

What Teaching Machines Can Do for Your Child



By
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A GROUP OF SENIORS in a mathematics class in a Roanoke (Va.) high school sat hunched over the windows of a boxlike contraption that posed questions much as a teacher would.

After writing the answer, each student twirled a knob which revealed the accuracy of his work. In one semester, using what have been popularly called "teaching machines," these 21 seniors have completed axiomatic algebra, solid geometry, and some calculus.

Surprisingly, this was not a class of geniuses but rather a normal group of intelligent youngsters studying math. The teaching machines were part of a special program in Roanoke to determine the effectiveness of teaching machines or "programmed instruction," as it is known to educators. This, the first real revolution in teaching techniques since the McGuffey readers, is being appraised in hundreds of schools with results that vary from good to startling.

Of the basic types of equipment used for "programmed instruction," perhaps the most inexpensive is the ingenious "electronic classroom"—originally the brainchild of a Connecticut high-school French teacher, Mrs. Rita Barrows. At a party in Westport, Conn., Mrs. Barrows met an official of Dictaphone Corp. and wondered aloud whether a standard dictating machine could be adapted to automated classroom learning.

"Would you," she asked the official, "care to experiment?" The result is a special classroom in Westport's Long Lots Junior High School with three Dictaphone machines hooked up by earphone to 30 desks. With the aid of a channel selector at each desk, the student can bring in any one of three lessons prerecorded on plastic belts. The system allows students to work at their own best learning rate and frees the teacher for individual tutoring.

The so-called "teaching machines" are usually no more than a box about the size of a portable record player. The prerecorded lesson, on paper or microfilm, is loaded into the machine, which brings each "step" of the lesson into view at the turn of a knob. The student then writes in the answer to the question in the frame and pulls a lever to uncover the correct answer so he can compare it with his own.

The basis of the teaching-machine program is the presentation of the material in small, easily grasped bits of information. The first steps are



Students in an automated language laboratory in Scarsdale, N. Y. (above), learn with tapes and headset. Teacher (below) adjusts master console.



*They enable a student
to learn faster and better—
but they will never replace
good, live teachers*

simple and become difficult so gradually that the student is barely aware of it.

What are the values gained by the timesaving automated classrooms? First, teachers will be able to pay more attention to the broader aims of education than the mere repetition of facts and dates. Second, enjoying the stimulus of a constant check of his progress and the pleasure of being rewarded promptly when his work is correct, the pupil has a feeling of accomplishment.

Some educators feel that the very newness of

the method accounts for a good deal of its effectiveness. They maintain that the novelty of using a machine catches the student's interest and helps hold him to his work. The real value of these procedures will not be known, then, until the students have been using machines or other types of programmed instruction throughout most of their educational careers. There is evidence, however, that the presentation of material in programmed form is highly effective.

Teaching machines and programmed instruction are not, of course, the final word in education. They have no magical properties that will suddenly implant in the student's mind the knowledge that exists in a specific course. Robert E. Silverman, chairman of New York University's psychology department, adds:

"It should be pointed out that programmed teaching will help your child most in those courses whose goals are the most clear and obvious. Also, its full potential is tied directly to that indispensable human element, the teacher who directs the use of the machine. Let there be no mistake: no system of electronics ever can replace the beneficial influence that an inspired instructor can have on your child."

THE CONTINUING NEED for this human touch was illustrated by the girl who was asked her opinion of the machines used in her school. "I like the machines, all right," she said. "But sometimes I'm uneasy because I have the feeling that I don't know *why* I answered the problems right." A live teacher can make sure that she really grasps the principles involved.

One firm producing programmed instructional materials considers the need for effective classroom teaching as basic to its whole approach. Accelerated Instruction Methods Corp. of Chicago provides a comprehensive teacher's manual for each of its programmed books in general science, so that active student participation can be extended to experiment periods and discussions led by the teacher. The joining of these two procedures adds to the effectiveness of both, and it is probable that this teacher-directed programmed instruction will be the most important result of the entire development.

Whatever the exact form of "hardware" used, rest assured that with proper supervision by live teachers, wonderfully free from much of the old routines, America's youth will be more truly educated than ever before. With programmed instruction, your child will learn more—and love it!

COVER:

Are dolls getting bigger or little girls smaller? L. Willinger caught this charming juxtaposition, which causes momentary doubt as to who is who. Patterns for a doll's knit wardrobe are found on p. 10.

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