

ensuing lack of both interest and motivation.

The use of the teaching machine in the school requires considerations not dissimilar to those of other presently used equipment - scheduling, storage, maintenance, replacement, and training for proper usage.

Why Should Schools Use PI?

One might ask the same question about the use of films, slides, television, and many other accepted instructional tools. One obvious answer is that "it works." Further, it offers the teacher more time for individual help and generally improves the quality of human instruction. Above all, it helps him achieve the learning objectives he has set forth for his students. There is really only one way he can discover this—by using it. It is not uncommon to hear tenured teachers who have been exposed to programmed instruction say that if nothing more occurred from their experience, they learned how they could better organize and present conventional material.

School registrations are increasing out of proportion to graduating teachers. With increased class sizes, it is impossible for teachers to provide an adequate and sustained level of personal atten-

tion to each student. The use of programmed instruction may well give this time. Special purposes such as instruction for home-bound students, make-up work for long absence, review for retention, work with remedial individuals or groups, additional material for gifted students, indeed, for adaption to the learner's individual needs are reasons enough for school administrators to use programmed instruction.

Wrap-Up

As teaching machines become more sophisticated, the controversy with the programmed book will fade and die of natural causes. A book is no substitute for teaching a machine with audio, or with the capacity for teaching a motor skill. In comparing the less-sophisticated teaching machine with the programmed book, the contention is that to overlook the control of attention, the control of presentation, the prevention of cheating and other advantages mentioned for the teaching machine, is to settle for a less effective version of programmed instruction.

And a final word to teachers and trainers who resist programmed instruction—by book or machine—you can't afford not to use some of it

New Programs Developed

Dr. H. O. Holt, Director of Training Research, American Telephone and Telegraph Company, New York City, described two courses which are beginning to be used in associated telephone companies of the Bell System and reported the results of testing at the September meeting of the New York Chapter.

One course is for training telephone operators, prepared by A.I.R., which is 50 per cent programmed instruction; the other 50 per cent includes lecture, simulated job practice, and other techniques designed for most effective training.

When this approach was compared with conventional telephone operator training in ten telephone company offices, the results were at least as good or better than conventional training; time for training was significantly less; and instructor time was greatly reduced. Further information may be obtained from Dr. Holt.

The other course is Basic Electricity, developed for Bell Telephone Laboratories research, which consists entirely of programmed instruction. When the results of this program were compared with the results of classroom instruction, proficiency in the programmed instruction group was significantly higher, but

training time was not significantly different. Details of this research are reported in a book to be published by Educational Methods, Inc., Chicago, Ill.

Readers may obtain a gift copy of *Evolutions Of A Systems Course In Programming* by Leonard C. Silvern by writing Education and Training Consultants, 979 Teakwood Road, Los Angeles, Cal. 90049. The Fundamentals course development is covered in minute detail.

Coronet Instructional Films Program, *Our Solar System*, written by Learning, Inc., brings together the key facts of our solar system and clarifies their relationships. Students who complete the program correctly use such terms as orbit, ellipse, precession, and solar prominence. They correctly list the nine planets in their order from the sun and define the terms meteor, comet, meteorite, and asteroid. Cornet, Chicago 1, Ill.

Roto-Vue Booklets, published by Model Publishing and School Supply Co., 1604 Hodiament Ave., St. Louis 12, Mo., cover the fundamental principles of measurement—a necessity for young scientists-to-be. The four booklets in the series are Linear Metric Measurement, Metric Measurement of Area, Metric Measurement of Volume and Mass, and Measurement of Time and Temperature.

Select programs for
your classrooms from
this TMI-Grolier* List—
one of the largest and
most inclusive offered
by any publisher.

MODERN ENGLISH (100) SERIES

Spelling Rules	\$12.50
Punctuation	7.50

ELEMENTARY ARITHMETIC (200) SERIES

Introduction to Numbers	7.50
Time Telling	7.50
Addition & Subtraction Facts	10.00
Fractions: Basic Concepts	10.00
Multiplication & Division Facts	10.00
Decimal Numbers	12.50

INTERMEDIATE MATHEMATICS (300) SERIES

Introduction to Modern Mathematics	7.50
Modern Mathematics: Number Systems	10.00

GENERAL SCIENCE (400) SERIES

Work & Machines	7.50
Biology & Chemistry	12.50
Sound, Light, Electricity & Communications	12.50
Measurement, Meteorology & Astronomy	12.50

SECONDARY MATHEMATICS (500) SERIES

Fundamentals of Algebra I	10.00
Fundamentals of Algebra II	15.00
Algebra Refresher	15.00

MODERN LANGUAGE (600) SERIES

Basic German Reading (includes 2 records) ..	15.00
Basic Russian Reading	10.00
Basic Spanish Reading	16.50
(includes two 7" 33 1/3 rpm records)	
Modern Hebrew: Basic Reading	15.00

ADVANCED MATHEMATICS (700) SERIES

Introductory Statistics	10.00
Descriptive Statistics	6.00
Statistical Inference	6.00

SECONDARY SCIENCE (800) SERIES

Fundamentals of Electricity, D.C.	10.00
Fundamentals of Human Physiology	10.00
Chemistry: Matter & Chemical Change	15.00

GENERAL (900) SERIES

Fundamentals of Music	7.50
Newspeak, an "ABC" Shorthand	12.50
(includes 7" record)	

SPANISH TRANSLATIONS

(These programs are identical in content with the English Language versions.)

Multiplication & Division Facts	10.00
Fundamentals of Algebra	10.00
Fundamentals of Music	7.50
Fundamentals of Human Physiology	10.00
Introduction to Numbers	7.50
Time Telling	7.50

MIN/MAX TEACHING MACHINE: \$25.00

Educational discount—20%. Quantity discount of 33 1/3% (over 25 of any one program). Add \$1 to list price of Teaching Machine format above for textbook format to use without teaching machine.

*An affiliation of Grolier Incorporated and Teaching Machines, Inc., pioneers in the development of Programmed Learning.

