

EVALUATION OF EXPLORING MODERN MATHEMATICS, by H.L. Larson

Editors' Note: Mr. Larson is Superintendent of Schools at Athabasca. He is very interested in the introduction of new mathematics programs.

In evaluating the Exploring Modern Mathematics texts for use in Alberta schools, we might note the following.

1. Universality. By this we mean that the materials and methods are complementary to the other commercial texts now appearing on the market. Whenever a text is premised upon the research results of any of the great studies such as U.M.Ma.P., or S.M.S.G. we can be reasonably assured that it is structurally sound, insofar as research to date is able to take us. The development of each concept in EMM permits teacher or student to make comparisons with many other materials on the market. This aids in what is known as the spiral development of concept-building.
2. Language. The teacher of traditional mathematics finds much of the rigorous language and symbolism of modern mathematics rather distasteful, due probably to the fact that he must literally step down the ladder of understanding to acquire facility with a terminology beneath his intuitive level. The EMM texts are very gentle in their approach to rigour.
3. Teacher Individuality. All good experienced teachers have a considerable storehouse of techniques, especially in drill and review work. In using EMM, teachers will still be able to use many of these with only moderate changes in emphasis. An easier transition from the past to the present is bound to reflect in attitudes of both teachers and students.
4. Supplementary Reading. Provision for individual student differences through mathematical literature is a keystone for success in modern mathematics. EMM builds its concepts in such a way that the student feels certain that other rationales are worth examining. EMM has numerous historical and biographical sketches which stimulate students.

5. Problem Solving. At the Grade VII level, EMM is less concerned with problem solving, choosing instead to stress the basic understandings which are required later. At the Grade VIII and IX levels more stress is given to applied problems.

Traditionally, problem solving has been a means to an end, that end being competence in computation to a large extent. The application of problems, per se, is however largely wasted on Grade VII students. The efficiency of learning computation or mathematics principles via problem solving is questionable. The Grade IX level of EMM is delightfully full of applied problems to cheer the teacher who leans toward the pragmatic point of view.

6. Structure. With current interest in structural approaches to learning being so high, we must view all modern texts in the light of this development. It would appear that as a result of the research in the decade of the fifties, in mathematics instruction, we have come a long way toward achieving a structural approach. What is yet to be discovered is where, in the classroom, we might best develop certain topics. Bruner's summary of the work done in structuring raises this question of sequence and grade level. Piaget on the other hand has given some promise of a type of educational research that will give us some answers as to what extent major concepts should be developed at certain periods in student growth. The more flexible a text is, the longer it will be useful. EMM qualifies very well in this respect.