

# Survey Finds Students Uninformed about Need for Mathematics

A recent survey has found that many high school students are making decisions about whether to continue their studies of mathematics with little or no guidance from parents, teachers, or school counselors. Although students express interest in study or careers in areas that require a good deal of mathematics, many of them say they will stop studying the subject as soon as they can. And they are often unaware of how choices about mathematical study made at the high school stage can affect their career prospects.

The National Action Council for Minorities in Engineering asked Louis Harris and Associates to conduct the survey in an effort to understand the basis on which some students continue studying mathematics while others opt out. Interviews were done in classrooms with 2,500 public school students in grades 5 through 11, and one thousand telephone interviews were held with parents. The survey was conducted in advance of NACME's public service advertising campaign, "Math Is Power", which aims to reach 23 million American children and their parents.

About half of the students in the survey said they will stop taking mathematics classes as soon as they can. Latino, African-American, and American Indian students were more likely to say they would drop mathematics than were white and Asian-American students. Four in five students who have had options in mathematics coursework said they made decisions by themselves about which courses to take, even though nearly all said that advice from parents and teachers is important to them when deciding what to study in school. Only a third of the stu-

dents said that their mathematics teachers advised them on which mathematics classes to take, and a similar proportion said their parents or guardians advised them.

Forty percent of the students said that some of their peers do not continue in studies in mathematics and science because of discouragement by teachers and guidance counselors. This perception was stronger among males than females: 48% of the boys in the survey believed discouragement was a factor in contrast to only 35% of the girls. Over half of the non-minority students said no one discouraged them, as opposed to only 38% of African-Americans and 27% of American Indians. Few parents counted discouragement as a factor: 93% of them said that no one had discouraged their children in mathematics and science.

In the upper grades, only about half of nonminority and about one-third of minority students understood that without advanced mathematics courses they would not be able to get certain jobs. The parents in the study seemed to understand better than their children that, without certain skills, their children's career choices will be limited. However, not all parents grasped the importance of prerequisites for continued study in mathematics: 53% of them believe that students can take any mathematics

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class they want at any time they want. Only 16% of the students held this misconception. However, the survey also found that many students are unaware of the prerequisites necessary for college-level mathematics courses. Less than half of the ninth to eleventh graders planned to take advanced mathematics classes in high school, but nearly two-thirds said they are interested in college-level mathematics.

Thirty-five percent of the students who planned to stop taking mathematics as soon as possible expressed interest in studying scientific subjects in college. This paradox was especially strong among minority students. For example, close to two-thirds of African-American students planned to drop mathematics as soon as they could, but more than three-quarters of them are interested in college-level mathematics. In addition, close to 70% of minority high school students said that careers in science, engineering, and computer programming would be interesting.

The NACME is a nonprofit corporation established twenty-one years ago to lead a national ef-

fort to increase the number of African-Americans, Latinos, and American Indians in the engineering profession. It is the nation's largest privately funded source of scholarships for minority engineering students. NACME's "Math Is Power" campaign brings together the efforts of a number of organizations, including IBM Corporation, the Annenberg/CPB Math and Science Project, the National Science Foundation, and the Advertising Council. The campaign, begun in July and scheduled to run for three years, will use television and radio spots, newspaper and magazine advertisements, and other means to reach young people all over the country. The campaign aims to encourage students ages eight to thirteen to take academic-track mathematics and science courses in high school. To receive student posters and parent brochures for "Math Is Power," call 1-800-97NACME. For information on the campaign, call 212-279-2626, extension 232.

—Allyn Jackson

