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MODERN MATHEMATICS

AND

SKILL ABILITY

A THESIS

PRESENTED TO THE GRADUATE FACULTY
OF WESTERN CONNECTICUT STATE COLLEGE

by


Harry Bates

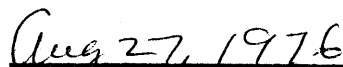
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CHAPTER I

INTRODUCTION TO THE PROBLEM

After teaching both junior and senior high school mathematics in a western Connecticut community for five years, it has been observed that severe deficiencies exist in the area of basic arithmetic skills. Several teachers have learned that these weaknesses are severe enough to warrant more attention in the classroom since they prohibit many students from performing skills needed for everyday living. While talking to area business managers or employers you often hear statements such as: "These kids can't even make change correctly or use rulers efficiently." Also, during a recent graduate course in Current Trends in Secondary Mathematics, it was evident that the major concern of many teachers was a serious decline in the skill ability of their students.

Observing these situations, it seemed logical to discover whether or not this problem was isolated to one community or if other area towns were experiencing the same problem. After discussions with other area teachers and research into the problem, it was discovered that the problem is indeed area wide in scope. Another trend in area school systems is a movement to more and more emphasis

on practical mathematics courses as well as skill performance. Along another line, it was observed that a general feeling of many teachers is that modern mathematics is to blame for the problems with the students' skill abilities. Reviewing these concerns, it appeared that there exists a need for research into the connection between the current modern mathematics programs and a decline in skill ability. The following hypothesis was formulated in order to investigate the problem presented.

The Problem

Has modern mathematics, although accomplishing many of its original goals, led to a serious decline in the ability of students to perform basic arithmetic skills?

Hypothesis

Students who proceeded through a traditional mathematics curriculum will perform more efficiently on the Iowa Test of Basic Skills than the students who have proceeded through a modern mathematics curriculum.

Null Hypothesis

There will be no significant difference in the scores on the Iowa Test of Basic Skills of students who proceeded through a traditional mathematics program compared to those who proceeded through a modern mathematics curriculum.

Definition of Terms

In this study, basic arithmetic skills are considered to be the performance of the operations of whole numbers, fractions, decimals, and percents.

For the purpose of this study, the modern mathematics curriculum is the curriculum changes produced largely by the School Mathematics Study Group and implemented in many school systems in the early 1960's.

Whenever discussed in this study, practical mathematics courses are courses which de-emphasize the theory of mathematics and train the students to apply mathematics to everyday living.

A traditional mathematics program, whenever referred to in this study, is the so called "old math" used in most school systems prior to the early 1960's.