



BAYER FACTS OF SCIENCE EDUCATION VI:

Americans' Views on Science, Technology,
Education and the Future

EXECUTIVE SUMMARY



Making **Science**
Make **Sense**[®]
PRESENTED BY BAYER

Prepared for:
**Bayer Corporation and
National Science Foundation**

Conducted by:
The Gallup Organization

2000

Introduction and Methodology

The following report is based on the findings of a survey among the adult public that examines Americans' attitudes toward science, technology, science education and the future. Specifically it looks at how Americans view the country's present leadership role in science and technology and their attitudes toward maintaining that leadership position. The study also probes the connection between the U.S.'s economic success, its scientific and technological skill, and the quality of its pre-college science education.

The Bayer Facts of Science Education VI, a Bayer Corporation/National Science Foundation survey, was conducted by The Gallup Organization, Inc. and commissioned by Bayer Corporation.

The survey results are based on telephone interviews with a national sample of 1,003 adult men and women, age 18 and over. The study was conducted during the period of May 15 through June 11, 2000. The findings are representative of all adults age 18 and over residing in U.S. households with telephones. For results based on samples of this size, one can say with 95% confidence that the error attributable to sampling and other random effects could be plus or minus three percentage points. In addition to sampling error, question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

Key Survey Findings

Americans' Attitudes toward Scientific and Technological Advances

- Two-thirds (67%) of all adults surveyed say they are interested in news stories about scientific discoveries, including one in every four (26%) who report they are “very interested.”
- Most (83%) adults report taking pride in America’s accomplishment as a world leader in science and technology, including 46% who say they take “a great deal” of pride.
- The vast majority (93%) of adults believe that science and technology has been important in establishing the United States’ influence in the world – 61% believe this has been very important. Women are more likely than their male counterparts to say that science and technology has been very important in establishing America’s influence in the world (66% -vs- 56%).
- Approximately eight in ten (79%) adults believe that the speed of new scientific discoveries and their applications in the next one hundred years will be greater than it has been in the past one hundred years. Further, a similar proportion (78%) think the impact of these scientific discoveries on the way we live and work will be greater than it has been in the past century.
- Most (93%) Americans surveyed hold the opinion that it is important for the United States to maintain its current global leadership in science and technology, (65% saying this is very important). Men are more likely than women to believe this is very important (71% -vs- 60%). The percentage believing this is very important ranges from 56% among those under age 35 to 74% among adults age 65 and over. There was no significant variation in responses by region of the country.
- More than nine in ten (93%) respondents felt that science and technology has been important in contributing to America’s economic success (60% very important and 33% important). This opinion was consistent across all four regions of the country. Those working in a field of science, engineering, medicine, research or technology were the most likely group to say this has been very important to America’s economic success (67% -vs- 47% among those who do not work in this field).
- Nine in every ten (89%) adults believe that science and technology has changed life over the last one hundred years for the better. This belief is strongest among adults age 50-64 where 94% believe the impact has been a positive one.
- Nine in ten (90%) U.S. adults agree that America’s success in the global economy will depend upon its having a world-class workforce with the skills necessary to meet the challenges of an ever-changing workplace. College-educated adults, those between the ages of 50-64, and adults residing in the Midwest are the most likely demographic groups to strongly agree with this statement.

Issues Important for Presidential Candidates to Address

- Everyone was read a list of five current issues that involve science and technology and asked how important they felt each was for U.S. presidential candidates to address. While nearly all felt these issues were important for the presidential candidates to address, of the issues presented to respondents, half (52%) felt that federal efforts to

strengthen U.S. science and math education were very important. As many (52%) believe it is very important for presidential candidates to address the issue of state and local efforts to strengthen education in this area. Fewer (30%) felt it was very important to increase federal funding for research to stimulate America's technological competitiveness or that it was very important to address the issue of federal efforts to encourage scientific and technological innovation in U.S. business (28%).

Effect on Candidate's Support of Science and Technology upon Voting Behavior

- Nearly three-quarters (72%) of those surveyed say they would be more likely to vote for a presidential candidate who places a high priority on strengthening science and technology (14% saying they would be much more likely, with a plurality (58%) saying "more likely"). Twelve percent said they would be less likely, and a similar percentage report this would not make any difference in the way they vote.
- A large majority (82%) of adults say they would be more likely to vote for a presidential candidate in November if the candidate supported federal efforts to strengthen U.S. science and math education, including 19% who say they would be much more likely. State and local efforts in this regard received similar responses with 87% reporting they would be more likely (21% much more likely) to vote for a presidential candidate who supported state and local efforts to strengthen U.S. science and math education. Three in every four (75%) say they would be more likely to vote for a candidate who supported increased federal funding of scientific research to stimulate U.S. technological competitiveness (14% much more likely). Similarly, 73% say they would be more likely to vote for a presidential candidate who supported federal efforts to encourage scientific and technological innovation in U.S. business (13% much more likely).

Support for Increased Funding

- Approximately one in five (18%) adults say they strongly support additional increased federal funding for scientific research and development in the United States, and another 53% support such funding. Demographically, there were no significant variations in the survey respondents' support of increased federal funding.
- Eighty-four percent of those surveyed are of the opinion that it is likely the National Science Foundation's funding of scientific research will lead to other new industries and business opportunities in the future, including 41% who believe this is very likely. Responses were similar across most demographic groups.

Science Literacy

- A large majority (83%) of the American public believe it is likely that most entry-level jobs in the next decade will require a basic understanding of science, including 48% who believe this is very likely. Only one in twenty (5%) do not think this is likely.
- When asked how well U.S. 12th grade students scored in science on an international test (they ranked near the bottom), half (49%) of those surveyed believed the students scored at least the same as (33%) or higher than (16%) students from other participating countries.

- While 42% believed that America's students scored lower, only seven percent were aware that America's students scored much below the international average of other participating countries.
- When respondents were told that 12th grade students from the U.S. performed much below the international average on these tests, more than half (52%) of those surveyed said they were very concerned about these test results. Adults between the ages of 35-64 expressed greater concern than those in other age groups. Those who were employed in science, engineering or other technological fields were more likely than their counterparts to say they were very concerned.
- Three in ten (29%) of the adults surveyed strongly agree that science and technology-related jobs may shift to other countries whose citizens have stronger science literacy skills, and another 46% agree. Thirteen percent disagree and do not think this will happen.
- After being asked a series of questions about science education and science literacy, and student performance, respondents were asked how concerned they believe presidential candidates should be about these issues. Nearly three in five (57%) felt they should be very concerned. Opinion was similar across most demographic groups and regions of the country.

Methods of Teaching Science

- Three-quarters (74%) of those surveyed report they are familiar with two methods of teaching science (textbook, lectures and memorizing scientific information and hands-on experiments, forming opinions and discussion). Among those familiar with both of these methods of teaching, most (86%) stated a preference for the hands-on method of teaching, while only one in twenty (5%) opted for the textbook-based method.
- Slightly more than three in five (64%) of those surveyed believe that science education should have the same priority in school as reading, writing and math. Twenty-seven percent believe it should have a greater priority, and only nine percent believe that science should have less of a priority than these other subjects.

States' Role in Science Education Reform Efforts

- Everyone was read three statements about their own state's role in science education reform efforts and asked to what extent they agreed or disagreed with each. A vast majority (93%) agree that students in their state need a stronger education in science (41% strongly agree). Eighty-five percent agree that improving pre-college science education needs to be one of their governor's top education priorities. Nearly nine in ten (88%) agree that their state and its governor should support science education reforms for K through 12 students (45% strongly agree). Those who work in the field of science and technology are more likely to strongly agree with these statements.
- Eighty-two percent say they would be more likely to vote for a gubernatorial candidate who places a high priority on strengthening science and technology (19% much more likely). There were no significant variations in responses by region of the country in this regard.

One Problem for Science to Solve In Next 25 Years

- Asked to name one specific problem they would like science to solve in the next 25 years, the public most frequently cites health-related issues, mentioned by six in every ten (61%) surveyed. Among the health problems cited, cancer was mentioned three in every ten (30%) adults. Roughly one in ten (9%) cited environmental concerns and two percent energy problems.



Making Science Make Sense® is Bayer's award-winning, company-wide initiative that advances science literacy through hands-on, inquiry-based science learning, employee volunteerism and public education.

For more information, please visit MakingScienceMakeSense.com

