

TWENTY QUESTIONS ABOUT COMPUTERS

Social/solitary aspects

1. Do the uses of computers in the school foster cooperative ventures? Solitary work? Both? Is the school pleased with the proportion? What are the relative merits of having students send sparks back and forth between minds and having them engage in solitary investigation at a terminal?

2. Some students need to learn and practice social skills as much as or more than academic ones. How often is the computer a hiding place for these students, and what effect does solitary work at a terminal have on a child who needs to socialize? Is the computer any more of a hiding place than a book or a chessboard? Might the computer offer the solitary or shy child a way to gain recognition and make friends? Should social considerations enter into deciding where to locate terminals in the school?

3. Some computer materials are described as "teacher-dependent," others as "teacher-proof," the one implying nurture, the other distance. How does the school, through its educational program, create the best combination of dependence, independence, and interaction? How might the computer support or inhibit that effort?

4. A twelve-year-old boy facing minor surgery who was afraid he might not survive went to his terminal and typed his fears into it. It was easier for him to confide in a machine than in a human being. Adults, too, sometimes find it easier to talk to a machine than to another person. How can schools encourage the use of machinery as a tool and as a repository for thought while emphasizing the power of human exchange in accepting and resolving ambiguity?

Developmental considerations

5. Many teachers and experts in the field of child development feel that young children need tangible, concrete experiences to develop concepts. Young children are, and need to be, physically active. The computer, by its very nature, restricts physical activity to hand-eye coordination. Taking mathematics as an example, do computer programs based on pictures hinder or help conceptual understanding? A child may memorize number facts but not comprehend what they represent. Ability to spout those facts may actually conceal underlying confusion. How can the computer programs and languages teach concepts as well as computation?

6. We see pressure on students to acquire "computer literacy," which requires standardized, artificial-seeming phraseology. At the same time, we see equally powerful pressure on them to gain "literary literacy" by improving their reading comprehension and writing skills, expanding their vocabularies, enriching their use and understanding of language and its nuances, and developing subtlety, originality, and freshness of expression. Are these forms of literary opposites, or do they stimulate each other? How can we achieve both?