

An Introduction to the Special Issue: Designing for Virtual Communities in the Service of Learning

Sasha A. Barab

Instructional Systems Technology, Indiana University, Bloomington, Indiana, USA

Currently, numerous educators and policymakers are advocating for a move away from “teacher-centered” models of instruction and toward more “learner-centered” and “community-based” models. However, at present the word “community” is at risk of losing its meaning. We have little appreciation and few criteria for distinguishing between a *community* of learners and a *group* of students learning collaboratively (Barab & Duffy, 2000; Grossman et al., 2000; Wineburg & Grossman, 1998). Given the proliferation of terms such as “communities of learners,” “discourse communities,” “learning communities,” “knowledge-building communities,” “school communities,” and “communities of practice,” it is clear that

community has become an obligatory appendage to every educational innovation. Yet aside from linguistic kinship, it is not clear what features, if any, are shared across terms. This confusion is most pronounced in the ubiquitous “virtual community,” where, by paying a fee or typing a password, anyone who visits a web site automatically becomes a “member” of the community. . . . Groups of people become community, or so it would seem, by the flourish of a researcher’s pen. (Grossman et al., 2000, p. 2, italics in original)

Too little of the education literature provides clear criteria for what does and does not constitute community; the term is too often employed as a slogan rather than as an analytical category. We also know little about the educational value of employing a community model for supporting learning.

While many of us are concerned with the loss of communal spaces and ties that broaden one’s sense of self be-

yond the “me” or “I” and into the “we” and “us” (Putnam, 2001), less clear are the educational advantages of a community approach in terms of learning curricular content. We know even less about whether something resembling community can be designed, and how to measure whether it has emerged. This is glaringly apparent in terms of virtual communities where designers are employing *usability* strategies to develop innovative designs, but have not adequately taken into account issues of *sociability*—that is, how does the design make links to and support people’s social interactions, focusing on issues of trust, time, value, collaboration, and gatekeeping (Preece, 2000). Regardless, there is a rapid growth in the efforts to create web-based learning environments to supplement or replace traditional modes and even institutions of learning.

Developing an online forum is not very difficult. Almost any “off-the-shelf” listserv or web-based conferencing system can provide an adequate underlying technology. However, attracting to the forum a group of people who will form a community is a considerable accomplishment. It is common for many people to visit and leave without posting messages and for many others to stay and only read public messages (lurking). Further, when online discussions are unmoderated, some debates can be transformed into hostile “flame wars” that all too easily spiral out of control (Sproull & Kiesler, 1986, 1991; Herring et al., 2002).¹ Nonetheless, there are many examples of sustained civil online groups, some of which have important communal dimensions.

According to Barab and Duffy (2000) a community has a significant history, a shared cosmology, a common cultural and historical heritage, social interdependence, and a reproduction cycle. With respect to fostering learning, many current educators are interested in creating new intentional online communities that support learning. The intentionality is often linked to the start of a new course or professional development effort. In these cases, identifying potential participants is usually easy. However, we know relatively little about how to develop such online (or online and offline) intentional communities (see Kim,

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Address correspondence to Sasha A. Barab, School of Education, Room 2232, 201 N. Rose Ave, Bloomington, IN 47405, USA. E-mail: sbarab@indiana.edu

2000; Wenger et al., 2002, for useful exceptions). Many such efforts end with fragile and even fractured groups communicating intermittently. It is yet another leap to have such communities support substantial learning (rather than other pursuits, such as conviviality). *Building online communities in the service of learning is a major accomplishment about which we have much to learn.*

As more and more of these online communities are being designed we must ask whether they are succeeding and what exactly they are accomplishing. The articles in this special issue are frank in examining what we *do* and *do not* know about the processes and practices of designing communities to support learning. Some of the central questions that these articles address include: What constitutes community? How do these electronic environments relate to more familiar place-based pedagogical ones? How well do the techniques and constructs that are used to understand the processes of learning and enculturation in traditional face-to-face community settings suffice for these new settings? What is the educational value of a community approach to learning? How do we capture and what are the relations among individual, group, and community trajectories?

Specifically, the articles in this special issue explore the theoretical, design, learning, and methodological questions with respect to designing for and researching online communities to support learning. I next highlight what I mean by community, a topic that is examined in each of the manuscripts. Following this discussion on community, I then discuss the challenges of design through which I highlight the arguments being made by each of the authors in this special issue. Taken as a collection, these articles, with authors coming from diverse academic backgrounds (information science, instructional systems technology, educational psychology, and anthropology), point to the challenges and complex tensions that emerge when designing for online community, especially when the focal practice of the community is about learning.

COMING TO TERMS WITH COMMUNITY

There is a long social-theoretical history of the concept of community. Different social scientists have characterized communities in different ways in order to understand different social phenomena and also based on different underlying social philosophies. Anthropologists traditionally studied preindustrial societies, which involved village-scale communities where kinship was a basic organizing element. In the early 20th century, sociologists who studied urbanization were especially interested in the contrasts between tightly woven village life and the more multicultural and possibly alienating cities. In the last few decades, sociologists have examined communities that are not place based—art worlds whose participants form

strong ties across national boundaries and professions whose communities often constitute standards of good practice nationally, rather than only locally (Becker, 1984; Wellman & Gulia, 1999).² Political scientists have been interested in political groupings—from local to national scale—including those “imagined communities” that could fuel nationalistic political movements. Progressive urban planners have been interested in place-based communities to identify those who should have a voice in planning or to create “urban villages” where neighborly relationships provide important kinds of sociality as well as safer neighborhoods.

A conception of community that helps to advance one of these research or action agendas may not be as helpful for understanding communities that can support learning. For example, anthropologist Sharon Traweek (1988) defined a community as a “group of people who have a shared past, hope to have a shared future, have some means of acquiring new members, and have some means of recognizing and maintaining differences between themselves and other communities” (p. 6). This conception worked well for her study of experimental particle physics collaborations; it is less helpful for understanding the key themes to support in a group of students in a 10-week online course (i.e., little shared past, perhaps no shared future, no need for recruitment or even differentiation from other courses). However, it may be more relevant to understanding relationships among teachers in an ongoing open-ended professional development group. Using the definition advanced by Barab, MaKinster, and Scheckler (this volume), I view an online community as “*a persistent, sustained [socio-technical] network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise*” (p. 23, italics in original).

Political sociologist Robert Bellah and his colleagues conceived of a community as a “a group of people who are socially interdependent, who participate together in discussion and decision making, and who share certain practices that both define the community and are nurtured by it” (Bellah et al., 1985, p. 333). This conception may be helpful for identifying key issues for learning in both the 10-week course and for the ongoing professional development group. Lave and Wenger (1991) advanced the term “communities of practice” to capture the importance of activity in fusing individuals to communities, and of communities in legitimizing individual practices. Lave and Wenger (1991) in defining a community of practice stated:

[Community does not] imply necessarily co-presence, a well-defined identifiable group, or socially visible boundaries. It does imply participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities. (p. 98)

Predicated on work in anthropology (Geertz, 1983; Jackson, 1996; Lave & Wenger, 1991; Rogoff, 1990; Traweek, 1988; Wenger, 1998), sociology (Shaffer & Anundsen, 1993; Wellman, 1999), and education (Bradsher & Hogan, 1995; Brown et al., 1994; Brown & Duguid, 1991; Lipman, 1988; Quartz, 1995; Roth, 1998; Scardamalia & Bereiter, 1993; Sergiovanni, 1994; Tanner, 1997), Barab and Duffy (2000) identified four features that are consistently present and, they argued, requisite of communities of practice. First, they conceptualized a community as having a significant history, a common cultural and historical heritage. Second, they described communities as having a shared cosmology, especially related to shared goals, practices, belief systems, and collective stories that capture canonical practices (Brown & Campione, 1990). Third, the notion of community suggests something larger than any one member; as a part of something larger, the various members form a collective whole as they work toward the joint goals of the community and its members (Lemke, 1997; Rogoff, 1990). Fourth, a community is constantly reproducing itself such that new members contribute, support, and eventually lead the community into the future; new members move from peripheral participant to core member through a process of enculturation (Lave, 1988, 1993; Wenger, 1998). Barab, MaKinster, and Scheckler (this volume) introduce additional characteristics: a common practice and/or mutual enterprise; opportunities for interactions and participation; meaningful relationships; and respect for diverse perspectives and minority views.

Still others have different lists (see for example, Wenger et al., 2002). The important point is not the specifics of the list but developing an appreciation for the complexity of community, a complexity that is only exacerbated when one wishes to intentionally design for its emergence. A central focus of this volume is to better understand what constitutes “community” in ways that are especially relevant for learning and to investigate the difficulties of designing for the emergence of one online. Below, I briefly highlight some of the struggles that each author discusses with the broader goal of illuminating this complexity and setting the stage for an appreciation of the arguments being made by each of the authors in this special issue.

DESIGNING FOR VIRTUAL COMMUNITY

At one level, each of the words in this heading can be thought of as a problematic issue for investigation. In the previous section, I discussed the term *community* a point that is directly taken up and “problematized” in the discussions by all four authors. Taking the term *virtual* as another example, the term implies something that is different than the “real.” However, given the fluency with which people are transacting with the technical world, one

wonders how to distinguish between the virtual and the real. As a case in point, consider the telephone. At one time, communicating on the telephone must have seemed like a “virtual” discussion. However, today many who use telephones do not consider these types of conversations as virtual, yet these same people probably consider an online synchronous discussion to be a virtual conversation. So what is it that constitutes something as virtual—is it an extension in time and space from what we directly experience with our senses? It is a significant question when one considers the design of an intimate space in which, as pointed out by all the authors of this special issue, trust is fundamental to participation.

Another problematic term is *design*, something that is discussed in great detail and that is the overriding focus of each of the authors in this special issue. In fact, the problematic nature of designing something like community led the authors to decide to change the title of this special issue from “Designing Virtual Communities . . .” to “Designing *for* Virtual Communities . . .” While a seemingly trivial change, it captures the overriding assumption of each of the authors that one cannot simply design community for another, but rather community is something that must evolve with a group around their particular needs and for purposes that they value as meaningful. In fact, a core struggle emerges when one designs something for someone else to use, especially when the desired outcome of community participation is to support the learning (or even reform) of another group. This tension is directly highlighted in all four of the articles included in this special issue.

First, Barab et al. discuss the challenges of supporting the development of the Inquiry Learning Forum (<http://ilf.crlt.indiana.edu>), an online community of practice for grade 5–12 mathematics and science teachers. Their project involves the design and evaluation of an electronic knowledge network through which in-service and pre-service mathematics and science teachers can create, reflect, share, and improve their inquiry-based pedagogical practices. Their research examines the interplay among a variety of variables that characterize the dynamics of building a social network and in understanding the challenges associated with fostering, sustaining, and scaling a web-supported community in which the value of sharing one’s practice and engaging in the dialogue outweighs the “costs” associated with participation. Toward this end, they adopt and expand Wenger’s (1998) notion of dualities to characterize the emergent design and use struggles. Their research suggests that designing for virtual communities involves balancing and leveraging complex dualities (participation/reification; designed/emergent; local/global; identification/negotiation, online/face-to-face; coherence/diversity) from the “inside” rather than applying some set of design principles from the “outside.” This article provides an illuminative case study from which others can

more readily identify patterns occurring in their own interventions and navigate the challenges they face more intelligently.

Kling and Courtright, also researching the Inquiry Learning Forum, critique the oversimplification of some authors' use of the word *community*, distinguishing between empirical observations of groups in practice and theoretical aspirations or assumptions. Their analysis further suggests that rather than thinking about "instructional technology-led group development," designers would be more usefully served by thinking about "instructional technology-supported group development." They also show how developing a group into a community is a major accomplishment that requires special processes and practices to develop trust among the participants, and the experience is often both frustrating and satisfying for many of the participants. This argument is consistent with the arguments being advanced by Schlager and Fusco (this volume) and Schwen and Hara (this volume) as well.

Over the past several years, Schlager and Fusco have been developing and refining the sociotechnical infrastructure of a virtual environment called Tapped In (www.tappedin.org), intended to support the online activities of a large and diverse community of education professionals. While they have succeeded in growing and supporting a thriving community of thousands of education professionals, in this article they question whether the users of the Tapped In environment collectively constitute a *community of practice* and whether their participation in the Tapped In environment fundamentally changes their teaching practices outside of Tapped In. Consistent with Kling's argument, they similarly propose that an effective model of design would not begin with the virtual environment but with locating existing functioning groups and determining how to best use technological infrastructures to support their continued growth. This model is also consistent with the findings of Barab et al., whose data suggest that the Inquiry Learning Forum was most successful in supporting existing groups of inquiry rather than growing new ones.

Schwen and Hara, along similar lines, further challenge the overly simplistic assumption that communities can just be built, online or face to face. Their article summarizes and then compares and contrasts four cases that describe rich patterns of online and face-to-face workplace community. Based on their interpretations from these cases, they challenge some of the theoretical optimism around building online community by presenting five "cautionary notes" to designers attempting to build communities of practice regardless of whether they employ technical supports. On a related note, they suggest that we are at the beginning stages of understanding what it means to design for communities of practice, and it is presump-

tuously and potentially irresponsible to be advancing prescriptive theories; instead, they argue that what is needed is more descriptive accounts from which the field can begin to build petite generalizations as designers apply what is being learned from these accounts in their own work.

SUMMARY

We are currently in an exciting time in which pedagogical theory and technological advances have created an opportunity to design innovative and powerful environments to support learning. I also have this enthusiasm and have had the luxury of researching and designing a number of interventions based on a community approach to support learning. However, as researchers in the learning sciences community, we need to be careful not to get caught up in the whirlwind of theoretical aspirations and the current zeitgeist. We need to be visionary while at the same time examining empirical data. As educators and research scientists, we need to be critical about our claims. Non-evidence-based claims can lead to oversimplistic interpretations and, to the extent that these claims result in designs that impact real people, damaging consequences for those we are trying to help.

In this special issue, the authors have worked to balance their claims, remaining optimistic and visionary while at the same time avoiding hyperbole and unsubstantiated assumptions. Just as design work is filled with tensions, so is advancing new theory. We hope that readers will develop useful insights into their own work, sharpening their critical gaze while at the same time advancing their thinking about what can be done. Innovation is not a simplistic practice; it involves taking risks and making mistakes. However, good research involves examining these risks and what is being learned. Each of the authors has worked to present his or her struggles and lessons learned in a manner that not only captures the local struggles but provides them in a manner that could be useful to readers in their own work. To the extent that this special issue can support the field in designing for new communities and facilitating new groups of learners, then we accomplished our goals. We look forward to hearing reactions and learning from you, the reader, as you engage in your design struggles and successes as well.

NOTES

1. Flaming was identified in the mid-1980s: Sproull and Kiesler (1986, 1991).
2. Wellman builds on Becker (1984).

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