A SURVEY OF THE EVOLUTION OF THE TEACHING OF SCIENCE IN THE PUBLIC SCHOOLS WITH EMPHASIS UPON INTEREST AND MOTIVATION

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The purpose of this paper is to chronicle investigations which have been conducted and are being conducted with the aim of understanding the relationships between student's interest in the study of science and student's achievement in the study of science presented against the background of the period in the history of science education in the United States in which they occurred.

The first schools which were established in the United States put great stress on classical studies. Some scientific subjects were included in the school curriculum during the eighteenth century, but it was not until late in the nineteenth century that the teaching of science was given its modern place in the curriculum. As the science curriculum was developed and enriched during the twentieth century, the emphasis was placed on the psychology of learning in science teaching.

Research studies of student interest in science were begun in the twentieth century. The purpose of most of these early studies was to help determine curriculum content. The first attempts to define and evaluate student interest were made during the period of the 1940's.

Following the close of World War II there was an acceleration in the growth of science and technology which caused speculation about the nature of education in the sciences. The tremendous increase in the number of students attending high school and the greater demand for higher education by high school graduates, created many problems for educators. The two major problems which were identified during this period

were the identification and encouragement of the "gifted" student and the shortage of qualified teachers of science. Research studies defined student interest in terms of the "gifted" student and attempts were made to identify and classify the characteristics of these students. The results of studies of well qualified teachers caused research workers to conclude that there is a correlation between the student's interest and achievement in the study of science and the attitudes of the teacher.

In the furor after Sputnik, studies were made to identify the characteristics of successful scientists, so that these characteristics might be used to identify future scientists. Attention was given to the evaluation of tests of interest and the development of new tests. Studies indicated that science interests develop early and science was begun to be looked upon as essential in the education of all young people.

The advancement of scientific knowledge, the new developments in all branches of learning, and an appraisal of the inadequacies of present science courses, made the revision of the curricula of the sciences imperative. Study commissions composed of educators and scientists, with support from private and government funds, undertook studies of the curriculum of Physics, Chemistry and Biology. The new courses and new methods of science teaching which were developed will result in a massive overhaul in the curricula of the sciences.

Research studies have resulted in new understandings of student interest and new methods of evaluation. Some of the areas of research which are currently being conducted and are projected for the future are--the measurement of creative science ability, the analysis of multivariate factors in the process of the development of scientists, the role of girls in science study, the early identification of science interest, and the new methods of teaching and teacher preparation. The future of research in the area of student interest in the study of science is filled with bright promise.