As computers invade more and more classrooms, educators find themselves increasingly at odds over the question of what a computer should do. Should children use computers to master skills? Or should they use their own skills to master computers? According to Patrick Suppes, professor of mathematics at Stanford University and the acknowledged expert on Computer-Assisted Instruction (CAI), mastery of basic skills is the prime function of computers. From his laboratory at Stanford, Suppes gives advice to many school systems and dissects students' learning behavior for research. The self-proclaimed "White Knight of the Behaviorists," Suppes finds himself in constant conflict with such "romantics" as Bob Albrecht, founder of the People's Computer Center. Albrecht believes that computers should be used as learning resources rather than as drill masters. People drop into his shabby one-room computer center in Menlo Park, California, to drink beer and play games like "Hulkle," "Space War," and "Bagels" with his three computer terminals. SR recently asked both Suppes and Albrecht to talk about their views on the role of computers in the classroom. Here are some excerpts:

One of our most important concerns is the people who say that because they have all these facilities and technology, teachers will write their own courses. I think that's no more true than it's been in publishing—that the average teacher would write a textbook. I think it's less true. In fact, I think what will happen is that the deeper we get into the subject, the more sophisticated the articulation of curricula will be. Just a student learning elementary arithmetic—or a second language—is a very complicated phenomenon.

From the introduction of the Gutenberg Bible in 1452, it was more than 300 years before books were used in schools. We move faster now, but people don't often realize how complicated the technology of books turned out to be in the schools.

I think the real problem with romantics is that their intellectual level is so poor. You get things in education that you don't find in any other field. Nobody would seriously listen to someone who wrote a book on how to build better televisions just on the basis of watching television. That is characteristic of education, unfortunately. People come in on a fly-by-night basis without a proper background in scholarship; they don't attempt to acquaint themselves with the scientific background of research on how people learn. It isn't that they may not make some useful layman-type comment. But that is different from posing as an expert.

What I find really striking is that people say things about intellectual skills that they would never say about physical skills. Nobody says that you can produce a first-class basketball or football team just by horsing around. Or suppose we trained pilots that way: let's take an airplane and horse around—it's a nice technological device; you don't need any training—just play around with it, take it up, and see how you like it. That's crazy! There's very little evidence that any but the smallest part of the population would ever learn mathematics on a playing-around basis.

It's like learning a language—like learning how to handle Russian verbs. That's not something you reflect on. That's a matter of skill, not reflection. It's like saying: I'm going to shoot baskets, and then I'm going to sit back for ten minutes and reflect on what I'm doing. That isn't the way you operate. That isn't the way human beings learn.