CHAPTER 25

New Literacies and Community Inquiry

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Be the change you want to see in the world. (Gandhi)

Introduction

Community inquiry research focuses on people participating with others, on the lived experiences of feeling, thinking, acting, and communicating. It sees literacy as part of living in the world, not simply as a skill to be acquired in the classroom. Inquiry is central, because as people live, they encounter challenges. Through inquiry, people recognize a problem, mobilize resources, engage actively to resolve it, collaborate, and reflect on the experience. Making sense of experience in this way, and doing so in concert with others in embodied, historical circumstances, is fundamental to learning.

This chapter reviews literature addressing the following question: What is the relationship of new literacies to community inquiry? We are concerned with how new technologies highlight enduring issues of community and, conversely, how communities change new technologies. These concerns are embedded within larger issues of participation, citizenship, cooperation, community membership, change, and collective memory. The chapter speaks from the perspective of progressive education's emphasis on understanding the deep connections among literacy, learning, technology, and community but does not limit its view to work explicitly in that tradition.

Approach to the Review

Around a century ago, a set of ideas and practices shaped a radical vision for education as a keystone for all social life. It was called "progressive education" in the United States, with parallels in other countries; this new way of thinking was built upon the assumption of an integral connection between democracy and education (Cremin, 1964; Dewey, 1939/1991; Graham, 1967). The conception of democracy at that time diverged considerably from that commonly taught in schools today. The latter most often views democracy as a purely political process or views democracy as something to be fought for, especially when one nation tries to impose its will on another or one group seeks power over another. Instead, progressive education in the early to mid-1900s envisaged democracy from the ground up, as a process involving every aspect of living. It meant active participation by all citizens in social, political, and economic decisions (Addams, 1893/2002). Both Jane Addams and John Dewey realized that practices promoted under the name of progressive education varied widely, often being reduced to a romanticized notion of undirected learning. We argue that the version of progressive education presented in the following section is closer to Dewey's original meaning and, perhaps even more importantly, is a useful encapsulation of a philosophy of education for today.

Connecting New Literacies and Community

The progressive education movement appeared in response to an era of massive immigration, disorienting technological change, and questions about the nature of civic governance; these are not unlike the conditions and corresponding concerns voiced today (Bruce, 2002). There was a core belief that education could not succeed by avoiding these complexities. Instead, the opposite was needed. Students must be given the opportunity to engage with life as it is, not as it was imagined or might be someday. Progressive education offered ideas about how to develop the ability to cope with complexity, but more importantly, there was an assumption throughout that connecting community, work, social values, nature, and all the other aspects of lived experience was a fundamental necessity for meaningful learning.

A central thesis of this movement was that education is about the development of engaged citizens. Today the individualist conception of literacy is dominant in educational discourse and policy. In contrast, the progressives saw individual growth as important, but inseparable from issues of democratic participation and social change. Key elements of this kind of education include the following:

- respect for diversity, meaning that each individual should be recognized for his or her own abilities, interests, ideas, needs, and cultural identity, and

- the development of critical, socially engaged intelligence, which enables individuals to understand and participate effectively in the affairs of their community in a collaborative effort to achieve a common good (John Dewey Project on Progressive Education, 2002).

As we consider the role of new media and technologies in literacy it may at first seem strange to look back over a century to a time before iPods, the Internet, computers, television, and movies for insights into how we teach, learn, and live today. Yet, beyond the usual rule that it is useful to examine the present in light of the past, the experiences of the progressive education period may be especially salient today. In many ways, we have lost the deep connections between school literacy and community, which the progressive education movement sought to foster. We have lost the ability to see literacy as inherent in the practice of engaged citizenship, rather than a simple objective to be attained. New literacies have the potential to reestablish those connections; both their benefits and their drawbacks can be better understood by considering the larger communities in which formal learning is embedded.

Research within the community inquiry framework overlaps with other research on new literacies and shares many core assumptions. This body of research highlights aspects of literacy and technology that may be less visible when one looks at only formal learning settings. This is because much of formal learning today provides limited opportunities for students or teachers to participate fully in creating, selecting, appropriating, or modifying the tools of learning. It separates the learning of skills and concepts from daily life. And it studiously avoids the aesthetic, moral, ethical, political, and economic dimensions of knowing. Attention to community brings those dimensions forward. In so doing, it expands our conception of new literacies and what they mean for schools, communities, and life in general.

Challenges for the Review

Any review poses challenges: how to balance breadth and depth, how to discuss incommensurable studies in one venue, how to do justice to work based on unshared assumptions, how to integrate theory with empirical work, and how much to cover early work versus the most recent. But this one raises additional issues, primarily because it refers to an emerging discipline concerned with new community-based literacies, which calls for not only new research but also new ways of thinking.

Our topic might suggest a focus on separate categories of literacy, technology, and community; however, this organizational scheme turns out to be simplistic upon further consideration. The first problem is that there are divergent conceptions of literacy, technology, and community, which make it difficult to compare and contrast research across these areas. While we concentrate on lived experience in geographic communities in this review, the purpose, temporal and spatial scope, and very definition of community are all in question

(Wellman, 2001), as we discuss later in this chapter. There are similar divergences in the definitions of literacy and technology. As Lankshear and Knobel (2004) argued, it soon becomes clear that we need to avoid narrow statements, such as equating new literacy with literacy using information and communication technologies.

Whatever definitions we adopt, another problem for any review is that research in any one of these categories often remains unconnected to that in the other two categories. Although there are classic, peer-reviewed, data-driven, published journal articles in each of these category areas, they typically fail to speak to the integration of these areas. For example, few studies examine how community projects might become more aware of literacy issues or how school-based new literacies might connect with community problems. Moreover, there is relevant work that does not fit neatly into any of the categories. For instance, Moje (2000) talked about life beyond the school in her discussion of graffiti and rap, but does not frame the work as community-oriented per se. Similarly, graffiti and rap are new technologies but do not fit the more common definitions that focus on electronic devices.

Thus, in the present review, we strive to provide a substantial grounding in community inquiry as a means to bring together work in the community, technology, and literacy. And we highlight work such as Moje's (2000) work, which demonstrates creative and meaningful integration across the categories and suggests, in our minds, the power of community inquiry as an analytic lens. In addition to reports of research published in scholarly journals, much of the best work is found in books (e.g., Druin, 1998; Eglash, Croisant, & di Chiro, 2004), Web sites (e.g., the *TECFA Community Portal* at http://tecfaseed.unige.ch/door, the Public Sphere Project's *Liberating voices! A pattern language for communication revolution* at http://trout.cpsr.org/program/sphere/patterns, and *infed* at http://www.infed.org/), technical reports, newsletters, conference proceedings, and other nonjournal venues.

Organization of the Review

The challenges encountered in participating in community inquiry might be summarized as those inherent in paradigm-shifting science, as distinct from normal science. We are talking about community inquiry in this *Handbook* because we feel there is an important body of work that ought to be integral to new literacies but has not yet been explicitly recognized in much of the literature. The community inquiry perspective is noteworthy because it brings certain things to the foreground: learning as lived experience, literacy as community participation, and technology as construction of the means of inquiry. We present that work here and try to make the connections clear, highlighting their importance for research on new literacies. We address the shift in science that community inquiry commands in part by including a substantial discussion of contributions to theory in this review. While we try to let the research

speak on its own terms, our selection and presentation necessarily reflects our own specific values and theoretical orientations, as well as our own community inquiry practice.

In an effort to make our orientations explicit, we present the research in terms of three key themes central to community inquiry: (a) learning and lived experience, (b) community, and (c) technology. It is important to note that, for community inquiry, these are not three separate realms; they function in a coordinated way. The best way to show that is to present examples in the form of vignettes, small but rich slices of research in which the three themes come together. Thus, following an account of the themes, we examine a set of research vignettes that are organized according to aspects of an inquiry cycle and that embody possible ways of bringing together effectively considerations of learning, community, and technology. These research vignettes are drawn from community inquiry in which we have participated, so that we are able to speak from our own lived experiences. We use the vignettes both to help explain what community inquiry is but also to provide a base for linking community inquiry to a broader spectrum of new literacies research.

Learning and Lived Experience

Studies of communities solving problems or developing better communication practices have shown two clear findings regarding literacy. First, literacy is vital to community well-being, especially if one sees literacy as a set of cultural practices involved with making and communicating meaning through a variety of socially defined symbol systems. The ways in which people communicate within the community and with those outside are central to both community functioning and to our understanding of those communities. Second, and somewhat paradoxically, a focus on literacy may be counterproductive. For the community, especially underserved ones, a literacy focus often leads to a deficit view, in which one catalogs the various ways that members of a particular community lack literacy skills needed within the larger society. From an analytical perspective, the focus can lead us to ignore the surround in which literacy is practiced. For these reasons, and because literacy is addressed more directly in other chapters, we want to start here with a consideration of learning and lived experience. As the case studies near the end show, literate activities are central to community life, but we need to understand them within a context of lived experience, community building, and political struggles.

Situation

In his autobiography, Myles Horton (1990) described the work of the Highlander Folk School in New Market, Tennessee, which helped guide Martin Luther King, Jr., Rosa Parks, Eleanor Roosevelt, Pete Seeger, and many others involved with labor and civil rights movements in the 20th century. Writing about social goals and personal goals as they developed within the labor, civil Q1

rights, and antiwar work of the school, Horton argued, "Goals are unattainable in the sense that they always grow," and this is a good thing because "you die when you stop growing" (p. 228).

The Highlander School is a prime example of a holistic approach to education that encompasses social well-being and change. Horton (1990), for example, deliberately placed education goals within a broader perspective on larger social change:

> Instead of thinking that you put pieces together that will add up to a whole, I think you have to start with the premise that they're already together and you try to keep from destroying life by segmenting it, overorganizing it and dehumanizing it. You try to keep things together. The educative process must be organic, and not an assortment of unrelated methods and ideas. (p. 130)

Horton learned from Jane Addams and Hull House, which embodied a similar approach to democratic education: that people actively shape their own learning as they work on real problems within their own communities. In doing so, people sought to realize democracy in its social, as well as its political, expression. This resulted in an educational philosophy in which learning starts with lived experience:

> If you listen to people and work from what they tell you, within a few days their ideas get bigger and bigger. They go back in time, ahead in their imagination. You just continue to build on people's own experience: it is the basis for their learning. (p. 137)

For Horton (1990), goals arise because "in any situation there will always be something that's worse, and there will always be something that's better, so you continually strive to make it better" (p. 228). Both this positioning of goals within problematic situations and the equation of goals with living hark back to John Dewey and his theory of inquiry.

For Dewey (1938/1991), *situation* is not something we enter into, nor does it exist independent of inquiry. We are a part of, not spectators of, this dialectical situation. We change a problematic situation, and we, in turn, are changed through our actions. In his classic reflex arc paper, Dewey (1896/1972) showed how, under this view, conventional distinctions between organism and environment, stimulus and response, body and mind, or cause and effect need to be reconsidered. Bentley (1941) further showed that even the distinction between "knower" and the "known" relies on an incomplete understanding of situation, positing the knower as separate from the environment. This theory is articulated further in Dewey's major works (e.g., Dewey & Bentley, 1949). Indeed, Dewey's (1938/1991) definition of *inquiry* uses his concept of situation

to provide a descriptive account of how we survive in the world: "Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" (p. 108).

Indeterminate situations are those in which a person finds conflict between current needs and realities. The indeterminacy can range from feeling cold to being puzzled about an historical event. That feeling of indeterminacy is then the driving force of inquiry, causing the individual to put on a coat in the former case or to make a trip to a library, in the latter. In each case, the inquirer seeks to establish a unified whole, one that replaces the indeterminacy with a unity. It is important to note that, for Dewey, inquiry is not a purely Q6
mental act, separate from action. Putting on a coat can be as much an instance of "directed transformation" as is reading a book. In fact, the integration of mind and body in action constitutes the transformative aspect of inquiry.

It is also important to note that this account is descriptive, not prescriptive. That is, Dewey did not argue that we *should* transform indeterminate situa- Q7
tions or that a good way to help people learn or participate with others is to have them do so. Instead, the "controlled or directed transformation" of indeterminate situations is simply what we do as purposive organisms. Learning is our capacity to reflect upon that transformation and to realize that we can achieve a "unified whole" when faced with similar situations in the future. In that sense, *inquiry-based learning* is not a method or an option to consider for teaching and learning; instead, it is what happens when people *do* learn.

The emphasis in Dewey's (1938/1991) definition of inquiry and his use of "situation" is on transformation, on remaking the world along with ourselves. Because situations often include interactions with others, inquiry typically involves collaborative practices within geographically defined communities. The usual categories (i.e., teacher/student, technology/concept, and knowledge/skill) are replaced with a need to understand the process of transformation: What means are employed to transform an indeterminate situation? What are the varied roles played by tools, ideas, and people in inquiry? How does an inquirer evaluate the unity of a situation? How do multiple inquirers coordinate their activities? How do individual experiences and needs coordinate with those of the community?

For Dewey, Bentley, Addams, Horton, and others involved with this educational praxis, the problems of education were not located in what we teach or how we teach, but rather in the breakdown of connections between individual and community, between formal learning and lived experience, and between the means and ends of problem solving. From this perspective, the situation set up within formal education is often so far removed from the situation of life outside that learning has no meaning and remains in what Dewey (1938/1991) called a "water-tight compartment" (p. 48).

The Inquiry Cycle

We can think of inquiry as a cycle in which each question leads to an exploration, which in turn leads to more questions to investigate (Bruce & Davidson, 1996). Thus, there is a process of asking, investigating, creating, discussing, and reflecting, and then asking again (Bruce & Bishop, 2002), as shown in Figure 25.1.

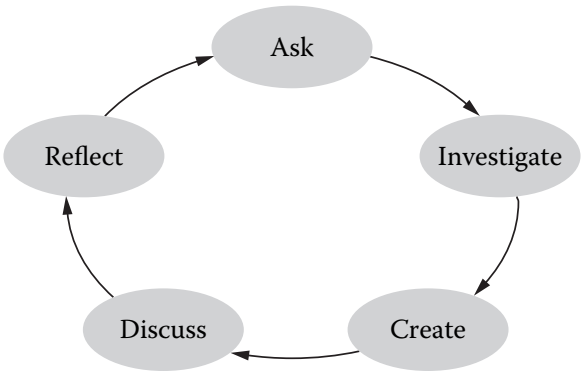

Figure 25.1 The inquiry cycle.

We need to interpret the cycle as suggestive only. Inquiry rarely proceeds in a simple, linear fashion. The five dimensions in the process—ask, investigate, create, discuss, and reflect—overlap, and not every category or step is present in any given inquiry. Each step can be embedded in any of the others, and so on. In fact, the very nature of inquiry is that these steps are mutually reinforcing and interrelated. Thus, reflection on solving a problem may lead to reformulating the problem or posing a new question. Similarly, action in the world is closely tied to dialogue with others. Despite this fuzziness, the steps and cycle outlined in Figure 25.1 can be helpful in highlighting aspects of an otherwise opaque process.

- *Ask* reminds us that inquiry begins with a question or problem arising out of experience. The "indeterminate situation" Dewey referred to is part of that experience, including an individual's participation in a community. It is not something that can be delivered from "outside" this participation. This is why there is "an enormous pedagogical difference between answering someone else's question and formulating your own" (Olds, Schwartz, & Willie, 1980, p. 40).
- *Investigate* relates to the varieties of experience possible and the many ways in which we become part of an "indeterminate situation." It suggests that opportunities for learning require diverse, authentic, and challenging materials and problems. Because experience includes interactions with others, there is also a moral dimension to inquiry. Similarly, physical, emotional, aesthetic, and practical dimensions are inherent in inquiry, and are not merely enhancements or add-ons.

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- *Create* picks up the "controlled or directed transformation" part of Dewey's (1938/1991) definition. This term insists that inquiry means active, engaged hands-on learning. Inquiry thus implies active creation of meaning, which includes new forms of collaborating and new roles for collaborators.
- *Discuss* highlights an implicit part of Dewey's (1938/1991) definition, which is developed in great detail in his writing, especially in his later work. Although inquiry has a personal aspect, it is also part of our participation in social arrangements and community. The "discuss" aspect in the inquiry approach involves listening to others and articulating our own understandings. Through discussion (or dialogue), construction of knowledge becomes a social enterprise.
- *Reflect* tells us that it is the inquirer who recognizes the "indeterminate situation" and can say whether it has been transformed into "a unified whole." Reflection (later articulated in the work of Schön, 1983, and others) means expressing experience and thereby being able to move from new concepts into action. Reflection may also mean recognizing further indeterminacies, leading to continuing inquiry.

As previously discussed, these steps are only one way to describe effective community inquiry. Together, they comprise a cycle that can be used to inform and guide educational experiences for learners.

Inquiry-Based Learning

Participation in the cycle of inquiry is crucial to inquiry-based learning, but the integral connection to lived experience outside school walls must not be obscured. As Addams learned at Hull House, the best education constantly reconstructs experience, relating it to both the past and to contemporary life. This view is captured in an oft-quoted passage written by Dewey (1938/1991):

> We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same in the future. This is the only preparation which in the long run amounts to anything. (p. 51)

Thus, inquiry requires active learning in authentic contexts. Authentic contexts require that teachers, students, and community members become partners in inquiry, including inquiry into the world and inquiry into pedagogy. This principle carries through from the individual classroom to the whole school. As Owen, Cox, and Watkins (1994) said, "For communities to rethink and redesign their schools so that all students develop successfully, the entire community must have the opportunity to be involved in inquiry about teaching, learning, and assessing" (p. 15).

Antecedents of this idea can be seen in the work of Lucy Sprague Mitchell, a leader of progressive education, who extended the work of both Addams

and Dewey (Smith, 2000). In New York, in 1931, she started what was later known as the Cooperative School for Teachers, which exemplified a commitment to collaboration and inquiry. She saw the need for both children and teachers to develop a scientific attitude toward work and life: "To us this means an attitude of eager, alert observations, a constant questioning of old procedure in the light of new observations; and use of the world as well as of books and source materials; an experimental openmindedness" (Mitchell, as cited in Antler, 1987, p. 309).

Inquiry-based learning is sometimes described as a philosophical and pedagogical response to the changing needs of the information age, but its roots are much deeper. It assumes that all learning begins with the learner. That is, what people know and what they want to learn are not just constraints on what can be taught; they are the very foundation for learning. Dewey (1900/1915) described the impulses (or instincts) of the learner, which are available resources for the school, and underlie the cycle of inquiry:

- Social instinct—conversation, personal intercourse, and communication;
- Instinct of making—the constructive impulse;
- Instinct of investigation—doing things and watching to see what happens; and
- Expressive impulse—the desire to extract meaning from experience (pp. 42–44).

Q11 Dewey saw these four interests as the natural resources, or the uninvested capital of education, out of which active learning grows. If people are to understand and participate fully in the complex world in which they live, they need to have opportunities to engage with challenging problems, to learn through hands-on investigations, to have supportive experiences, to articulate their ideas to others, and to explore a variety of resources in multiple media (Boyer Commission on Educating Undergraduates in the Research University, 1998; Q12 Minstrell & van Zee, 2000; Shavelson & Towne, 2002). These ideas have established at least a toehold in formal education but have become an imperative in community-based learning.

Concept of Community

The term *community* has been used to refer to a classroom or a global movement, to groups of people defined by location or interests, or in terms of communion (Smith, 2001; Wellman, 2001). There are learning, disciplinary, and professional communities, as well as historically defined, place-based communities. Hutchins (1952) used the term for a scholarly conversation across centuries, cultures, nations, and languages. There are also imagined (Anderson, 1991) and online or virtual communities (Rheingold, 1993). To some, community is a warm concept, akin to family and neighborhood. For such people, more community is thus a good thing. A corollary of this is that in

much of the literature within education, "community" is something to be created, developed, and nurtured (Cuthbert, Clark, & Linn, 2002; Joseph & Edelson, 2002; Joseph & Nacu, 2003; Renninger & Shumar, 2002). In the management literature, some ask how to create a community of practice (Wenger, McDermott, & Snyder, 2002). Conversely, others see community as divisive, or as a site of struggle (Hoggett, 1997). Nancy (1991) described community as the site of political resistance against immanent power. At the same time, he also saw the potential of communities to become oppressive, and asks how we can conceive community in a nontotalitarian manner.

Cohen (1985) argued that communities are best approached as *communities of meaning*. A community, from this perspective, plays a crucial symbolic role in our sense of belonging. That is, "People construct community symbolically, making it a resource and repository of meaning, and a referent of their identity" (p. 118). For Cohen, members of a community have something in common with each other, and that thing in common distinguishes them from the members of other groups (p. 12). The boundaries of community may be established formally, but often exist symbolically "in the minds of the beholders" as well (p. 12). As such, boundaries may be seen in very different ways by members of the same community as well as by those outside the community.

Thus, community implies both similarity and difference, a property Knorr-Cetina (1999) found in her work with scientific groups as well; that is, a group engages actively in defining both how it is the same and how it is different from other groups. Her account of a group is similar to what Zacklad (2003) called "a community of action" (p. 193). He proposed this term for

> dealing with small groups which actively and thus to some extent rationally pursue explicit goals while relying on a tightly woven fabric of relationships to promote mutual sympathy and the mimetic learning that is assumed to characterize primary groups and communities of practice. (p. 193)

Thus, his concept contrasts with *community of practice* (Lave & Wenger, 1991), which is nonintentional in its original conception, even though recent formulations have moved them closer.

A definition of similarity and difference is necessary for a group to be a community but it is not sufficient. Communities also have an intrinsic relation to *place*. This is at the heart of the debate over whether online groups are truly communities: Do they need a physical place, or can place exist in online geographies? Moreover, communities have *histories*, typically with complex tapestries of relations to communities before them. The ease with which online groups can be formed calls into question our prior notions of place and history in relation to our understandings of community.

For Dewey (1927), communities develop through reciprocal processes of individual and community inquiry. Thus, a community can change and

develop, but not through top-down engineering; a democratic community must be created through democratic processes. His concept of community is then central to learning. Making it possible for everyone to share in a common life—creating the Great Community, as he called it—is the central aim of education. Viewing conditions in the world in 1934, he identified two principal reasons for this. One was to counter the effects of "the economic regime of modern capitalistic industry" (Dewey, 1934, p. 214):

> In a world that has so largely engaged in a mad, often brutal, race for material gain by means of ruthless competition the school must make ceaseless and intelligently organized effort to develop above all else the will for cooperation and the spirit which sees in every other individual an equal right to share in the cultural and material fruits of collective human invention, industry, skill and knowledge. (p. 214)

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The second was to exorcize racism:

> Unless the schools of the world can unite in effort to rebuild the spirit of common understanding, of mutual sympathy and goodwill among all peoples and races, to exorcise the demon of prejudice, isolation and hatred, they themselves are likely to be submerged by the general return to barbarism. (p. 214)

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These reasons remain valid today. Surrounded by the larger contexts of capitalism and racism, communities today also face internal challenges in areas of health, education, economic development, sustainable environments, and social order. Nevertheless, and regardless of the difficulty of these challenges, a necessary task for communities is to find ways for members to work together in addressing problems and issues. Too often, according to Dewey (1927), both within their communities and in relation to the larger society, people work at cross-purposes and resulting in "the eclipse of the public" (p. 110). Over 90 years later, the "eclipse of the public" is even more salient as we consider relations between Muslims and Christians, racism throughout the world, and struggles for economic equality.

Communities of Inquiry

Community inquiry provides a theoretical and action framework for thinking about and working on these issues. It emphasizes the need for people to come together to develop shared capacity and work on common problems in an experimental and critical manner. It thus has much in common with action research (Greenwood & Levin, 2006; McNiff & Whitehead, 2006; Stringer, 1999), especially participatory action research (McTaggart, 1997; Reardon, 1998; Whyte, 1991). It emphasizes, however, seeing the community as an organic whole. Action research by some members of a community focusing on a particular problem would be a key component of community inquiry. But

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communities of inquiry tend to connect specific problem solving activities. For example, a community wellness program leads to the creation of a farmers' market, which is itself an opportunity to address divisions within the community through concerted action; the farmers' market leads to market baskets for low-income people and those who are shut in; all of these activities are tied to community economic development, cultural heritage, and community pride; the various activities become the curriculum for the schools; and so on. (This is a capsule description of some of the community inquiry activities in Paseo Boricua, the setting for one of our research vignettes.)

To recap briefly, the word *community* signals support for collaborative activity and for creating knowledge that is connected to people's values, history, and lived experiences. *Inquiry* points to support for open-ended, democratic, participatory engagement. Communities of inquiry thus involve several key elements. They

- respond to human needs by democratic and equitable processes;
- view community problems as an *opportunity* for the community to come together, to build capacity for problem solving, and to learn about the community and its situation;
- recognize that every member of the community has knowledge which may be critical to solving a problem, but can be discovered only if that individual has a voice; and
- help communities become learning organizations.

A successful *community of inquiry* (Garrison, Cleveland-Innes, & Fung, 2004) therefore is not one in which everyone is the same, but instead is one that accommodates plurality. As Clark (1994) argued, a learning community needs to maintain equitable relations among participants and render "the progress of expertise in a community secondary to a relational and epistemological practice of confronting differences so that its participants can come to understand how the beliefs and purposes of others can call their own into question" (p. 74). This is often easier said than done, and a key challenge that every community of inquiry will face concerns how to maintain a focus on addressing a given problem without sidelining the contribution of individual experiences, perceptions, and values.

We do not need to assume that "normal" learning is that which occurs in a classroom, with hyphenated versions of learning occurring outside (service-learning, community-based learning, lifelong-learning, project-based learning, etc.). *Communities of inquiry* situate learning in a broader frame than that assumed in much of educational research. This can be seen in recent studies emphasizing outside of school literacies, particularly with the use of new media (Garner, Zhao, & Gillingham, 2002; Hull & Schultz, 2002). Learning is then seen as a condition of all lived experience, with the classroom as a special case. Q17

Community and Social Change

Q18 If we accept Dewey's definition of *technology* as encompassing tools for problem solving, everything from a computer to a process to a definition of a term Q19 (Hickman, 1990), it is clear that Horton's (1990) Highlander School employed and developed many technologies. For example, Highlander workshops used and thereby developed a set of assumptions that were used to guide decision making and learning. These assumptions included the following: (a) There should be a goal arising out of a perceived social problem; (b) people have the capacity to solve their own problems; (c) dialogue in a larger context is important; (d) teachers need to interact in the field with students; (e) facts and analyses need to be tailored to the students' needs; and (f) follow-up to an implemented change is essential. The enactment of these assumptions constituted a technology for learning as much as any courseware or simulation tool might today.

Q20 However, tools were always regarded by Dewey and his colleagues as provisional and subject to change by participants, particularly when participants discovered that the tools failed to address identified social goals. This position differs markedly from the current dominant discourse about educational methods and technologies, which are typically conceived as independent of social change and not open to revision by students or teachers.

In many schools, the environment beyond the school walls might as well not exist. The culture of the community is irrelevant to the fixed curriculum; there is no recognition of the *funds of knowledge* (Moll, Amanti, Neff, & Gonzalez, 1992) a community might provide for a school. Local history is deemed secondary to the authorized history of the textbook or not acknowledged at all. Students' lived experiences, their personal and family goals, and their questions often are ignored. In some cases, however, the larger environment is recognized. It may be used prior to a lesson to "generate student interest" or to "activate prior knowledge." It may be used after a lesson as a way to "apply what is learned" or to "extend learning." The language here reveals that the environment beyond the classroom is at most a supplement to the "real" learning that occurs in a lesson.

Highlander inverts this hierarchy. Although one might say that everything this school does concerns learning, it is a learning that grows out of issues central to the lives of participants (e.g., "forums on war, the importance of defending and extending democracy against fascism, race problems, the social teachings of the Bible, old and modern Russia, social developments in Scan- Q21 dinavian countries, the labor movement in the South;" Horton, 1990, p. 75). Today, the National Issues Forums (nifi.org) similarly looks to community-based deliberation as a cornerstone of both learning and democracy. Community knowledge, existing practices, and felt needs become the core, with formal methods as one means to foster community and individual growth. This inversion is also evident in other community-based learning programs, including

the Freirean literacy campaigns (McLaren & Lankshear, 1994; Robert, 1998), Bolivarian circles in Venezuela (Bello, 2006), science shops in Europe (Fischer, Leydesdorff, & Schophaus, 2004), Scandinavian study circles (Oliver, 1987), ActionAid's Reflect approach to adult learning and social change (actionaid.org.uk/323/reflect.html), the appreciative inquiry approach as used in community development (Elliott, 1999), the Alternative Schools Network in Chicago (asnchicago.org), and in the University of Chicago Laboratory School (Tanner, 1997).

Technology

Online Learning

There is a large body of research on online learning appearing in journal articles, books, government reports, and other publications. This research highlights the details of specific software, pedagogical approaches, curricula, or learning situations (Haythornthwaite & Kazmer, 2004; Linn, 1996; Mishra, Koehler, & Zhao, in press).

Some of these studies speak to community inquiry and digital technologies. Henri (1992), for example, studied the relationship between teaching and learning in networked collaborative learning environments by focusing on the social activity and the interactivity of individuals in the participating group. Gunawardena, Lowe, and Anderson (1997) used a modification of Henri's framework to explore social negotiation in online learning environments. Garrison, Anderson, and Archer (2000) developed a model of critical thinking and practical inquiry that illustrates the multifaceted components of teaching and learning in text-based environments. M. J. Hannafin, K. M. Hannafin, Land, and Oliver (1997) argued that the best online learning projects follow principles of grounded design, which has shown promise in meeting community needs.

On the whole, the research portrays a field with many intriguing demonstrations, but with many unanswered questions as well, especially in the context of community inquiry. The research is fragmented and noncumulative in part because the frameworks for analysis and comparison are underdeveloped. Hartley (1998), Anglin and Morrison (2002), and others noted a lack of studies based on theoretical frameworks of learning. These authors called for more studies based on significant research questions, and less reliance on participant reaction surveys alone.

However, online environments are often driven more by the nature of the technology or by commercial imperatives than by a commitment to learning and to equity. These problems are exacerbated when one takes seriously the use of online technologies outside of formal learning contexts, or for contexts that connect formal learning and community action. Indeed, most online

learning research deals with cost or effectiveness of learning environments, narrowly defined.

Community Technologies

People have developed a diverse array of technologies in the service of community inquiry—from cave paintings to Post-it notes on refrigerators, from stone cairns to newsletters, from books to Web sites. Language itself might be defined as the primary means for community inquiry, inasmuch as it embodies through its essential social aspect both the means and ends for community members to engage one another in addressing their problems. Moreover, the ongoing reinvention of language and its various manifestations represents the story of community inquiry as well.

It is beyond the scope of this chapter to review all the many new forms of hardware for communication available and the research being done on these. Let it suffice it to mention not only computers and the Internet, but also mobile phones, personal digital assistants (PDAs), iPods, wireless technologies, and digital cameras, as but a few of the devices that are reshaping community interactions, marking new fault lines within communities, and creating new ways of connecting one community with another. Often, these new tools are combined with older ones in novel ways. For example, *Netti-Nysse* is an Internet bus in Tampere, Finland (Harju, 2005). It offers a mobile technology for community members in general when it visits a public square or for specific communities when it makes a requested visit. The bus contains a small auditorium and 10 computer stations with Ethernet connections. The bus itself connects to the Internet via a wireless link to 1 of 10 WLAN antennas in Tampere. *Netti-Nysse* provides computer/Internet instruction for 1,000 people and access for 5,000–12,000 others each year. Its activities are coordinated with the city libraries, NetSquares (fixed community technology centers; see Q22 http://tampere.fi/kirjasto/sampola/tietori/nets.htm), and Mansetori, a com- Q23 munity Web site (http://mansetori.uta.fi/tori/aihe/?catid=261). Together, these resources provide basic computer education, the means for communication among community groups, access to information, and e-government services. It will be interesting to see how projects such as this might provide support for community inquiry, with active involvement of community members in design, appropriation, and evaluation of the technologies.

A related effort on a global scale is UNESCO's International Initiative for Community Multimedia Centres (Creech, Berthe, Assubuji, Mansingh, & Anjelkovic, 2006). Each Community Multimedia Centre addresses local development needs in education, training, health, and income generation. It does this by combining community radio broadcasts which are produced by local people in their own languages and community technology centers that host Internet-capable computers and provide phone, fax, and photocopying services as well. The low-cost radio broadcasts inform, educate, and entertain,

but also empower the community by encouraging public participation and greater accountability in public affairs. It is linked with the Internet through programming that discusses useful Web sites. A recent evaluation found,

> [L]onger term benefits are already being realized within individual communities, such as the gradual removal of barriers to social inclusion, the stimulation of poverty alleviation through access to knowledge of better health, resource management and agriculture practices, through the establishment of listeners clubs as self help groups (a direct connection between CMC [Community Multimedia Centre] work and the generation of income from small savings and credit operations), and the creation of new livelihoods opportunities. The CMC role in fostering cultural resilience—the capacity of a community to retain critical knowledge and at the same time adapt to external influences and pressures–is particularly remarkable. (Creech, 2006, p. 6) Q24

Since 2001, UNESCO has established nearly 100 CMCs in developing countries in Africa, Asia, and Latin America/Caribbean. There are efforts to establish countrywide networks of 50 or more CMCs each in Mali, Senegal, and Mozambique.

The Internet is of course a prime venue for new literacies in service of communities. Web resources can promote learning for many community members. On one hand, users can learn about history and culture related to their investigations through images and stories. Through interactive software, they can engage in simulated investigations that would be too expensive, dangerous, or lengthy to pursue in other ways. Web sites can help people see their current ideas in a new light and encourage the creation and expression of new ones. On the other hand, people can be frustrated by the gap between their ordinary experiences and codified technical knowledge. The latter can seem static and different in kind from the knowledge gained through daily living. One way of addressing this issue, we propose, is to think of technology use as representing the ongoing processes of community inquiry (Tardieu, 1999). This way, the conflict between personal, situated knowledge and historically constituted, communal knowledge becomes a problem of melding and connecting, not of choosing one over the other.

Appropriating Technology

Technology appropriation is a familiar phenomenon. People appropriate all kinds of technologies in their lives: cell phones as ways to avoid phone solicitations or digital video cameras to produce "pandacam" shots of the San Diego zoo, to name a few. The deaf community has appropriated instant messaging (IMing) technology in a particularly clever way; deaf teenagers can "talk on the phone" with their friends after school. These conversations can be with both hearing and nonhearing friends, unlike the situation with the earlier

teletypewriters. Their parents appreciate the writing and typing practice that this use affords. The designers of these technologies may not have envisioned these uses, nor did the users when they first purchased the item.

Q25 Eglash, Croisant, and di Chiro (2004) emphasized the importance of using two-way bridges across the digital divide. This contrasts with the one-way bridge, which assumes that experts need to deliver the technology and the knowledge to users. The one-way-bridge model stereotypes individuals and communities and overlooks the valuable resources they possess, an attitude that runs counter to asset- and capacity-based approaches that have become
Q26 the norm in community development (Kretzmann & McKnight, 1993). The definition of a two-way bridge relies on a model that recognizes two intersecting axes: (a) high to low social power and (b) production to consumption. In this model, two-way bridges comprise a shift for those with low social power from being just consumers to being producers of science or technology through reconceptualizing professional products that are provided by producers with high social power. If the appropriation process is supported and examined, the result can be new opportunities for local communities to make use of powerful new resources. This is similar to the *alternate realizations* process (Bruce, Peyton, & Batson, 1993; Bruce & Rubin, 1993) as shown in Figure 25.2.

Here, the innovation (which can be read as computer technology, curriculum, teaching practice, or other method) appears as a discrete and well-defined *idealization*. But as community members incorporate it (or not) into their own lived experience, they transform it to fit their own beliefs and practices. This process may occur consciously, but usually occurs through unreflective acts of interpretation and adaptive use. The result is that each situation results in a different reading of the innovation and a different *realization* of it in practice.

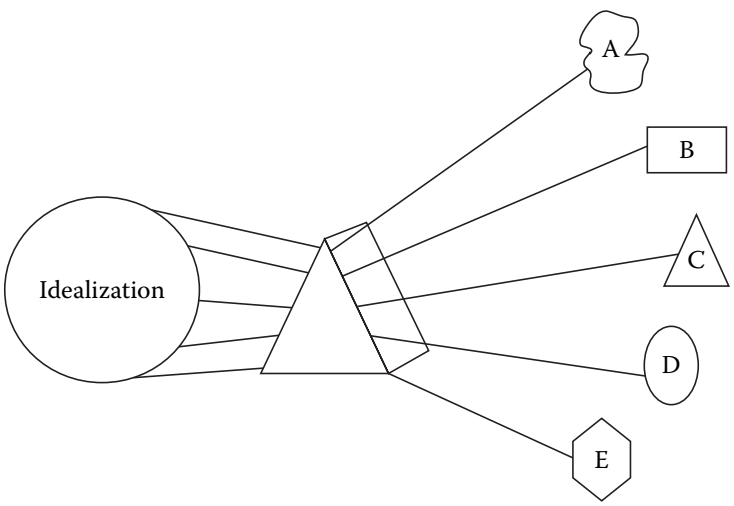

Figure 25.2 The idealization to realization process.

Community Informatics

Community informatics is an emerging field of research, action, and policy that aims to understand how information and communication technologies are employed to help communities achieve their goals in a wide range of domains, such as health care, civic engagement, preserving cultural heritage, agriculture, economic development, environmental planning and protection, and education (Bieber, Civille, Gurstein, & White, 2002; Bishop & Bruce, 2005; Gurstein, 2004; Keeble & Loader, 2001). Community informatics is concerned with geospatial communities and helps conceive of the entire community as a unit of analysis when considering literacy and technology issues, practices, and outcomes. It provides a natural framework for looking at how technologies are linked to social change in communities (Grabill, 2003, in press). Moreover, community informatics prompts us to consider critically the role that technology plays in communities (Granqvist, 2005; Stoecker, 2005).

Community informatics research is conducted internationally in settings that range from inner-city neighborhoods to rural villages, and explores how individuals and institutions (e.g., schools, libraries, grassroots groups, health agencies, etc.) come together to work on common problems. It addresses questions of community development, learning, empowerment, and sustainability in the context of efforts to promote a positive role for computers and the Internet in society (see http://community.telecentre.org). Community informatics highlights issues of social justice, prompting literacy researchers to consider the cultural reproduction of digital inequality (Kvasny, 2006) and the development of a radical praxis for "rewiring" the social order" (Venkatesh & Owens, 2006) and creating more livable communities (Schuler, 1996).

Technology as Lived Experience

We can summarize much of the research on literacy technologies in communities by saying that it concerns how people live in the world, how they engage with others, and how they articulate and make sense of their experiences. *Technology* is a central player in these processes (McCarthy & Wright, 2004). Research on technology design, development, distribution, use, and evaluation within communities has highlighted this role for technology and in the process identified several revisions to the ordinary view of technology:

1) Technologies are often construed as tools to solve problems, but problem solving also creates technologies (regardless of whether the solution is a new term, an artifact, a process, a machine, etc.). Technologies are thus constructions and reconstructions through use.
2) Problem solving is a technology when we envision future needs to address similar problems (e.g., workshop activities become an agenda, then a model, then tangible materials, e.g., a Web site, poster, handout, then online technology). Thus, *being* a technology is a relative property

expressing the assessment of the fixity of a process and its reusability in future contexts.

3) A device, such as a personal computer, is not a particular technology until it comes into use, after which it can realize any of an indefinite set of possibilities. In that sense, the user is not the recipient of the developer's work but the ultimate creator of the technology; that is, if I use my PC as a doorstop, I have constructed a kind of doorstop technology out of available resources.
4) The cycle of problem solving to technology to next problem solving to next technology, and so forth means that at any given point one can view a technology as a description of the process of past problem solving or a means for future problem solving.
5) Artifacts manifest the problem-solving activities that give rise to them, compare Madeline Akrich (1992) on the thickness of the metal in a car body, while simultaneously providing the structure for future activity. This view counters both a naive constructivism that views all activity as totally fluid and agentive. It also counters naïve determinism, which argues that all action is fixed, independent of experience and human action.

Technology is thus the reconstruction of lived experience, which is essentially the definition of learning found within progressive education. Technology has impact, and we become conscious of its meaning. It prepares us for future experiences. It helps us perform tasks, but more fundamentally, it is in a sense a definition of learning. A corollary of this is that users participate in technology design and use, even if they are not engineers. They do so because the continual design of technology is lived experience. Design is what happens when people incorporate technology into their lives.

Progressive education centers the discourse on living life in a democratic society. From that center, we look out to terms like informatics, learning, and literacy as aspects of democratic participation. The question shifts from "does this tool help people develop literacy skills?" to "how does this research inform our understanding of relations between literacy, community, and technology for people desiring to participate in a democratic society?"

Research Vignettes: New Literacies and Community Inquiry

In this section we examine five cases in which the themes of literacy and lived experience, community, and technology recur. We use the five elements of the inquiry cycle presented previously to avoid recapitulating the division into academic disciplines that has stood in the way of deeper understanding in this field. The case studies exemplify a diverse array of community inquiry projects in terms of five focal questions:

- *Ask:* How do literate activities arise out of experiences in communities, including dimensions of morality and social justice?
- Investigate: How do communities both use and construct the tools for literacy?
- *Create:* How do people create and live new roles as they appropriate technologies into their lived experience?
- *Discuss:* How do communities address conflicts or bring multiple perspectives together? What are the reciprocal relations between the individual and the community in these processes?
- *Reflect:* How do individuals in communities make sense of their experiences for themselves and for others?

While each vignette represents the ways that multiple technologies are created and used to transform situations, all draw on the *Inquiry Page* (http://inquiry.uiuc.edu), a collective endeavor in research and practice that began over a decade ago to support community inquiry (Benson & Bruce, 2001; Bruce & Easley, 2000). Participants in the site include community activists, teachers, museum educators, librarians, university students and faculty, scientists, and others engaged in a variety of lifelong and informal learning activities.

An extension of the *Inquiry Page* is the *Community Inquiry Laboratory or iLab,* which is free, open source, collaboratively designed software that allows people to craft their own interactive Web sites (http://ilabs.inquiry.uiuc.edu). Their Web sites provide a place where members of a community can come together online to develop shared capacity and collaborate in identifying and addressing problems. Thus, users are developers through their creation of the site content, their contributions to the interface, and their evaluations, and often simply by discussion within the inquiry community of its usefulness, as well as their reports of what works and what does not work in the context of their own settings of use (Bruce, 2001; Bruce & Bishop, 2003; Bruce et al., 2003; Comstock, Bruce, & Harnisch, 2003). Q30 Q31

Ask: Literate Activities Arising Out of Experience

Our first case study is of the Paseo Boricua neighborhood in Chicago, where we have been learning from, and collaborating with, teachers, students, and youth activists for several years, largely through work with the Dr. Pedro Albizu Campos High School and the Café Teatro Batey Urbano. We chose this example because it arises from a vital, multigenerational urban collective whose community inquiry has produced stunning benefits for local residents, university learners, and scholarship alike (Alicea, 2001; Antrop-González, 2003; Arocho, 2001; de Genova & Ramos-Zayas, 2003; Flores-Gonzalez, 2001, 2002; Flores-Gonzalez, Rodriguez, & Rodriguez-Muniz, 2006; Johnson, 2004, 2005; Perez, 2001; Rinaldo, 2002). With its guiding principles of "the community *is* the curriculum" and "live and help others to live," it also

represents significant and interesting relations between a minority community and new literacies. Some of these relations recapitulate what many others have found about young people and the use of new technologies, and all of their positive and negative aspects. But some of these relations reveal quite different uses of new technologies and different stances toward them. We devote some space to considering the diverse set of practices found in this high school and the surrounding community because it is important to begin any investigation of communities such as this on the terms of the community itself, rather than employing *a priori* assumptions about what new literacies are, how they are typically enacted, and what their value is.

For example, the Café Teatro Batey Urbano is a youth-led venue for cultural expression and social action in the community. One evening, Juan David Martinez, aka Ghost—a student at Dr. Pedro Albizu Campos High School—, performed the following poem (used with permission).

Cyberwashed

Juan David Martinez

I can't stand this anymore

Young people selling their souls

To the devil in the streets

To the one-eyed monster cable,

Satellite, video, DVD.

If you want you can even pause live T.V.

Looking @ the real world through a

One-sided glass box,

MTV

BET

ABC

123

LMNOP

QRXYZ

Just let me be,

Maybe I'll tune into a station when it's

Called free,

Free of stereotypes and scripted reality shows

That don't represent my surreal life,

Having to deal with BIG Brother
Looking over my shoulder,
Or whether I will be a survivor
In this RAT RACE.
Welcome to the Cyber Revolution
You got mail
You got mail
You got mail
I don't need your freakin' mail
AOL
MSN
And Net Zero,
Leaving the money in your pocket
At a total of zero,
Yahoo,
Black Planet,
& MiGente*.
Not really being MiGente,
Because you see,
If you really want to see MiGente,
You can go to the streets,
Where you'll find MiGente,
Suffering because of crooked cops,
Mothers crying every night over dead sons
& young pregnant daughters,
But hey,
It's not all that bad
Because you have the Puerto Rican parades,
And schools like Pedro Albizu Campos High School where you can
Get your credits and your grades,
Spaces open for our youth like the

Batey,
All to build our communitay,
That is my Real World
Outside the one-sided glass box
Unplugged, not plugged in,
& the only time I'll shout Yahoo!
Is when my community succeeds in this
Country full of deceit and greed.

(*"MiGente" is the name of popular, online Latino community; "mi gente" is Spanish for "my people")

Ghost's poem contrasts with the dominant discourse of new technologies for education. It reflects a sophisticated understanding of the role of technologies in capitalism and the global economy and the impact these technologies can have on a close-knit urban community. He asks us not so much to reject the technologies as to critique them. As Freire (1970) might say, he is helping us to expand literacy, or radicalize it.

Expanding literacy for community needs does not mean simply developing greater aptitude in using computers. To paraphrase Freire (1970), through reading the words of technology we learn to read the world. Or, as Cushman (2006) said, "A praxis of new media unfolds at the intersection of critical, digital, and community literacies in order to produce transformative knowledge products with all stakeholders" (p. 1). This understanding derives from the ethos of his community; it raises questions different from those usually expressed when one talks about new literacies and young people. For example, instead of asking how young people can be taught to engage in new literacies more creatively and critically, Ghost's poem, in effect, asks the following questions: What are the new literacies? Where did they originate? Whose interests do they serve? How can we conceive them within a larger sociopolitical framework? And perhaps most fundamentally, can we begin our inquiry not with a concern with literacy practices per se but rather with an inquiry into the nature of individuals in communities struggling to resist gentrification and globalization?

After hearing Ghost's poem, a first-time visitor might be forgiven for thinking that the community, or at least its young people, are against digital technology. Further evidence of an antitechnology stance would come when hearing that few of the young people at the high school had much interest in wikis (a type of collaborative online writing space), blogs (a Web page with

dated entries), Facebook (a social networking system), or many of the other new media today. In addition, the new literacies are not promoted or made explicit in the curriculum of the school. However, the use of new media and technologies in this low-income community go far beyond what one sees in many suburban schools. Young people make CDs comprising collections of hip-hop music and poetry. They produce oral histories and documentaries in digital form. They design an empirical study of environmental racism and create their own "Students in Action" iLab to support their research. And they collaborate with university students to create library catalog software to add to the suite of iLab applications.

In order to understand these practices, both in terms of situated use and critical stance/nonuse, one needs to start with the community and not with the technology. Thus, studies such as those conducted by the Pew Internet and American Life Project (http://www.pewinternet.org/), and other work on the digital divide, while valuable at giving us some overall measures, run the risk of obscuring the true patterns of use and beliefs in communities like this. They tend to characterize, for example, practices in terms of deficits, without understanding the interesting and important differences between, say, young people at the Dr. Pedro Albizu Campos High School and those in a wealthy suburban high school.

A word of caution: None of what we have just said should be interpreted as implying that all uses of new media are equally valid or all users have equal opportunity. In fact, community leaders in Paseo Boricua are very aware of the values society places on particular skills and knowledge and are concerned that young people in the community have full opportunity to acquire those valued skills. On the other hand, it is noteworthy how much the understanding of technology within this community and the uses people make of it goes beyond what are considered hallmark practices.

Investigate: Using and Constructing Tools for Community Inquiry

In this section, we look at research on resources people employ as they address their problems and examine how people use digital technologies to learn. We also consider research on how people use technology as they investigate problems in the context of their community. This research shows that people use a diverse variety of information and communication tools and materials as they learn, collaborate, and communicate. These tools are the most valuable when they speak in a language and with a purpose that matches the lived experience of participants. We need more research on what materials are authentic, challenging, and productive, for different situations. This research on tools and materials must be done in partnership with the people affected (Alkalimat & Williams, 2001).

For our second vignette, we turn to SisterNet, a grassroots organization of Black women in Champaign, Illinois, founded by Imani Bazzell. SisterNet has

developed many programs for women that nurture both healthy lifestyles and community activism. These are akin to community-based research at Hull House, which involved women in empirical investigations of local conditions in their neighborhoods, such as child labor and tenement deaths resulting from the city's lack of garbage services (Addams, 1912).

The Afya project united SisterNet women with university affiliates in a process of community inquiry. Its primary aim was to engage Black women in investigating and improving health information and services, while simultaneously nurturing their interest, proficiency, and participation related to computers and the Internet. Afya was concerned with developing new social technologies as well as new digital tools and resources for community-based learning (Bishop, Mehra, Bazzell, & Smith, 2003). Afya experimented with action circles and community-based workshops as social arrangements to make productive use of difference in pursuing both health and technology literacy; *Inquiry Page* technologies were recreated in the process.

Scenarios collected in focus groups helped to understand the social context of Afya members' investigations into health care and technology. We were able to identify the most pressing problems (i.e., provider relationships, common diseases, lack of relevant health information, and lack of culturally relevant and appealing health information on the Internet). These scenarios reveal something of the lifestyle, knowledge, and capacity of SisterNet women.

Scenario examples

> It's hard to know if it is really racism or if the healthcare providers are being pushed. The fact that if a Black woman presents with abdominal pains the first thing they want to do is run a series of venereal disease tests on her, whether that is the issue or not.

> [Doctors] walk in there, and they start spurting off these words in their lingo, and they're saying this and that. Talk to me in layman's terms because I don't know what's going on. They really do rely on us not to ask too many questions. Luckily for me, like I said, I have an aunt who has been through everything possible, and she asks more questions. That's what's really good about having people like that in your lives.

The scenarios also helped us develop a community action plan, based on SisterNet's action circle model. This plan was designed to address the identified needs of this group and to respond to their desire for building capacity. Community action plan items included the following:

> Establish an action circle to develop a website featuring jargon-free, culturally appropriate health information for our physical, emotional, spiritual, and intellectual well-being; chat and bulletin board space; news; tips; and public policy information. Establish an action circle to organize

an African American women's health fair designed to increase knowledge about health concerns and resources and provide opportunities for interaction between health information and service providers and community women.

The action plan highlights SisterNet women as participating in both the construction and the use of tools for literacy. SisterNet women's investigations into health and technology were intertwined. The project picked up momentum when community inquiry was explicitly recognized as our theoretical framework. SisterNet workshops conducted at the annual health fairs and symposia moved from a model of training in Internet searching to developing and using tools to support learning. SisterNet action circle members, who included SisterNet women along with faculty and students, used the *Inquiry Page* to develop an online Inquiry Unit that was to create a personal health action plan, a practice that was established as ongoing feature of annual SisterNet symposia.

The "Investigate" section of the online Inquiry Unit contained a list of resources, both online and offline, that would help SisterNet women learn how to achieve better health. The resources were assembled and annotated by all action circle members. In symposia workshops led by SisterNet women, participants learned how to access the personal action plan Inquiry Unit and browse items in the "Investigate" portion of the unit. Then, they discussed the rationale behind creating a simple action plan to help them pursue small improvements in their daily lives, before "spinning off" their own Inquiry Unit and entering their personal action plans in its "Create" section:

Instructions for creating an action plan

Are you ready to create your own personal financial health plan?

Here we go...

Let's start by writing down three things you will do or would like to accomplish in the next three months to improve your financial health.

Personal action plan created by one SisterNet woman

- Find out my pension options and rollover pension into Roth IRA
- Acquire a copy of my credit report
- Contact VA to find out what my housing options are.
- Begin a peace of mind fund.

Q33
Q34

The "Discuss" section of the Inquiry Unit was used to prompt discussion in the workshop about barriers to successful action and how they could be overcome. The "Reflect" section invited women to think about what they had learned in the workshop.

To prepare for a SisterNet health fair, another action circle was charged with developing an activity that would help women investigate water quality while gaining additional exposure to digital resources. Here, an Inquiry Unit was created that outlined a process for collecting and testing local water samples and then entering the data online. Another Inquiry Unit was devoted to learning more about the importance of drinking water and critically assessing the benefits of store-bought bottled water. Women and girls attending the health fair conducted water quality tests and entered their data.

The collaboration with SisterNet fed into significant design investigations and enhancements for the *Inquiry Page*. One was the development of several different Inquiry Unit templates, including one with less academic jargon. SisterNet women also wanted their Inquiry Units to be more seamlessly integrated into their SisterNet Web site. Working through this problem led to an increased focus on how to promote what we came to call "distributed inquiry" and, in fact, to prototyping the first version of *iLabs*.

Taking a larger view, our work with SisterNet helps us interrogate the public role of professionals and the manner of their professional preparation (Cuban & Hayes, 2001; Curry, 2005; Hawisher & Selfe, 1999; Hyland & Noffke, 2005; McCook, 2001; Regenspan, 2002; Smith, 1994). Framed within community inquiry, educators and new media designers have a responsibility to society that goes beyond conveying so-called technical expertise (Boyte, 2000; Sullivan, 2004). Professionals also need to capitalize on the knowledge and commitment that novice community members contribute. Addams (1912) employed women's club members around the country to collect data on child labor because they were the ones who both cared enough to conduct the investigation and were knowledgeable enough to accurately gauge the age of the children they observed in factories. Similarly, SisterNet women contributed to the design and implementation of iLab software because they cared about creating software to support community inquiry and they knew what functionality and usability features would be appropriate for its intended users.

Create: Appropriating Technology

In this section, we consider research linked with action, following Dewey's argument that inquiry is both thinking and action in the world. How do people appropriate technologies, engage in collaborative learning, create, and live new roles? Our example is the *Inquiry Kit* (http://gslis.org/index.php?title=Inquiry_kit), which was developed as a class project in a graduate-level course on inquiry-based learning. Graduate students had engaged in a lively discussion following their viewing of the video documentary, *A Private Universe*. This video shows that even Harvard graduates had not learned basic astronomy concepts taught in elementary school, such as the reason we have seasons. Watching others work through the concepts provoked curiosity about those ideas but, more importantly, about how anyone learns and whether

familiar models based on transmission and individual learning really work. This led to their choosing the Moon as the focal point for a class inquiry and project.

To begin with, the abstract conceptualization of the Moon was questioned. Students asked the following questions: "How can one teach the Moon's phases?" "What are the various translations and meanings for the word 'Moon'? Are the words 'Moon' and 'month' correlated in all languages?" "What are the representations of the Moon in our lives?" "How complex is learning about the Moon's motions?" "Are there cultural icons of the Moon?" "Are there specific cultural events to celebrate the Moon?" "How old are the explanations about the Moon, and what are their histories?" The diversity of these questions reflected the cultural and subject-oriented variety in the students' community of inquiry. As they asked about the Moon as a social, cultural, and educational phenomenon, they considered various issues:

- the discrepancies between the scientific view of the Moon as universal and the cultural approaches and various interpretations of the Moon;
- the tension between learning about the Moon as a scientific phenomenon and personal understandings/meanings given to the Moon;
- alternative educational ways in understanding Moon's motion, color, existence, measurement, and so on;
- the Moon as a particular phenomenon in different disciplines; and
- the Moon as stereotype in social contexts.

The inquiry conducted to address these issues soon became an action project—to build a kit representing their own learning and providing resources for others. The kit was both physical, a box with various objects and books, and an electronic text in the form of a wiki. Its design drew from diverse published sources, such as Eleanor Duckworth's (1987) "Teaching as Research" essay, Web instructional references, learning and information technologies, and course readings, but also from a variety of community resources, such as the community college planetarium, the art museum, and the host of the astronomy program on a local public radio station. In addition, its motive force was the desire to create something useful for communities beyond the classroom. These included local teachers, planetarium visitors, after-school programs, individuals with interests either in the moon or in inquiry in general, and anyone with Web access who might find something of value in the kit.

Students drew upon a wide variety of digital technologies, such as email, a bulletin board, collaborative document sharing, wikis, Web searching, as well as others specific to the project, such as astronomy image files and simulations. They also used many nondigital tools, for example, to make various solar system models. As they used these technologies, they also transformed them, or appropriated them to their purposes. In some cases, this meant creating hybrid technologies, such as a digital photo library showing pages from a paper-based

journal. This was done in order to communicate the inquiry process as well as to provide a model for others who might do similar projects. Figure 25.3 shows one page from one of those journals.

Here is a sample entry:

> 3/13/06 This past Friday in Indiana, I glimpsed an almost full moon. It was very bright, and wispy clouds floated across. What was most interesting was the wide halo around it. The inner circle was whitish-yellow, then turning into orange, and then a reddish-pink. Why those colors? Does it have to do with refraction through clouds?

The moon study showed that when people have the opportunity to create and to be actively involved, they can build a community of inquiry, design practices and artifacts that extend beyond what they could have envisioned originally, contribute to larger community needs, and learn more in the process. Yet, questions remain for the moon project and for similar classroom-centered activities: Can that kind of collaborative activity extend to the community beyond the protective wall of the school? Can we transform research on this kind of learning by involving participants more? Can we begin to see the community as the curriculum?

Discuss: Multiple Perspectives Meeting in Community Dialogue

In this section, we look at research emphasizing collaboration and dialogue in inquiry where learning, community, and technology intersect. This research shows the importance of dialogue and community participation; it also reveals some of the challenges in developing more effective dialogue and how to support it (Day, Farenden, & Goss, 2006; Lissonnet & Nevile, 2006; McQuillan, 2006; Merkel et al., 2004; Moggridge, 2000; Srinivasan, in press). Further, it shows that people learn through listening and talking (articulating own understandings). We need more research on how dialogue operates, how different communication tools support dialogue in different ways. And it needs to be participatory—research with strong basis in dialogue across differences among research participants.

The next case is an after-school, homework-help program established for the children of new Spanish-speaking immigrant families at the B. T. Washington Elementary School in Champaign, Illinois. It illustrates the potential and challenge of meaningful communication across difference with technologies (Monroe, 2004; Nardi & O'Day, 1999). In contrast to Paseo Boricua, the community of inquiry formed very quickly, in response to mutual concern, but without previous collective experience and time to bind. The B.T. Washington program came into being several months after we held an informal focus group with parents at Shadow Wood, a mobile home community in which about 60% of the residents are recent Spanish-speaking immigrants who are struggling to make ends meet and build new lives for

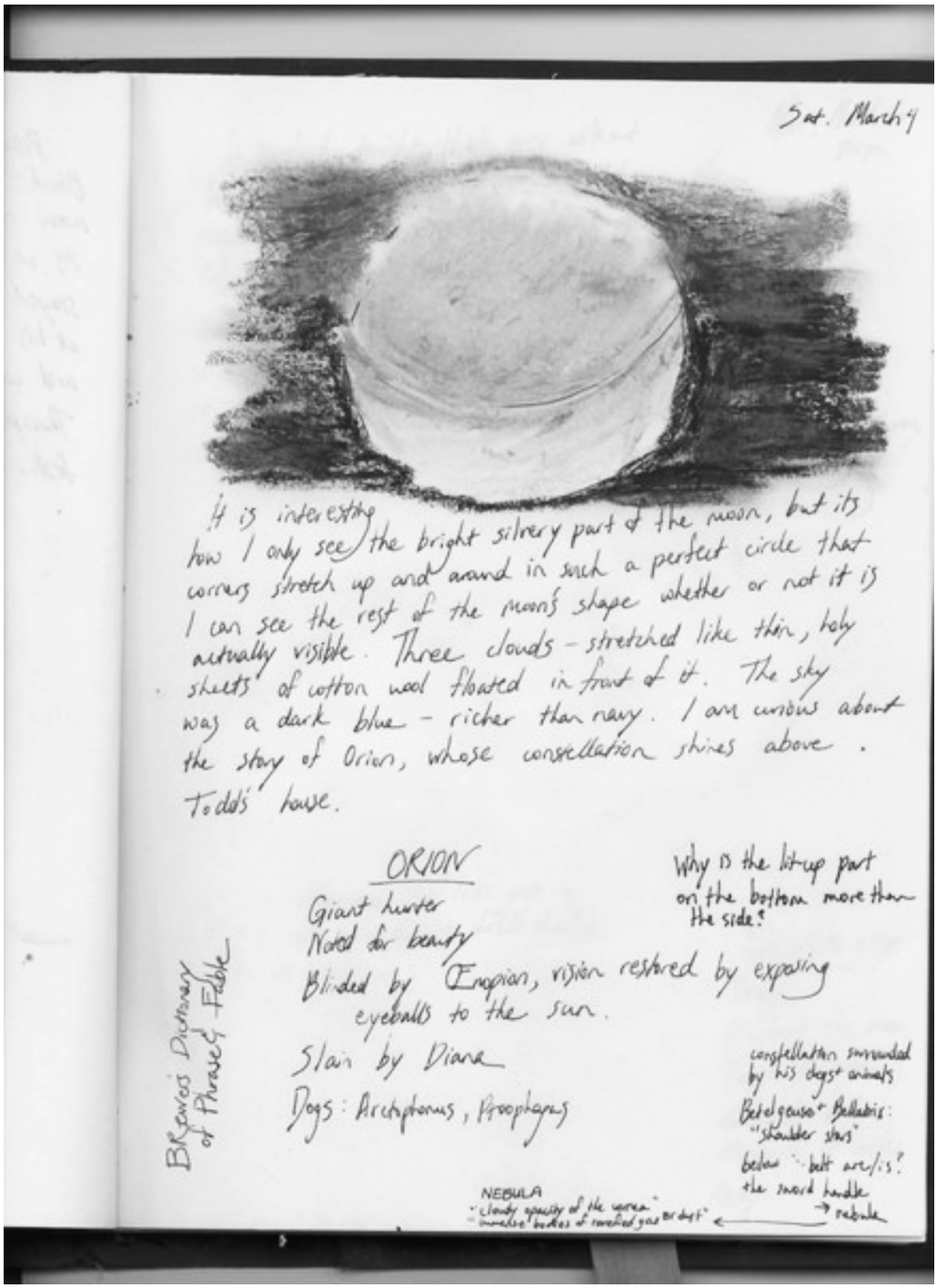

Figure 25.3 Excerpt from a moon journal.

their families. The primary concern expressed by parents was that their children were falling behind in school. The principal, librarian, literacy specialist, and teachers at B.T. Washington, which many of the Shadow Wood children attended, were eager to help and very supportive. We decided to house the all-volunteer run program in the school's library and offered homework help and other learning activities 3 days a week for about 14 children, including both those from Shadow Wood and several from the local Black community immediately surrounding the school.

By the end of the program's first semester, over 25 volunteer tutors had participated, with each volunteer working only several hours per week, with tenures of 2–12 weeks. Volunteers came from a variety of sources: students in an undergraduate Spanish course, students in our community informatics practical engagement course, literacy volunteers already working at B.T. Washington, long-time Shadow Wood volunteers from the local community, fraternity members, and other individuals who had heard of the program, including an undergrad in engineering, the deputy director of a campus museum who was stepping down in order to enter grad school in library and information science, and a high school student. Volunteers, thus, had a variety of motives and expectations for participation. Because of the urgent need, the program was launched very quickly, with no time for overall orientation sessions, and with new volunteers trickling in every few weeks. Very few of the volunteers had any previous acquaintance with each other. Several issues immediately came into play, including differential technology access and patterns of use, assumptions about the technology and communication, existing practices, and issues of hierarchy, role, and identity.

When new communities come into being, the myriad roles, communication patterns, values, and so forth have to be identified and negotiated. Often, this means transforming existing, often implicit, and conflicting patterns. For example, while they were very active and engaged in their one-on-one interactions with the children, some of our undergraduate student tutors saw their roles as minimal engagement in designing program activities, requiring commitment overall. For example, a crisis arose when only one student out of six showed up on the day before spring break. It became apparent that e-mail and the Web would be crucial to sharing information and building common base of knowledge among the diverse and loosely bound volunteer participants. We created an iLab for the B.T. Washington program, which housed schedules, participant rosters, rules and guidelines, a volunteer pledge, program forms, worksheets for specific activities, and so forth. While our iLab and e-mail use did not solve all of our volunteer coordination, communication, and community-building problems, at least it allowed for core knowledge to be accessed and disseminated, and it provided a common home base for volunteers, where no physical base existed.

Another situation desperately calling for discussion across difference was perceived cultural, ethnic, and literacy gaps inherent in the group of children and in their relationships with the volunteers. Girls sat together, apart from the boys. Mexican children sat together, apart from the Black children. Slights were noted, as in the complaint from one of the Black children that "You let the Mexican kids on the computer more than us." All of the children were much more proficient with verbal communication than reading and writing, and few had any experience with computers and the Internet.

To address this situation, we took an asset-based approach, modeled on Moll's community funds of knowledge work, which illustrates how members of the community have deep funds of knowledge which are often disjoint from those of mainstream disciplinary communities and mainstream schools (Moll et al., 1992). We wanted to emphasize what the kids knew and were good at, like chess, origami, and magic tricks, and to use that to build positive self-image, respect for each other, and literacy. The kids expressed interest in learning how to make their own Web pages, so we introduced them to the B.T. Washington iLab and showed them how to make Inquiry Units. They showed incredible patience with stubborn technology, spending a lot of time laboriously striving to enter their passwords correctly. They liked making Inquiry Units and were more amenable to writing with the computer than with pencil and paper. And the world came into their writing as they expressed their feelings about being different:

Example 1: Calling Names

Kyla Morris thats my name poeple at school call me names I go home and tell my mom but when I go to school they throw me in the pond

Kyla Morris thats my name count to three its still the same turn the rope and watch me spin quick desiree jump on in.

Example 2: Michael

I am a good preson I like to play kickball and soccer. When I go home I am going to go outside and play wath cyria malky lacyria and shacyria and khiri

Example 3: Exploring Rosa

How much they pay to the soccer team. What T-shirt you need to use. We need to buy are shoes to play soccer.

http://www.womensoccer.com/gsw

I Like to play soccer. I want to be a star of soccer.

Example 4: Exploring Juan

Hi, my name is Juan Munoz. I like to play soccer and like to watch wrestling. My favorite wrestler is Ray Mysterio

[with links to images from a wrestling Web site]

Interactions around literacy expanded when an undergraduate art student joined the volunteer group to do an independent study—making with the children a film that documented what they were good at doing. Children gained technical and social skills in the process of making the movie. They also expanded their literacy skills by writing memos to their parents requesting permission to participate in the filmmaking. Further, the video spurred the creation of an iLab video archive for a variety of similar community-based projects. This video archive has now come to serve the needs of other community projects.

Reflect: Making Sense of Experiences

Jane Addams and others working in the Hull House community saw that education is a reconstruction of daily experience, which relates it to both the past and contemporary life. Diversity of experiences among community members was not an obstacle, but instead, a resource for learning, especially when there were opportunities for dialogue and critical engagement with others. In an Q42 essay on education of immigrant children, Addams (2002) noted, "We send young people to Europe to see Italy, but we do not utilize Italy when it lies about the schoolhouse" (p. 238). She realized that there were enormous funds of knowledge within the community (cf. Moll et al., 1992). Building upon that knowledge was the only approach to education and social change that had any chance of success.

One cannot look at the experiences of Hull House or contemporary community action projects, such as the Youth Action Research Institute (Berg & Schensul, 2004; Schensul, 2005; http://www.incommunityresearch.org/research/yari.htm) without being struck by the separation between much of life in communities and life in formal education, including universities; this, despite the fact that the rhetoric of education at all levels refers consistently to meeting the needs of individuals and communities. "Learning communities" in the school setting are remarkably immune from the communities lying about the schoolhouse.

If we ask the question "what does the university know?" we might say that it claims to know everything. Certainly, it embodies through its libraries, research facilities, courses, and people the knowledge of diverse disciplines. But it is curious that the typical university does poorly at reconstructing its own daily experience. It knows little about itself (its learning community). It

knows even less about its relation to the communities in which it participates. Moreover, these limitations in its knowledge are perpetuated by the fact that it knows little about how to inquire within and beyond its walls on these topics.

One example of a project to address this separation of university and community is *Ethnography of the University* (http://www.eotu.uiuc.edu). It began with two primary motivations. One was to engage undergraduates in research. The second was to build a repository of knowledge about the university from the experiences of those living within it. This repository would supplement the usual contents of a university archive, such as addresses by the Chancellor, budgets, organizational charts, course syllabi, and so forth. To date, there have been 50 courses in various disciplines participating in the project. It is now expanding to other campuses. Students gather data through photographs, video, interviews, document analysis, surveys, and discussions. They create Inquiry Units for ethnographies to represent what they have learned. Their studies have led to changes in the courses involved and for themselves. They are helping to change the definition of what a university archive can be, and their findings can change the university or the surrounding communities. Thus, they are exemplifying inquiry as transformation of an indeterminate situation.

The project also illustrates what happens when users are not merely recipients of a design for inquiry, but take an active role in creating that design. The project became a major driver of the *Inquiry Page* and the *Community Inquiry Labs* as students and faculty discovered new ways of defining an inquiry cycle and using online Inquiry Units. They wanted different terms for aspects of inquiry and greater flexibility in defining steps in the process. They also sought tools to support more collaboration, such as comments on Inquiry Units. A major need was a more elaborate scheme for access, one that would permit sharing of findings across groups where that was appropriate, but also privacy for participants where that was needed. In this process, participants in Ethnography of the University recreate the very technologies they are using, their own tools for further inquiry. This is the essence of the pragmatic technology idea. Table 25.1 shows a set of student ethnographies of the university, which were presented at a student conference in Spring 2006.

In EOTU, students learn about themselves and responsible action in the community. Many learn about how to make positive social change. In the end, most faculty report that they learn more about the disciplines as well.

Conclusion

The research discussed echoes Ladson-Billings' (2006) call to frame immediate issues of achievement in education within the larger issue of education debt, within which she included the historical, income, wealth, sociopolitical, and moral debts accumulated by (United States) society with respect to

Table 25.1 Student Ethnographies of the University

Author, Title
Michael Cozza, The Introduction of a Neophyte into Gaming Culture
Kaitlin Sulkowski, A Look into the Social Phenomenon of Facebook
Aly Marchetti, The Daniels Street ATM on Wednesday Nights
Jonathan Wassell, The Life of the Off-Campus Student
Christina Miceli and Kari Schmehil, Two Tattoo Parlors
Jennifer Mull, Unethical Treatment of Volunteers
Amy Franco, Technology in the Illini Union Vending Room
Ben Krop, Justin Meyer, and Nipa Patel, University Grading Issues and Policies
Kurt Rottunda, Chinese Students on the U of I Campus
Louis Morton, Coffee Talk: Language in Cafes Across Campus
Suzanne Perkins, Ethnography of the Language of Creative Writers
Nate Harmann, Acting and Acting Myths
Nicholas Murphy, The MTD 22 Illini
Christine Travers, Ethnography of the Urbana Fire Department
Andrew Meyer, Three Hours that Changed the World: T. K. Cureton
Tiffany White, Student Workouts at WIMPE
John Noble, The Canopy Club and Its Culture
Bryan Calip and Laura Haning, Scott Hall and Video Gaming
Cole Cullen, Residents' Use of the Gregory Drive Computer Lab
David Lai, College Gamers: Their Technology, Their Academics
Allie Wyler, Technology Used in Special Education
Angela Marconi, WPGU: Technology and Tension of Corporate Media
Daniel Edgerton, The UIUC Account Billing Office
Joe Bottalla, The Behavior of Aviation Students
Maria Frias, Coming Out Stories at the U of I
Lissette Uriostegui, The Technology and Creativity of the Metal-Smithing Community
Andrea Henderson, Greenhouse Workers in the Plant Biology Conservatory and Their Technology
Chris Manna, Those Who Work Out in the ISR Weight Room

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Chris Manna, Those Who Work Out in the ISR Weight Room

African American, Latino/a, Native American, and other groups. Starting with community as a key term reminds us that learning and literacy are always embedded within social and economic structures and processes.

Writing about the conditions necessary for the Great Society to become a Great Community, Dewey (1927) wrote,

> The highest and most difficult kind of inquiry and a subtle, delicate, vivid and responsive art of communication must take possession of the physical machinery of transmission and circulation and breathe life into it. When the machine age has thus perfected its machinery it will be a means of life and not its despotic master. Democracy will come into its own, for democracy is a name for a life of free and enriching communion. It had its seer in Walt Whitman. It will have its consummation when free social inquiry is indissolubly wedded to the art of full and moving communication. (p. 184)

Two generalizations emerge from this review: First, beyond the acquisition of specific skills and knowledge, education means that individuals develop in a reciprocal relationship with the development of community and society. Second, the development of responsible citizens requires a process of community inquiry, one that occurs across people from all walks of life, in all situations. Q45 Given this, it is puzzling that so little research focuses explicitly on the processes of community inquiry. One explanation is that the lack of an inquiry perspective makes it all too easy to fragment or separate aspects of activity.

To take a concrete example, service-learning, which might be considered as the epitome of engaged citizenship, is often reduced, in both research and practice, to a narrowly defined activity with discrete and limited curriculum goals. Thus, researchers might ask questions about whether students learned specific skills and developed self-esteem. But they shy away from bigger questions of whether the activity truly transforms society or the students. The same argument could be made for research in community informatics, literacy acquisition, technology design, and related areas. Our academic disciplines, with systems of rewards and punishments, are political forces that marginalize any challenges to the established order. And our strongly ingrained habits to look at minute but easily achievable goals, all conspire to make us keep a little distance from larger questions such as: What kind of society should we have? How can we truly achieve full participation? What are the real conditions for full development of individuals and society?

When we speak about literacy we need to do so with the view of the world we hope to inhabit. We hope that this chapter indicates the value of looking

beyond established modes of thinking about these questions and itself fosters community inquiry in a deep and collaborative way.

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