Surveying technology’s practical and futuristic applications

Conference attendance at EDUCOM ’94, held in San Antonio, Texas, October 31–November 3, 1994, topped the 3,300 mark, an increase over 1993 of about 500, but a lack of excitement about electronic information resources’ fulfillment of early promises may have dampened some of the attendees’ enthusiasm. As usual, the EDUCOM program bracketed the breakout sessions covering the practical issues of integrating computing technology into the educational environment, with presentations by several prominent players in electronic information infrastructure development. Although San Antonio can be pretty bleak during the end of October, the weather initially offered fiesta brilliant sun combined with crisp fall air. However, both the promise presented by early good weather as well as information-rich opening preconference institutes gave way to a muggy ambiance of electronic promise gone somewhat limp with humidity and clouds from the coast as the conference closed.

Much of the conference was characterized by differing points of view offered by two of the keynoters. George Gilder, senior fellow of the Discovery Institute and prolific author on the future, offered enthusiastic predictions of exponential growth for network technology. He punctuated his commentary with frequent double-armed gestures that seemed to mimic a puppet of the information industry. Listening to the words, which included predictions of 8.0 gigabyte carrying capacity of ordinary coaxial cable, combined with Gilder’s exceptional ability to paint vivid images through metaphor, attendees might have left the conference with the impression that electronic information nirvana was imminent. However, Gilder also used his metaphoric brush to suggest that we are not using technology effectively: “For the past decades, we’ve been using computers like cars in a jungle. The jungle dweller who discovers a car will readily uncover the technological wonders of headlights, radio reception, comfortable seats, and numerous other aspects of an automobile, but the real value of automobiles surfaces only when they are joined with highways.” He went on to say that “just as the personal computer essentially displaced the mainframe over the past ten years, the personal computer will displace the television set, the telephone, and an array of other appliances.”

Unfortunately, Gilder’s metaphorical promise of untapped information bounty gave way to the practical reality of empty content servers on the information infrastructure as well as on television. Gilder expressed disappointment in industry’s ability to recognize the noncompetitive, synergistic aspects of combined technologies presented by glass fiber, silicon chips, and direct satellite TV. Instead, Gilder’s comments reminded this attendee of surface hype underlain by the hollow reality of technology which is only partially employed.

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Technology and education

On a more practical level, Anita Jones, director of the Department of Defense's Research and Engineering Office, offered somewhat stiff, but solid comments on the impact of technology in improving education. She showed summaries of several research projects which demonstrate substantial improvement in test scores when technology is incorporated into instruction. Jones noted the exceptional faith placed in the promise of technology by the combined expenditure of the military on education; nearly $10 billion per year. While much of this expenditure provides for basic training of new recruits and maintenance of combat readiness, a large portion goes into fundamental programs of higher education. In fact, the largest single supporter of higher education research as well as technological application is the military. Jones reminded the listeners "that the Department of Defense runs half a dozen institutions of higher education including three research universities." Her pride in this accomplishment did not overwhelm her willingness for input. She shared her Internet address with those who wanted to express their ideas regarding future directions of Department of Defense input to governmental information policy. Jones issued a challenge to EDUCOM attendees to address her statement "that even as chair of a national information infrastructure task force" she had "never heard from EDUCOM." Perhaps she forgot that the Coalition for Networked Information (CNI) is a joint initiative of ARL, CAUSE, and EDUCOM.

Balanced between Gilder's exaggerated expectations for the future and Jones's careful presentation of the pragmatic improvements in education provided by current technology, other speakers provided significant examples of the ongoing progress often demonstrated at EDUCOM programs. Staff from the EDUCOM program office indicate that this conference was supported by more vendors than earlier ones even though the extravagant outpouring of food and favors previously enjoyed by attendees mostly was missing in San Antonio. Instead, information software providers, such as Claris, demonstrated new and improved products that deliver exceptional processing power combined with efficient utilization of current hardware. Instead of the hype and giveaway glitz of previous EDUCOM gatherings, this conference was marked by more practical systems and sensible purveyors of information highway resources.