

PAPERT79

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Computers and Learning

The Computer Age: A Twenty-Year View

This article deals with how in general computers have been used in teaching children and how specifically Logo, the programming language developed by the author for teaching children, offers an alternative to the traditional use of computers in education. This paper is the best short introduction to Papert's view on the use of computers in education, as well as to Logo and its philosophy.

At the outset the author expresses his concerns: "Faced with a computer technology that opens the possibility of radically changing social life, our society has responded by consistently casting computers in a framework that favours the maintenance of the status quo. ultimate social cost of correcting the mistakes we are now making, mistakes that grow out of our collective resistance to coming to terms with what the computer is going to mean in our lives." Then he classifies and discusses the three most common uses of computers in education. They are drill and practice, simulation, and learning simple programming languages. All of these are used to reinforce traditional learning structures. In the drill and practice session the computer functions as an automated teacher and puts the student through a series of repetitive exercises. In simulation the computer acts as a laboratory through which simulated experiments can be performed. The student cannot discover anything else besides what the situation has been set up for. Papert cites this as an example of the computer programming the student. Basic fits into the third category. The author criticizes the language as being too restrictive. Hence it is difficult for children to write meaningful programs. Basic is an example of the QWERTY phenomenon. The second part of the article shifts focus and presents Seymour Papert's solutions to these problems: "Since the late 1960s I have been involved in a project that captures many of the features of what I see a positive direction for the future of computers in education. This project involves a computer language, Logo, and a computer based learning environment, the MIT Children's Learning Lab." The main feature of this language is the turtle, a cybernetic animal that moves under the control of the computer being programmed by the child. As the turtle moves across the screen it marks a path. The author shows how simple it is to draw figures in this language. The child is learning by being brought into a relationship with his own intuitive knowledge structures. The authoritarian model is broken. The child is eagerly learning and does not need to be motivated. This paper is well written. It should be read by anyone who is interested in computer science and in education and who wants to see what the

future will be like in the combination of these two areas. The author's ideas are valid. However he should have expanded the second part of the article because in that part he offers his own solutions instead of criticisms.