A SCANNING PRINCIPLE FOR AUTO-INSTRUCTIONAL DEVICES¹

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The teaching machine as developed at Harvard University (Skinner, 1958) involves movement of instructional material past some type of window so that the student sees only a specific portion of the material at any given time. In order for the machine to handle the lesson material, the material is put onto a disk, a long roll, or a fan-fold. An alternative design is for the instructional material to remain stationary but for the student to move a viewing window so that he scans the lesson as the window moves down the page.

As early as 1958, John Blyth's students at Hamilton College used a piece of paper or cardboard to cover the program (especially the program answer to an item prior to the student's construction of his response). In the fall of 1959, Dyna-Slide Company, Chicago, Illinois, in cooperation with the Earlham College Student Self-Instruction Project, constructed a device (the "Program Scanner") whose central feature was a flexible, endless belt on rollers. The belt had a wide aperture to permit insertion of the program (a stack of sheets) and a scanning window with an opening for the student to write his answer on the program.

Since 1959, several variations and simplifications in the application of the basic principle have been worked out. Figure 1 shows one of these, the Dyna-Slide "Slide-a-mask." In using the "Slide-a-mask," the student hooks its guide channel over the right-hand side of the scanning book and moves the mask down the page with his left hand as he progresses.

Because of their minimal cost, these devices are more appropriately compared with the programmed book as a method of program presentation than with mechanical teaching machines. Scanning has these advantages over programmed books: (a) The constant page turning necessary with the programmed book is eliminated; (b) When checking, the student sees the question and the answer at the same time; (c) Items need not be standardized as to question and answer length, so that the programmer has greater flexibility and space can be saved in reproduction; (d) Indexing of the scanning book is possible and convenient. An incidental advantage is that preparation of material

for mimeographing or printing is much simpler and easier to keep track of for a scanning book than it is for a programmed book.

With the Manila folder card rack (Alexander & Gilpin, 1961) for the writing and refinement of programs, and simple, convenient scanning methods for mass student self-instruction, all the "devices" necessary for ordinary work with Skinnerian and similar

Fig. 1. The Dyna-Slide "Slide-a-mask."

programs are available. Any teacher or researcher who wishes to work at developing and using teaching-machine materials may now do so with methods that are convenient and effective, yet require a minimum of resources.

REFERENCES

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