teachers. (Representation at the seminar had been sought from each local organization of the Association and some locals even assumed the costs of the teacher or teachers representing them.) A survey has confirmed that in this second objective the seminar was more than moderately successful.

THE EXPERIMENTAL PROGRAM IN GRADE VII, by R. Plaxton

Editor's Note - Mr. Plaxton addressed one of the sessions of the Mathematics Council's annual conference, held in Edmonton on July 11, 12 and 13, 1962, about experiments with the new mathematics program. This item summarizes his talk.

The term "modern" does not mean that mathematics as we know it will be other than the backbone of the mathematic course in Grade VII for many years to come.

In 1960, a subcommittee was formed to study what changes should be made in the junior and senior high school mathematics programs in order to keep pace with the volume of new material available. Two committees were formed; one for the senior high and one for the junior high. After study of the junior high school text the sub-committee reported evidence of: (a) unsatisfactory relation of work with that of previous grades (b) repetitiveness (c) too great a stress on application, and (d) lack of "new" approaches and "new" concepts.

Choice by the committee of an experimental text was Seeing Through Mathematics because of its obvious content of new materials. Examination of differences between this program material and previous material shows emphasis on sets and subsets. Mathematicians believe this topic is one of the most unifying of all ideas in mathematics.

The "point set" approach is used in geometry: space being an infinite set of points - like a darkened room full of dust particles; a line would be a beam of light passing through it. A plane is a beam of light allowed through a door left slightly ajar. Closed curves are

a set of points dividing a plane into two regions. Class discussions
on definitions arising out of these conceptions prompt discussions of
great interest and value. Ideas of greater and lesser infinites arise.
Other challenging ideas are posed and discussed. As to graphing, the
concept of ordered pairs provides a unique and interesting approach.

Teacher questionnaires returned from 30 experimental classrooms led
to the following conclusions:

1. The course took longer to teach than had been anticipated.
2. Classes showed more interest in this course than in usual ones.
3. There was a negative reaction to the geometry section which
   students found hard.
4. Concern was expressed by one-third of the respondents about
   difficulties encountered by slower students.
5. It was felt that additional training would have aided teachers
   in doing a better job.

In the coming year (1962-63) further experimentation will be carried
out. Follow-up on the <u>Seeing Through Mathematics</u> series is being
carried out in nine classrooms in 1962-63. Action research is being
conducted on several other texts.

PROGRAMMED LEARNING, by J. A. McDonald

   <u>Editor's Note</u> - Mr. McDonald, past president of the Association,
   spoke to the teachers at the Mathematics Council conference last
   summer on the topic of programmed instruction. A short summary
   of his remarks follows.

Teaching machines were conceived as early as 1873 for the purpose of
teaching "logic". A tutoring machine employing defined procedures
appeared in 1915 but was dropped as a research project in the thirties.
Work was resumed on teaching machines in 1952 by Dr. B. F. Skinner.
Development of the "reinforcement technique" on birds and animals
formed the basis of Skinner's studies. N. A. Crowder had taught
"logical trouble shooting" to American air force personnel. Dr. L. M.