

EDUCATIONAL TECHNOLOGY IMPROVES STUDENT PERFORMANCE

Using technology to support instruction improved student outcomes in language arts, math, social studies, and science, according to a 1995 review of more than 130 recent academic studies.

[Bailo, Ellen R., and Jay Sivin-Kachla. 1995. *Effectiveness of Technology in Schools. 1990-1994*. Washington, DC: Software Publishers Association]

A review of computer-based instruction in military training found that students reached **similar levels of achievement in 30 percent less time** than needed to achieve the same level of competency using more standard approaches to training.

[Orlansky, J., and J. String. 1979. *Cost-Effectiveness of Commuter Based Instruction in Military Training*. Alexandria, VA: Institute for Defense Analysis.]

A congressionally mandated review of 47 comparisons of multimedia instruction with more conventional approaches to instruction **found time savings of 30 percent, improved achievement and cost savings of 30 to 40 percent, and a direct positive link between the amount of interactivity provided and instructional effectiveness.**

[Fletcher, J.D. 1991. "Effectiveness and Cost of Interactive Videodisc Instruction," *Machine Mediated Learning*, 3, pp. 361-385.]

A review of New York City's Computer Pilot Program, which focused on remedial and low-achieving students, showed **gains of 80 percent for reading and 90 percent for math when computers were used to assist in the learning process.**

[Guerrero, J.F., M. Mitrani, J. Schoener, and Swan. Summer 1990. "Honing in on the Target: Who Among the Educationally Disadvantaged Benefits Most from What CBI?" *Journal of Research on Computing in Education*, pp. 381-403.]

A comparison of peer tutoring, adult tutoring, reducing class size, increasing the length of the school day, and computer-based instruction **found computer-based instruction to be the least expensive instructional approach for raising mathematics scores by a given amount.**

[Fletcher, J.F., D.E. Hawley, and P.K. Piele. 1990. "Costs, Effects, and Utility of Microcomputer Assisted Instruction in the Classroom." *American Educational Research Journal*, 27, pp. 783-806.]

A 1993 survey of studies of the effectiveness of technology found that "courses for which computer-based networks were used **increased student-student and student-teacher interaction, increased student-teacher interaction with lower-performing students,** and did not decrease the traditional forms of communications used.

[Report on the Effectiveness of Technology in Schools 1990-1992," conducted by Interactive Systems Design and commissioned by the Software Publishers Association. 1993, p.2.]

Research on the costs of instruction delivered via distance learning, videotape, teleconferencing, and computer software indicates that **savings are often achieved with no loss of effectiveness.** Distance learning vastly broadens the learning environment, often providing teaching resources simply not available before.

[National Council on Disability. *Study on the Financing of Assistive Technology Devices and Services for Individuals with Disabilities*. March 4, 1993.]

A landmark study on the use of technology for children with disabilities showed that "**almost three-quarters of school-age children were able to remain in a classroom, and 45 percent were able to reduce school-related services**" when computer-assisted learning techniques were employed.

[U.S. Dept. of Commerce, *National Telecommunications and Information Administration*, June 1995.]