What does it take to prepare young people to enjoy the full benefits of being “wired”? What is an appropriate program response from schools, given their charge to coach young people for this electronically networked global village and workplace? What is the role of teachers delivering such a program?

In times of rapid change the ability to create fresh meanings and novel solutions to problems rises to the top. Reasoning, problem-solving, and decision-making are skills that must become the focus for classrooms of the next century. Students will make the answers. Teachers show the students how to navigate through vast databases to locate information which will provide the basis for new insights. Information is hot, fresh, current, and rich. Classrooms are linked by wide area networks and to the Internet by a direct connection. Teachers provide students with the “technology of questioning”… Essential questions, unanswerable questions, provocative questions, divergent questions, curiosity. Questioning is the technology used to make meaning out of information.

Students will do real time research…exploring questions as they appear with fresh information right in the classroom. The research will be project based which requires students to work in teams on problem solving or decision making questions using a combination of new technologies with older ones. As traditional publishing changes to electronic forms schools will motivate students in publishing the findings from their research, the results of their creativity, the best of their thinking.

Classrooms will be equipped with one networked computer for every three or four students in the room. Schools will provide a combination of low end and high end desktops to extend student access. The strategy of providing a single desktop computer only makes sense if the computer image can be projected for the whole class to see. This monitor allows the whole class to enjoy virtual field trips, learn search strategies, and explore topics by communicating over a network. It can also be used by teams of students to do research and present findings, but really, does not provide adequate access. Providing a large display device is essential no matter how many computers are in a classroom. (Computers + large display = approx. $5000.00 per classroom)

The student desktop will offer tools such as spreadsheets, databases, word processors, charting programs, outlining programs, multimedia presentation software to support analysis and problem-solving. For students and teachers to take full advantage of the
“wired” classroom, they must have storage space so they may collect and interpret information in a consistent manner. No printing or diskettes needed.

Students and teachers will gather and organize information electronically, cutting, pasting, sorting, sifting all in search new meaning and understanding. (Software + network = $8000.00 per school) *not including infrastructure (conduit, wiring) at school site.*

There is no correct way to organize technology in a classroom, since different learning and teaching styles will be better served by a variety of configurations. The issue is the involvement of the teachers in deciding where the equipment will best support student learning after visiting successfully “wired” classrooms. Computers should serve the classroom best when placed as stations around the room rather than in one central location. The classroom will have multiple drops for the network (8 minimum), the floor will be a grid of conduit and provide easy access to power, the chairs and tables will have wheels for easy re-configuration of the working environment. Flexibility becomes a primary design concern. (Ergonomics = $3000.00 per classroom).

Given a school of 20 classrooms and an average of 30 students per classroom, the population would be 600 students, and most likely, 20 teachers. Based on the approximations above the total cost to “wire” this school, *not including infrastructure (conduit, wiring) at the school site,* would hover around $168,000.00! It makes no sense to buy 160 (8 per class) computers, network them and drop them onto classrooms without providing substantial funding for staff development. There is a very good chance that 60-70% of those computers will be used less than 20% of each school day.

**Return on Investment (with weak staff development)**

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112 \times 20\% = 22 \text{ computers} \\
48 \times 75\% = 36 \text{ computers}
\]

Total Effective Computer Use = 58 computers

You'd be far better off buying 112 computers and spending the rest of the money on staff development so that most of the computers will be used most of the school day.

The “wired” school should focus it’s attention on tasks which are completed throughout the learning process, not just the end product. We keep asking how our students might improve and grow. We don’t wait until the end of the process to ask how we are doing. We ask students to adjust and modify their efforts to see what is working and what is not. As much as possible we select challenges and issues from the “real world” and we ask students to give us their best thinking in response to these challenges, utilizing the tools of the “wired” classroom.