Panel Session:

Artificial Intelligence in Education

Jean B. Rogers, Chair
University of Texas at Austin

Education presents an interesting area in which to apply artificial intelligence techniques. While most AI projects area designed to mirror one intelligent entity, education involves two: the learner and the teacher. Further, for the learner, skill acquisition is very different from concept formation, while deductive concept-formation differs from inductive concept-formation. For the teacher, choices of teaching strategies vary for different learner goals, particularly depending on whether training or education is the purpose of instruction.

Jean B. Rogers

THE GAP BETWEEN ARTIFICIAL INTELLIGENCE AND CURRENT EDUCATIONAL COMPUTING AND TRAINING

Currently a gap exists between artificial intelligence and current educational computing and training. And the advantage is NOT all on the side of AI programs. Many of today's educational programs are cleverly constructed, rich in color graphics and can be challenging. But they lack real intelligence, especially in the tutoring module. On the other hand, AI based education programs possess advanced tutoring abilities but often seem weak in graphics, animation and principles of optimum interactive strategies. Programs with the best of both approaches will not automatically just appear because powerful microcomputers become available. Considerable lateral thinking and team efforts are among their prerequisites.

Theodore J. Crovello
University of Notre Dame

EDUCATIONAL SOFTWARE DESIGN: FROM COMPUTER SCIENCE TO COGNITIVE ENGINEERING

Unfortunately, the computer today is an underused and often misused educational tool, with even the best educational software barely tapping its potential. In the past (and too often in the present) we have looked to computer scientists to focus their attention on the computer and design quality into software. In this presentation I argue that now, if we are to make full use of the computer as an educational tool, we must focus on the person, learn about the learner, and look to this side of the computer-student system to advance the state of the art.

Currently our expectations for acceptable educational software usually require only that it meet basic functional design criteria, and even those criteria are rarely met. Sometimes we will intuitively feel that a piece of software is exceptional. Usually, this impression is the result of quality designed into the physical interface. This, however, is not enough! For significant learning to result from student-computer interactions, we must begin to explore and attend to the psychological interface. And in the near future we should expect even more. In this presentation I look at where we are and what is needed, and suggest some promising directions to pursue.

Wayne Harvey
SRI International