

Editor's Note: We are presently in the process of high school course revision which should be completed at the Grade XII level in from three to five years. Some light is shed on recent trends by a condensation of Dr. Woodby's report which covers a widely obtained body of information from high schools in twenty states.

1. The individual teacher is the most important factor in the development of a strong mathematics program. National Science Foundation Institutes have been influential in preparing teachers already in service to develop and teach the emerging twelfth-grade courses. Even so, inadequately prepared mathematics teachers are still an obstacle to the development of fourth and fifth-year courses.

2. There is lack of agreement on the mathematics that should be taught in twelfth-grade courses for college-bound students. Many different courses are being taught, and still others are in the planning stage. No particular program seems to be the most appropriate one at the present time. Much more content has been proposed than can be taught in any given program.

3. Acceleration and enrichment have generally accompanied the development of strong mathematics programs. Larger schools can be extremely selective in grouping talented students for honors courses. These gifted students are capable of learning more advanced mathematics than is usually offered in high school. Even very small schools are attempting to offer ambitious programs, in which as many as one-fourth of all the students are accelerated. In some schools acceleration appears to be overdone. Questions of "why accelerate?" and "how much acceleration?" have not been adequately studied.

4. Concern for calculus prevails. Most of the advanced courses are either calculus and analytic geometry, or algebra and analysis courses intended to prepare students for calculus. Although many high schools are teaching calculus courses of good quality, there is a trend toward the teaching of nonrigorous courses in calculus that emphasize only the mechanics of differentiation and integration. In effect, these are warm-up courses to give students a "running start" in the beginning course in college.

5. There is little acceptance of a course in probability and statistics as the fourth or fifth-year mathematics offering in the college preparatory program. There is even less acceptance of courses in linear algebra, matrices, and computer mathematics.

This situation is probably due to the lack of knowledge of these subjects by the great majority of high school teachers.

6. Analytic geometry as a separate course has achieved only slight popularity.

7. It has been demonstrated that college-level calculus courses can be successfully taught at the high school level provided the following conditions are met: (a) That there are enough capable students who, at the beginning of the twelfth grade, are prepared to study calculus. (b) That the teacher is adequately prepared to teach calculus.

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