

FROM: RCA News and Information
30 Rockefeller Plaza
New York, New York 10020

COMPUTER-BASED INSTRUCTION SYSTEMS -- HOW THEY WORK

The computer-based instruction system (CBI) being demonstrated at the RCA Pavilion at HemisFair '68 is designed to teach large numbers of pupils simultaneously and individually. It offers drill and practice in key subjects, expressly tailored to each student's individual capabilities.

Robert W. Sarnoff, President and Chief Executive Officer of RCA, says:

"CBI marks a major breakthrough in helping teachers to instruct growing numbers of students, while meeting one of the basic needs of the learning process--the need to shape instruction to the unique capacity of the individual student.

"This is a milestone in the development of educational techniques, providing a teaching aid of unequalled scope and flexibility. CBI may, in fact, rank in importance with the widespread introduction of textbooks two centuries ago."

Here's how the CBI system works in its first operational installation just completed in New York City:

The New York system consists of 200 RCA student instructional terminals located in 15 elementary schools in Manhattan, Bronx and

Brooklyn. In some schools, one or two of the teleprinter terminals are installed in several classrooms while in other schools they are clustered in a single classroom.

Each terminal is used in rotation by some 30 pupils during the normal school day and eventually by additional persons attending remedial, adult or other instructional functions after school hours. The remote terminals are linked to small communications control units in each school. These in turn are linked to a central RCA Spectra 70 computer.

Each student goes to the terminal when his time comes, identifies himself by typing his name on the terminal keyboard, and receives anywhere from five to 20 minutes of instruction.

The key to the computer is its large data storage and data handling capacity, as well as its electronic speed. The computer processes its programmed commands in terms of microseconds (millionths of a second), while students work in terms of seconds. Thus, although a number of students are simultaneously using the computer, each feels he alone has the machine's attention.

The student "converses" with the computer and becomes an active participant in the learning process. The computer acts like a private tutor, giving immediate reinforcement in the case of correct answers and appropriate feedback in the case of errors. Students are automatically directed to more challenging material or remedial instruction, on the basis of their performance.

By reference to each student's past performance record, the computer knows which particular subject matter to select for any particular student. In this way, every student receives up to 10 times as much individual attention during drill periods as the average classroom situation permits.

Clerical duties involved in teaching, such as correcting and grading of daily work, are also taken over by the computer, freeing the teacher for more important professional tasks. These include guiding the class through the inquiry-and-discovery process, and working with students who require special attention. An analysis of each student's progress and class summaries are provided daily, weekly and monthly for the teacher, who can use this information to spot problem areas.

In addition to offering individualized instruction, CBI provides a research tool for investigators of the learning process itself. The rapid growth of information in this century has focused the attention of many educational researchers on development of more efficient methods of presentation. CBI aids in research by compiling and reporting statistics used in analysis of learning.

Since CBI materials are stored on a memory device, at the computer installation, they can be modified more readily and economically than can information in textbook form. Thus, subject matter experts can keep pace with current developments in their fields, and courses need not become out of date.