can be used worldwide.

The primary goal of this panel is to reach a consensus on the fundamental research issues involved in integrating volunteers into educational online communities. What do we know about the educational value volunteers add to an online community? What are the costs of involving volunteers? How can we best move forward in designing meaningful software and classroom interventions that involve online adults?

To this end, we are designing the session to minimize project reports and emphasize interaction among panel members and between the panel and audience. The panel will be organized as follows:

1. Project descriptions (21 minutes). The session will begin with short (no more than 7 minute) background talks from each presenter on their work and its relevance to this panel. This is meant mainly to familiarize the audience with the work of each panelist.

2. Panel discussion (30 minutes). The moderator will pose questions to the panel. These questions will be difficult – they are intended to probe deeply into what is known about volunteers in online communities and what research remains.

3. Mapping the research space (remaining time). The final segment of the panel will be devoted to audience questions as well as panel discussion of the issues at hand. Our hope is that, with audience assistance, the panel will be able to map out the research issues for volunteers in online communities and begin to create a coherent agenda for future work.

Panelists

Panelists for this session each have developed an educational online community that has a significant role for adults. While each project is in a different area (oral history, science mentoring, and global science), they each share a fundamental interest in the recruiting online volunteers, improving discourse between volunteers and students, and creating a role for volunteers in the scaling of the community.

Jason B. Ellis

We are building an Online Community of History – a constructionist online community that supports kids interviewing elders on the Internet to build up a shared database of oral history. Within this community, elders can share stories they find personally meaningful and children learn history from people who have actually lived it.

To date, we have done two pilot studies with the help of volunteers, looking at the ability of existing technology (e-mail and mailing lists) to support student-elder discourse online (Ellis, Bruckman et al. 1999). In the initial pilot, World War II veterans answered 8th grade students' questions about the war via e-mail. In the second, larger scale pilot, 6th grade kids interviewed elders about their experiences in the Civil Rights Years, and built artifacts to reflect what they learned. In each case, the involvement of elder volunteers (their stories and their guidance) was fundamental to the success of the project. In order to assure quality kid-elder interaction, the recruiting, briefing, and managing of volunteering elders was important as well. Lessons learned from these pilot studies are currently being used to build a software system that will provide a richer medium for kid-elder interaction online, while increasing the potential for scalability to many classrooms.

In this panel, we will discuss the role elder volunteers have played in our pilot studies, and the expanded roles they will play in the community we are designing. Artifacts and examples of kid-elder discourse will be presented along with lessons learned for successful kid-elder interaction. A framework for integrating elder contributions with standard curriculum materials will be discussed as well.

For more on Ellis, see http://www.cc.gatech.edu/~jellis/

D. Kevin O'Neill

Kevin O'Neill's research on on-line mentoring relationships (or "telementoring") began in the context of the NSF-funded Learning Through Collaborative Visualization (CoVis) project, at Northwestern University (Pea May, 1993). In that setting, weeks-long partnerships between volunteer scientists and high school students proved to be a useful strategy for enabling ambitious project-based science (Wagner 1996; O'Neill and Gomez 1998; O'Neill, Wagner et al. November, 1996). These relationships also appeared to improve the quality of the written arguments that students produced about their own research (O'Neill March, 1997).

Later, in collaboration with the CSILE/Knowledge Forum team at the University of Toronto, O'Neill explored the potential of a shared asynchronous workspace (a Knowledge Forum(tm) database) to overcome some of the limitations inherent in e-mail for supporting the development and maintenance of mentoring relationships, and the development of mentoring expertise. In particular, it was found that telementoring dialogues in the Knowledge Forum environment afforded and encouraged a kind of "opportunistic model-seeking" behavior. This enabled mentors to better evaluate their work with students by seeing their peers in action.

Keeping volunteers engaged over time and developing their abilities as mentors or tutors are important and interrelated issues. O'Neill will discuss interview work with volunteer telementors that focused on the motivations they carry into their work with children and the rewards they carry out of it. A recurring theme in these interviews is the motivational importance of learning how to be a better mentor. O'Neill will also discuss results from recent design experiments in Toronto, in which a combination of software affordances and social arrangements allowed mentors to opportunistically observe one another at work with students. This strategy appears to hold promise for both training and retaining volunteers, since it provides mentors with ready access to models of expert telementoring, while avoiding an onerous up-front period of training.

For more on O'Neill, see http://csile.oise.on.ca/TM-KB/Pages/oneill.html

Nancy Butler Songer

It is no small task to bring together the collaborative efforts of the Detroit Public Schools, 11,000 4-9th grade students and teachers throughout North America, university professors in Education and Atmospheric Science, and graduate students in Education, Engineering, Design and Atmospheric Science. However, in order to meet our goals, this is the team of experts required. The *One Sky, Many Voices Project* (Songer 1996) is a University of Michigan-based research project which focuses on helping students, teachers, and scientists to best use leading edge technologies and each other to collaboratively study and make predictions about current atmospheric and environmental science issues.

Two times each year, *One Sky, Many Voices* utilizes Internet-based software products of our own design and sound educational approaches to support tens of thousands of individuals in coordinated, collaborative study, such as tracking and predicting current hurricanes in the Atlantic along with the National Hurricane Center scientists. Students learn traditional science content, an appreciation of the power and excitement of tracking and studying current events, and new understandings of the potential of network-based learning and collaboration tools. The software tools are Director-created world-wide-web Internet browsers housed on CD-ROMs capable of allowing users to easily study real-time scientific events. CD-ROMs also contain archived weather maps, simulations and archived data to assist classrooms where Internet connections are unreliable or unavailable.

In this panel we will discuss our work to bring together this broad range of individuals, including undergraduate and graduate students in the sciences, education and liberal arts, to support and study new models of learning and interdisciplinary research. In particular, we will share the artifacts and results of the 250 classroom-based sites enrolled in our next program, called Kids as Global Scientists: Weather 2000.

For more on Songer, see http://www.onesky.umich.edu/

Amy S. Bruckman (moderator)

Amy Bruckman is an Assistant Professor in the College of Computing at the Georgia Institute of Technology. She and her students in the Electronic Learning Communities (ELC) research group do research on online communities and education. Current projects include MOOSE Crossing (a text-based virtual world for kids), MediaMOO (a professional community for media researchers, The Turing Game (a game about identity and deception online), and an Online Community of History (with Jason Ellis). Amy received her PhD from the MIT Media Lab's Epistemology and Learning group in 1997. More information about her work is available at http://www.cc.gatech.edu/~asb/

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