On-line Learning

Education at fork in superhighway

By Dawn Yoshitake
Los Angeles Daily News

LOS ANGELES — Sitting inside his suburban Granada Hills home, Robert Jacobson is ready to tackle geometry as part of his Laurel Springs High School home-study curriculum.

But where are the mega-size math books?

They're not on his desk or bookshelf, or tossed about on the bed.

Instead, Jacobson's course instructions, study guides and reading materials come to him via the Internet, and the 15-year-old's contact with instructors is largely confined to electronic mail.

"It's more impressionable and more fun this way, than sitting by myself and reading from a book," Jacobson said as he manipulated a triangle on his computer screen.

Ojai, Calif.-based Laurel Springs School recently launched one of the few on-line high school home-study programs.

It's just one example of how technology and education are coming together on the electronic blackboard. California public schools are pushing to have every classroom wired to the Internet by 2001.

And a small contingent of colleges are offering degrees, from associate to doctoral, on-line.

"I think most people believe the Internet is an important breakthrough for distance learning," said Ken Hensarling, a co-moderator at a teaching panel at the World Wide Web '94 Conference Workshop in Geneva. "The tools that are available through the Internet have improved, and I think educators are finding more innovative ways to apply it."

Laurel Springs offers its high school students everything from social studies to science on-line. Course instructions are mailed electronically each week, requiring students to use information on the Web, CD-ROMs and software provided by the school. Answers and questions are then electronically mailed back to the instructor, said John Gavlik, director of on-line educational services.

Under the school's traditional program, students receive their books and course outline for the year and meet with the teacher biweekly.

"This is easier and faster," Jacobson said. "Rather than waiting to turn my things in when I meet with the teacher, I can send the answers in when I'm done."

But more importantly, the course work is far more interesting when viewing moving images and listening to sound, rather than reading a textbook, he said.

Take geometry, for example. Using the geometry software program, Jacobson can calculate the changing angles of a triangle congruence.

"Where this technology really shines is in the sciences, fine arts and social studies areas. . . . The full-motion video, graphics and sound makes everything pop up, rather than lie flat," Gavlik said.

"English, however, is probably better taught through books. It's hard to read a novel or set of poems on a computer screen. The medium that's

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Education sets a new course: the Internet

best for that is a book."

Jacobson is one of 40 students — among Laurel's 250 high schoolers — who have opted to take on-line curriculum. Tuition costs run 20 percent higher for on-line courses, averaging about $100 per month. Enrollment and material fees remain comparable, however.

"We've had to rebuild the structure of the school in a whole new way for these on-line courses," said Marilyn Mosley, Laurel Springs School director. The school is retraining teachers to be on-line savvy.

Brian Ray, president of the trade association National Home Education Research Institute, said more home-school programs are considering on-line courses, but most do not offer more than electronic mail correspondence with instructors.

Home schools, however, are further along than many public schools in the use of computers and Internet resources.

California public schools, which fall behind the national average in getting computers into the classrooms, face an ambitious — though some say unrealistic goal — of wiring every school to the resource-rich Internet by the year 2001.

"It's estimated that 35 percent of the school districts are connected to the Internet, but only 3 percent of the classrooms have it inside the room and only 2 percent of teachers have access to it," said Donavan Merck, educational technology manager for the state Department of Education. "It's pretty dismal."

California lags behind the nation for two main reasons — lack of funding and lack of leadership, Merck said. The estimated cost to equip and wire California classrooms to the information superhighway is in the billions.

And there's no way the financially strapped state is going to cover the project's costs with new funding, Merck said.

The department has worked with companies such as Pacific Bell and GTE, along with the Detwiler Foundation that donates computers to schools, to offset some of the costs.

Colleges and universities, meanwhile, have the equipment and wiring — but only a handful are rushing to offer courses and degrees on-line.

"We've had correspondence courses with regular mail and videos for decades, but now institutions are gradually moving onto the Internet, which gives immediate interaction and discussion groups. There's about 20 colleges that offer on-line courses," said Joseph Wang, president of Globewide Network Academy (http://www.gnacademy.org).

Globewide Network offers a list of colleges and research centers that feature on-line courses. Another one-stop shop for higher on-line education is the Electronic University Network (EUNHelloaol.com).

The college offerings vary, said Rick Eckel, EUN on-line services director.

For example, students can sign up for a doctoral degree from the California Institute of Integral Studies in San Francisco, where assignments and discussions with teachers and fellow students are performed on-line.

Meanwhile, a master's in business administration from Heriot-Watt University in Scotland provides electronic mail correspondence with instructors as the on-line offering.

"Most of the other colleges fall in between," Eckel said. "They provide a textbook with study guides, videotapes and on-line information on discussion topics for the week, when assignments are due and discussions with the instructor and classmates."

Despite some of the on-line steps colleges have made, several issues still loom large that may temper widespread use among academia.

Colleges, which prefer having students take all courses from the institution, may be reluctant to have on-line students pick and choose courses from across the world, Hensarling said. He added there are also the issues of determining compensation for instructors with hundreds of students on-line and how to monitor course work against cheating.

"These issues go against the traditional standard," Hensarling said. "But others see this as a way to tailor to the needs of society. . . . I think we're at the point where things can really change."