THE DEVELOPMENT OF PROGRAMED INSTRUCTION

as

A CLASSROOM TECHNIQUE

AN ABSTRACT OF

A THESIS

PRESENTED TO THE GRADUATE FACULTY

OF WESTERN CONNECTICUT STATE COLLEGE

IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE

MASTER OF SCIENCE

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June 1968

The purpose of this study is to investigate the development of programed instruction as a technique for teaching in the classroom. The term "classroom" refers to all individuals gathered together to learn a special skill or concept, not necessarily categorized by space, age, or grade.

The early attempts to develop teaching machines and other early developments are discussed. The idea of the self-instructional text book goes back one hundred years. However, it was not until the late 1950's when B. F. Skinner of Harvard University utilized the reinforcement learning and operant conditioning theories of learning to develop a linear program teaching machine, that wide-spread interest by educators became evident. Then, in 1958 a symposium was held at the University of Pennsylvania which was sponsored by the Air Force. Here educational researchers, experimental psychologists, Air Force personnel and other interested persons convened to exchange ideas on automatic teaching.

Papers presented at the symposium illustrated how reinforcement learning theories were utilized in programed instruction. It further emphasized the complexity of programing verbal knowledge. Studies using techniques of linear, branching, and computer programing were discussed. These papers posed some of the theoretical, empirical, and

practical problems inherent in programed instruction.

Technological advances of the Second Industrial Revolution show how programed instruction was a direct outgrowth of these developments in society and could be a partial solution to some of the problems resulting from it.

Programed instruction is a unique teaching tool which is not an audio-visual aid. It is an attempt to complete the educational model by providing the stimulus, checking the response, and then providing reinforcement to the learner.

This requires that programs be carefully constructed. Objectives have to be specified and behaviors defined. Furthermore, the subject matter must be analyzed and then presented in small steps. Once the programer has chosen the subject matter, he must consider the assumptions which the learner brings to the program. Then he chooses a model or paradigm for constructing the program which best satisfies the needs of the subject matter. Between linear and full branching techniques of programing, there are many modifications and unique adaptations possible. All programs have to be tested and carefully evaluated. Pre-task analysis, task analysis and behavioral analysis are necessary before programs of quality can be developed.

Research indicates that programed instruction can teach; in most cases at least as effectively, in some cases more efficiently than by traditional methods. Studies have been conducted at pre-school, elementary, secondary and

college levels, as well as in industry and the military.

Teachers could use programed instruction to individualize teaching in the classroom. If teachers, in addition, construct programs they will be more aware of the complexity of the learning process. By the use of programs, teachers can be freed for more creative work. Even if programed instruction is used only as supplementary material, it can be a valuable classroom technique.