

**DECLINES IN STUDENT ACHIEVEMENT IN SCIENCE--
IMPLICATIONS FOR PUBLIC EDUCATION**

by

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ABSTRACT

During the 1960s and 1970s, major innovative science curricula were introduced into public schools in the United States, and federal funds were used to improve the quality of science teachers. Nevertheless, student achievement in science has generally declined since 1963. This research focused on changes in four of the key variables related to science achievement--teachers, students, curricula, and school goals. The research examined (a) meta-analyses of the effectiveness of the innovative science curricula on student achievement, (b) research on changes in teacher and student characteristics during the last 30 years, (c) educational literature on changes in the goals of public education during this same period, and (d) changes in student achievement.

The results of this research suggest that the recent declines in science achievement are related to changes in student motivation, school goals, and school autonomy. The data indicate that contrary to the claims of some recent education commission reports, teachers and curricula have improved steadily over the last three decades. The conclusions developed from this research suggest that a number of the current educational reforms such as teacher competency testing, merit pay, curricular reform, student competency testing, and year-round schools should have little positive effect on student achievement. The research also suggests that parental

involvement in education could have a negative influence on science achievement. The findings do suggest that schools of choice, corporate educational partnerships, and teacher empowerment could significantly improve student science achievement.

To my wife Rosemary for her love and support

Ubi coniciebamur pollicitus eram semper flores--

Ver jam appetet

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To Dr. Nannette McLain

An anonymous Soviet poet wrote:

**While yet there is time
Look out upon the world; devour it with your eyes
And, if your spirit demands more
add at least one stone to the edifice being built
So that when you are gone everyone will know
that where you once were a great emptiness now yawns.**

Thank you for adding this small stone. Without your unerring guidance and untiring patience, this dissertation would still be an intention. And thank you for your wonderful sense of humor. It helped to make this effort fun.

