Equity in Computer Education

Microcomputers are widening the
gap between rich schools and poor ones.

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The educational advantages and potential economic benefits to be gained from acquiring a knowledge of computers and how to use them render the question of equity in computer-based education a matter of paramount significance.

Computer literacy, broadly defined as the ability to use the computer as an aid to problem solving in all spheres of human activity, as appropriate, can greatly benefit the individual and the society. But it also represents the basis for creating a further schism between the "haves" and the "have nots." One of the outstanding implications of the new information technology is that poor people are the last to receive its benefits,[1] and those who lack the prerequisite skills of reading, writing, and computation are handicapped in attaining computer literacy. Thus, the economically and educationally disadvantaged are prime candidates to join the ranks of this new category of disadvantaged—the computer nonliterate.

To date, it would appear that public schools have unwittingly served to reinforce the advantages of the affluent in achieving computer literacy. Evidence that school microcomputer use is associated with the wealth of the school district first appeared in 1981, as the result of a survey undertaken by Market Data Retrieval (MDR). Nearly 30 percent of school districts where less than 5 percent of the population was below the poverty level used microcomputers for instructional purposes, MDR reported. In contrast, only 12 percent of the districts with over 25 percent of the population below the poverty level reported microcomputer ownership.[2] A follow-up survey conducted by MDR in 1982 found that 80 percent of the nation's 2,000 largest, richest high schools used microcomputers, while only 40 percent of the smaller, poorer high schools had them.[3] A separate survey undertaken by the Johns Hopkins Center for Social Organization of Schools during 1982–83 found that two-thirds of the public schools in the better-off districts had microcomputers, compared to 41 percent in the least wealthy areas.

The Johns Hopkins survey also found that schools that already owned microcomputers were more likely to buy additional ones than schools without any were to buy one for the first time.[4] This finding may be of greater consequence than the ownership gap between rich and poor schools, for it means that, contrary to popular belief, the poor schools are not catching up: growth does not mean equity. In fact, the wealthier schools are increasing their advantage over the poorer ones.

The most important equity questions are how microcomputers are used in the school and who receives the benefits. In this regard, Daniel Watt has pointed out that, "When computers are introduced into suburban schools, it is often in the context of computer programming and computer awareness courses. In less affluent, rural or inner-city schools, computer use is more likely to be in the context of computer-assisted instruction of the drill and practice variety. Affluent students are thus learning to tell the computer what to do while less affluent students are learning to do what the computer tells them."[5]

Because blacks, Hispanics, and certain other minorities are disproportionately represented in the inner city and among the poor, it can be assumed that students from these groups receive less than their fair share of computer instruction in general, and that they participate less in the higher level uses of computers in particular.

The rapid growth of microcomputer use in the majority of the nation's public schools is a tribute to the ingenuity, innovativeness, and hard work of both educators and the public that has provided support for their efforts. But if the benefits of the computer are to be provided to all students on an equitable basis, a major departure from present practice is required. Closing the gap will take additional funding and the development of resources—including skilled teachers and appropriate quality software.

Finally, it should be recognized that the attainment of equity in microcomputer education is only one aspect—albeit a major one—of the broader need for reform to bring about an appropriate, quality education for today's technological society. □

[1] K. Lenk, "Information Technology and Society," in *Microelectronics and Society*, ed. G. Friedrichs and A. Schaff (New York: Pergamon Press, 1982), pp. 273–310.

[2] "Identifying and Getting Your Share of the School Market for Computers" (Market Data Retrieval, 1981).

[3] *The Washington Post*, April 17, 1983.

[4] Center for Social Organization of Schools, *School Uses of Microcomputers: Reports from a National Survey* (Baltimore: Johns Hopkins University, 1983).

[5] D. Watt, "Education for Citizenship in a Computer-Based Society," in *Computer Literacy*, ed. R. Seidel, R. Anderson, and B. Hunter (New York: Academic Press, 1982), p. 59.

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