In this opening scene from the year 2001, the teacher is no longer alone in the classroom. The vast array of technology allows the teacher to have access to mentors in the community and around the world. Instructors are able to implement “Meet the Expert” by way of telecommunications through video conferencing where information is exchanged. Communication can take place in this real-time arena using two-way audio and video. Textbooks that are now on-line, have links to sources around the world. More up-to-date information is available and the sequence, pace, and depth of study is up to the student and teacher. This constructivist classroom allows for shift in instructional strategies, altering content, and nurturing students’ own natural curiosity. Having access to a wide range of mentors and experts is credited to a government program created in the year 2001 to compensate businesses for donated time by their employees. Just as donated equipment is a tax write-off, so is the time that employees give to the educational system.

In this classroom, students are not only linked to adult experts but also with their peers around the world gaining insight and deeper understanding of different cultures. Students are acquiring information that is not available in textbooks or even the Internet. As information is exchanged, students take on the role of local expert developing their own knowledge of their community and taking ownership of their learning. Multimedia tools used in presentations to their peers allow them to become teachers to others. Class projects are on-line and available as a source to other students around the world.

How did this classroom evolve from the traditional model to its current new
educational model? In July of 1999 California Department of Education made recommendations for the use of telecommunications in the classroom. Infrastructure, hardware, learning resources and funding were addressed.

http://www.cde.ca.gov/ftpbranch/retdiv/ccc_task/ccc_recomend.html

Telecommunication Infrastructure

• “Equip every classroom and school library with the telecommunications capability to support interactive, high-speed transmission of full-motion video, voice, and data.”

Hardware

• “In every classroom provide:
  six to eight networked multimedia computers with high-quality monitors
  special interfaces for persons with disabilities
  scanner
  networked laser printer
  27-inch or larger television monitor
  overhead projector and screen
  telephone

• For every five classrooms, provide:
  color printer
  audio recorder
  liquid crystal presentation panel
  video recorder
  videodisc player

• For every 15 classrooms, provide:
  fax machine
  high-speed copier”
Learning Resources

- “Adopt a shorter submission cycle (for instructional materials)
- Include supplementary materials, not only full courses of study.
- Improve reviewers’ technology expertise.
- Establish a network of Web sites for statewide exchange of information regarding learning resources and their effective use in classrooms...”

Staff Development

- Resources recommended for staff development, salary incentives
- Possible requirements of technology proficiency for new and returning teachers

Funding

Financial issues were discussed in this same report recommending potential sources of income to include “...a broad sales tax; targeted taxes on video cassettes, software, and computers and peripherals; bonds initiated at the local, regional, and state levels; a surcharge on telecommunications users; an increased state income tax; and growth dividend funds.” However even though some of these sources of income were pursued, it was some of California’s major corporations that made this school in 2001 possible. As Roy D. Pea, Dean of Northwestern University stated, “Businesses are spending billions training people because they don’t learn how to use technology in schools...” California’s major corporations helped bridge the remaining gap of funding by creating “Adopt a School” knowing they would have a return on their investment with future employees possessing technology skills. They encouraged local businesses to actively support their schools through the donation of hardware, software, and mentor employees’ time. Legislation resulted in the compensation to these businesses. However, it was the greater reward of working
with today’s youth that inspired great participation in this program and brought us to
the year 2001.

What is the physical environment of this classroom and every classroom in this
K-8 school? You walk into the classroom and you will not see any computers even
though each student has their own. The desks have tinted glass with the computer
monitor underneath tilted in such a way to be easily viewed. This allows the surface
of the desk to be used for traditional uses while still having the functionality of a
computer site. The keyboard is on a pull out shelf for easy access. However this is
not your normal keyboard. Attached you will find a “One Touch Response System”
that allows students to enter answers to questions. Instant tabulation occurs
showing percentages of student understanding and/or individual responses. This
form of assessment allows the instructor to quickly check for understanding and
reteach or modify instruction. Also available to the instructor and students is a
complete array of multimedia technology. Overhead projectors that don’t need
transparencies project the image on the large screen turning any page into an instant
teaching tool. A control panel operates short video clips or full length documentaries.
The access to different video subject matter is cataloged in a data base that allows
you to click and view. No waiting to reserve tapes.

Each student has a portable digital notepad that allows them to take notes in
many different situations. They can move into small groups for collaboration, take
notes, and then transfer the notes to their computer for review by the instructor. The
notepad also has a video digital camera with an advanced data compression
program that can record science experiments, drama productions and then play them
back via the computer. The notepad can be used to do homework, especially if a
computer is not available at home. The notepad can be linked to the Internet via the
TV cable and by using a split screen, students can research and take notes
A scanning pen allows students to scan text such as web site addresses. These notepads are much more practical at this time than issuing a laptop computer to everyone. Even the kindergarten students have a notepad.

Mobility is important in this school. Each classroom opens into the central multipurpose, domed room. Some areas have tables for projects while other sections have carpeted amphitheater seating for presentations, dramas, and brainstorming sessions. Still other areas have conversation pits for small groups. Much of the wall surface is acoustical tiles, but it slides to reveal white boards and projection screens. The highlight of the multipurpose room is the planetarium tucked away in the dome. More surprises await the learners as a section of the roof slides back and the dome rotates as the planetarium becomes an observatory. The telescope positions itself through computerized mechanisms and a specially scheduled night viewing begins. An integral part of this learning environment is the parent participation program. Parents add their expertise through activities, help monitor the multipurpose room, and manage multimedia equipment.

The goals of this technologically advanced school are to provide opportunities for students to explore their world in this Communication Age. Integrating curriculum, teachers facilitate learning by giving direction to students’ work while at the same time stepping back to allow students to discover the many different approaches to problems. Students using powerful learning tools of technology, research and collaborate via the Internet. This educational setting allows students to become self-directed learners as they discover and relate these discoveries to their lives.

Is this a classroom from the future or a possibility for today? Most of the described technology already exists today, but the real problem seems to be funding for hardware and staff development. Once Federal and State governments mandate changes in technology curriculum, the money will be found. Until then, teachers with
technology skills will continue to do battle on a daily basis to present some computer skills to their students.