

## CHAPTER 2

### AN EXTENDED MODEL OF LEARNING

#### 1. INTRODUCTION

The youth center was located in the city's economically derelict south side. The center itself was precariously funded, barely hanging on to its faux-modern building in a seedy-looking lot on a tree-lined side street. Its director, however, was an energetic woman with ideas on the center's potential role in the neighborhood. She wanted to develop the center as a place where children from the neighborhood could come to learn basic computer skills – word processing, designing World Wide Web pages, online information search skills. This was good for character building and for discipline, she felt. Such skills would prepare “her kids” for jobs in the real world.

She had other ideas too. The neighborhood's (many) elderly residents felt isolated. Why not connect them to the Urban-net, an advanced ICT-enabled community network being developed in our community, through the center? They could talk to other seniors in the city's residence homes and exchange email and browse the Web over the Urban-net's Internet connection. They would be a part of the city in a way they were not at present. The network could connect the city's growing elder population and help enrich their lives.

The center's education room had a handful of very old personal computers. These were not connected to a local network or the Internet. The center's administrative computing infrastructure was modest as well. The technical staff, such as it was, was one person who “wore many hats” at the center. The receptionist helped out when she could.

This is one of many stories playing out on the shadowy margins of the digital revolution. Here's another.

The faith-based social agency had been established some years before and represented a coalition of over a dozen clerics from the Christian and Islamic faiths. Lay residents were also part of it, drawn by the possibility of using religious institutions and democratic means to improve social relations in the city's poorest sections. Fairly or unfairly, the city's poor felt victimized by the police. Periodically, they would get exercised over police action against a minority resident. The coalition would rally its members and other faithful in a church or mosque, meet with the Mayor and the police chief to press petitions, meet with the press, and, if the infraction was serious enough, organize a candlelight vigil later in the day in a public space downtown.

The coalition was headed by a pastor. He had obtained a donation of used personal computers and distributed them to several members of his board. A

volunteer trained recipients on basic computer skills (this was apparently arduous: with a few exceptions, members were technophobes or slow learners). The plan was to connect all the machines to the Internet. The pastor used the telephone to get the word out to members on developments demanding the coalition's attention, but calling each member took time and effort.

Community-based organizations grapple with social issues at the grassroots but face significant barriers to ICT use. The youth center had outdated equipment they could not replace for financial reasons. The technical support available in-house was inadequate for realizing the director's dreams. The faith-based coalition had some donated equipment but depended on volunteer (and unreliable) technical support. They needed technical help to think through the problem vexing the pastor: how to mobilize the faithful without relying entirely on the telephone? The Digital Divide – the gap between individuals and households with ICTs and those without – is not as well known in its institutional form. But at the youth center and the coalition, the implications of the divide are real, urgent, in your face, and felt every day. Sadly enough, they are hardly atypical. Small entities like these have little in the way of technology and knowledge. They are often critical components of a community's social infrastructure. If they are left out of the digital revolution, so are the populations they serve.

As it happened, the youth center and the coalition received help through our classes at the university. We were able to donate used personal computers to the youth center. Students enrolled in one of our classes then worked with the center's technical staff to connect the donated machines. The project was completed over two successive semesters, with two sets of student teams working on the problem. For the coalition, a student team proposed an Internet fax solution. All members of the coalition had a fax machine, and fax was easier to use than email. A team the following semester realized the solution, installing an Internet fax server (a computer that receives and sends fax out over the Internet) and demonstrating it live for the pastor (he was delighted). The software, obtained free over the Internet, could send out the pastor's message as an email message or as fax, depending on the recipient's preference. The team wrote a user's manual as well as part of their project.

The help we provide through our classes only highlights for us the enormity of the problem. Agency A has no computers. Agency B has a few but has no network; its director's husband had started wiring the place up in his spare time but the job was not completed. The wiring plant was undocumented, which meant no one except the husband knew which wire went where. Agency C, a community arts group, has this vision of digitally capturing and transmitting community arts programming to a community center over a network but doesn't know how. The list goes on and on. CBOs are severely challenged. The larger institutions, such as public hospitals and K-12 schools, are better off with respect to common office technologies but are under resourced when it comes to *emerging* technologies and applications. The need for technology and knowledge resources is deep, varied and significant in scope in our community institutions.

Based on our experience, we can say that learning-in-community programs can help with the knowledge problem. Such programs can offer a local, sustainable way

to assist needy institutions. They can help infuse professional education with social values. We believe the following to be important if such programs are to thrive:

- The learning experience has to be offered as part of the regular curriculum, through regularly offered, for credit courses. Organizations should be able to count on help on a continuing basis if needed. Students lose interest if the experience cannot count toward their academic program. Being included in the regular academic curriculum is an endorsement from the school: it signals the learning as valued, relevant.
- Learning-in-community programs have to be prepared to offer help in a range of subject areas. A client may need help with computer networking one semester and systems analysis and database the next. Similarly, students should have an opportunity to work in diverse subject areas through different classes as they go through the program.
- Such programs should have access to technical resources to allow hands-on learning by students and clients. Learners' ability to test hardware and design and develop software applications (we refer to the latter as prototyping) depends on access to a technology lab or resource center. The resources may range from common office ICTs (computer hardware and software and local area networking gear) to more advanced technologies.
- The learning stimulus has to be carefully thought through and continuously refined. As it stands now, the stimulus we use structures the learning experience in terms of planning and design elements and fosters student peer learning. The client is often a co-learner with the student; the instructor becomes a guide and a coach. The motivating properties of the learning stimulus for the student are as important as the social benefit produced through it for the client

## 2. MICRO AND MACRO-SOCIAL RELEVANCE

Computing is a social technology. A particular configuration of ICTs is the result of social and political choices, and the designed product is better equipped to satisfy some users and needs than it is to satisfy others. The political and economic interests of powerful players shape such choices. ICTs can be used to consolidate the status quo or challenge it. It can bestow power or take it away. Technology choices have profound social implications at two levels. First, ICT planners and designers have to consider solutions within the context of the work practices, culture and power in the adopter organization. We call such an awareness the micro-social level of relevance in professional education. Learning that is relevant in this sense involves understanding the context within which ICTs are embedded and within which it is used. Attempts at changing the context have to start with a good appreciation of it; technical knowledge alone is not enough. Technology choices often do have many unintended consequences for the adopting organization. Contextualized learning confronts the learner with basic questions about the nature of technical professional practice: What is a consultant's role in the client organization? Who is the client? How can I be an effective agent of change in this milieu? The following example illustrates the urgency of such questions.



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