Teaching Machines In Agriculture?

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Will automation replace teachers? Wtihin the past decade a new teaching tool has been introduced. It is called programmed learning. The subject matter is frequently presented to the student by a machine. From this application comes the term teaching machine. The machine is not essential, however, and the subject matter is often presented in a form similar to the conventional textbook. Teaching machines and programmed learning have been received with great enthusiasm. Leonard (1) says that the technique may sharply change U .S. school _ _ will release _ drudgery of tion and gr _ teaching (4

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The auth so that he saying. He professional material. However, the suitability of his book for conveying information to the important person, the student, is never given any comprehensive evaluation. A well prepared program is thoroughly tested on this point.

This advantage alone may be enough to justify the use of programs in teaching. Other advantages are the reduction in the number of teacher - administered tests needed, and the fact that students may proceed at their own rate of speed through the program.

The technique as originally conceived had five steps. They were:

1. Specify exactly the learning that is desired.
2. Arrange this subject matter in small sequential steps. This is called programing.
3. Have the learner respond to to each step.
4. Inform the student immediately whether or not his response is correct.
5. Evaluate the program by noting the wrong responses given by the student and correct the program so the student will give correct response.

Some researchers have presented evidence that all of these steps may not be necessary or desirable in every situation (2).

Out of the research and study three different kinds of programs have emerged. They are the linear program, the branching program and the adjunct program. The first two are used to transfer knowledge to the student with no additional instruction. The adjunct program is used along with other teaching methods such as lectures and textbooks (3).

One disadvantage of the new tool is that program preparation is very time consuming and therefore expensive. One author reported that 60 hours of work were needed to program the material that was normally presented in a one-hour lecture.

Briggs (3) states that this new tool monitors, informs, and motivates the student. The subject matter is presented more carefully. He believes that these factors alone are enough to make programmed learning a permanent part of the education milieu regardless of theoretical controversies. Programmed learning does not appear to be suited to courses such as literature and philosophy. Sciences and materials requiring memory work such as spelling are suited to programming.

Use in College Agriculture

There are no programs available for teaching agriculture on the college level. In fact, there are only a few available for any subject on a college level. Among those available are ones on statistics, algebra, and English-grammar.

If this tool is to be available to teachers of agriculture, it appears that it must be developed by an organization because the work required is probably more than an individual teacher can do in addition to his regular duties.

The first step in the development of such a program would be to choose a subject that is taught in most colleges of agriculture. The exact subject mater to be taught would be decided upon. College teachers, as subject matter experts, should then have the help of an experienced programmer in actual program production. This is a large project. It may be too large for existing organizations. Commercial publishers have people working on programs in subject matter areas having a large market potential. The market potential in agriculture is relatively small. Because of this, commercial producers of programs are not likely to develop programs for the field.

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