

Supreme Court

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UNITED STATES DEPARTMENT OF EDUCATION
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FAX TRANSMITTAL**TO:** LVARA Capps**ORGANIZATION:** W. H.**PHONE NUMBER:** _____**FAX NUMBER:** _____**FROM:** Kevin J. Sullivan**PHONE NUMBER:** 401-0831**MESSAGE:** (1) 50/100 year summary
(2) Riley testimony
(3) Economics report
(4) Title IX report - good stuffnote * stars for integrity factsI'll be in tomorrow.**CONFIDENTIALITY NOTICE**

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31 PAGE(S) TO FOLLOW

Educational Change over the Past 50 and 100 Years

Student Enrollment

- Total enrollment in U.S. public schools rose from 14.1 million in 1895-96 to 42.7 million in 1992-93. Enrollment increases have not been consistent; in fact, enrollments declined between the mid-1930's and the mid 1940's (because of the Great Depression and World War II), and again between the early 1970's and mid-1980's. [NCES 1993, Table 9]
- In 1900, about 30 percent of all minority group members, ages 5 to 20, were enrolled in school; about 50 percent of white students were enrolled. In 1950, 75 percent of minority group members in that age group were enrolled in school; about 80 percent of whites were enrolled. In 1991, the percentage for both groups was 93 percent. [NCES 1993, Table 2]
- In the early 1950s, children with disabilities represented about 2 percent of public school enrollment. In 1990, they were 11 percent of enrolled students. [NCES 1993, Table 12]
- In 1900, about 10 percent of all 14- to 17-year olds were enrolled in secondary education. In 1950, 83 percent were enrolled. In 1994, 97 percent were enrolled. [NCES 1995, Table 55]
- In 1917, there were about 200,000 vocational students enrolled in federally funded programs in the United States. In 1950, there were 3.4 million vocational students. [?]
- In 1900, 2 percent of 18- to 24-year-olds were enrolled in institutions of higher education, compared to 12 percent in 1946, and 35 percent in 1994. [NCES 1993, Table 24; NCES 1995, Table 180]
- In 1946, 222,000 students were enrolled at two-year colleges; in 1993 nearly 5.6 million students were enrolled. [NCES 1993, Table 24; NCES 1995, Table 168]

School Completion

- In 1920, 25- to 29-year old "blacks and other races" completed an average of 5.4 years of school compared to 8.5 for whites. In 1950, blacks and other ethnic minority males at least 25-years old still completed only 5.4 years of school, while black and other minority females completed 6.1. At the same time, white males completed 8.7 years and white females 8.8 years. By 1993, minority men and women had completed 12.7 years, compared to 13 years for white males and 12.8 years for white females. [NCES 1995, Table 8]
- In 1900, there were 6 high school students graduated for every 100 17-year-olds in the population. In 1950, the ratio was 60 to 100. In 1994, the ratio was 73

graduates to every 100 17-year-olds. [NCES 1993, Table 19]

- In 1900, about 20 per 1,000 23-year-olds earned bachelor's degrees. In 1950, almost 200 per 1,000 earned degrees. In 1990, almost 300 per 1,000 received bachelor's degrees. [NCES 1993, Table 28]
- In 1900, about 20 percent of bachelor's degrees were conferred to females; in 1940, about 40 percent; in 1950, about 25 percent; and in 1993, over 50 percent were conferred to females. [Calculated from NCES 1993, Table 28 and NCES 1995, Table 236]
- In 1900, about 2,000 master's and doctor's degrees were granted. In 1950, 64,000 graduate degrees were granted. In 1993, nearly 412,000 graduate degrees were granted. In 1961, over 25,000 first professional degrees (including medicine, law, and dentistry) were awarded; in 1993, over 75,000 were awarded. [Calculated from NCES 1995, Table 236]
- In 1966, over 112,000 associate degrees were awarded. In 1992, nearly 515,000 associate degrees were awarded. [NCES 1995, Table 236]
- In 1950, 2 percent of all graduate degrees were awarded in math, 8 percent in engineering, 5 percent in business, and 33 percent in education; in 1992, 1 percent of all graduate degrees were awarded in math, 8 percent in engineering, 22 percent in business and 25 percent in education. [?]

Achievement

- In 1900, 11 percent of persons 14 years old and over were illiterate (could not read or write in any language). Among whites, the percentage was 6; among black and other minority persons, the percent was 44. In 1950, 3 percent of all people in the same age group were illiterate. In 1979, 0.6 percent of all persons 14 years old and over were illiterate; this includes 0.4 percent of whites and 1.6 percent of blacks. [NCES 1993, Table 6]
- In 1900, about 50 percent of high school students enrolled in Latin, 19 percent in physics, 56 percent in Algebra, 38 percent in U.S. and English history, and 22 percent in civics and community government. In 1948, about 8 percent of high school students enrolled in Latin, 5 percent in physics, 27 percent in algebra, 23 percent in U.S. and English history, and 8 percent in civics and community government. In 1990, 1 percent of high school students enrolled in Latin, 21 percent in physics, 40 percent in algebra (Algebra I and II), 87 percent in U.S. history, and 75 percent in civics and American politics. [NCES 1993, Table 16; NCES 1995, Table 56, and ?]

Attendance

- Student attendance figures have increased since the early days of schooling in the

United States (about 1870). One factor is the move away from an agrarian society, which had forced students to take off portions of the year to help with planting and harvesting. Advances in medicine have reduced long-term illnesses that caused students to miss many days of school.

- In 1896, the school year was 141 days and students attended 95 days, on average. In 1946, the school year was 178 days, with average attendance of 151 days. In 1991, the school year was 178 days and average attendance was 161 days. [NCES 1993, Table 14]
- In 1899-1900, 69 percent of students on average attended school daily; in 1950, 89 percent attended daily; in 1989-90, 90 percent attended daily. [NCES 1995, Table 38]

Income

- While males in 1991 with less than an eighth grade education earned in real terms 4 percent more than males in 1946 with the same amount of education, males with four or more years of postsecondary education earned 41 percent more than their predecessors. [Calculated from NCES 1993, Table 7]
- In 1968, males over 25 with four or more years of college earned a mean income of \$11,851 in real dollars; females earned \$3,862, 67 percent less than males, or 33 cents for every dollar earned by males. In 1991, males in that group earned \$44,485; females earned \$24,684, 45 percent less than males, or 55 cents for every dollar earned by males. [NCES 1993, Table 7]
- In constant 1992-93 dollars, instructional staff in elementary and secondary schools (i.e., supervisors, principals, teachers, and other nonsupervisory staff) earned a \$6,514 annual salary on average in 1920, compared to \$18,114 in 1950, and \$36,454 in 1993. [NCES 1995, Table 38]

Miscellaneous

- In 1900, the average pupil/teacher ratio in elementary and secondary schools was 37:1. In 1950, the ratio was 28:1, and in 1993, the ratio was 17:1. [Calculated from NCES 1995, Table 38]
- In constant 1992-93 dollars, based on daily attendance, the average public school per pupil expenditure was \$399 in 1920, compared to \$1,264 in 1950 and \$5,594 in 1993. [NCES 1995, Table 38]
- In the 1947-48 school year, 356 thousand children were being served in special education programs. By 1989-90, 4.6 million were being served. [NCES 1993, Table 12]

Expenditures

- In 1953, the average annual per pupil expenditure for instruction in Mississippi was \$98 per student in white schools and \$43 in black schools. ["Minority Participation, Achievement, and Attitudes Since Brown vs. Board of Education Decision" summary, p.1]
- In the District of Columbia in 1953, the average annual per pupil expenditure for instruction was \$240 in white schools and \$187 in black schools. Teacher salaries averaged \$4,998 in white schools and \$4,614 in black schools. ["Minority Participation, Achievement, and Attitudes Since Brown vs. Board of Education Decision" summary, p.1]

References

NCES. 1993. *120 Years of American Education: A Statistical Portrait*. Washington, DC: U.S. Department of Education.

NCES. 1995. *Digest of Education Statistics 1995*. Washington, DC: U.S. Department of Education.

General Talking Points on Education

Investing in America's Future

Theme 1: In this post Cold War era I believe is so important that we recognize that America's future is defined by how we educate our children. We are in a new Information Age -- what I call an Education Era. **Whether America succeeds or fails in this new time depends on whether we are willing to invest in the future by investing in our children's education today.**

Theme 2: The American people are tuned into education. They know its value. People have higher expectations, many more young people expecting to go on to college. I travel a lot around the country -- 32 states last year -- I am able to get a first hand look at what is happening.

Higher Education

Theme 3: America's system of higher education is one of the best in the world - open to all who are willing to work hard to make the grade. Access to college has been part of our national purpose for well over fifty years. One result of all this is that we lead the world in giving women the opportunity to get a higher education. I am going to boast a little and take some credit for America's harvest of Gold medals in the Olympics -- Title IX has given American women athletes the support and the opportunity to demonstrate that they are the best in the world..



Theme 4: We have created the American middle class by giving individual Americans the financial help they needed when they needed it. 40 million Americans have gotten government student loans in the last 20 years, that really is what has created the American middle class. My Department gives out 2/3 of all student aid -- that half of what we do.



Theme 5: Community colleges are an unrecognized success -- giving so many Americans a chance to change their lives. I met Debbie Strobel in Louisville a few weeks ago when we I went to Louisville to talk about adult literacy and the fact that there has been an 8% jump in the last four years of adults going back to school or learning new skills on the job. Debbie was a high school dropout who went back in school at the local community college and is now planning a nursing career. And Debbie has her husband back in school too.

Theme 6: The rising cost of going to college is my biggest concern. All through the 1980's tuition rose faster than inflation. One reason is that state support for colleges dropped by 14% and schools have more and more had to rely on tuition to cover costs. Tuition accounts for 23% of school revenue in 1994-1995 compared to 16% in 1980-81. The rise in tuition has leveled off in the last few years but we will have many more young people going to college in the next ten years -- an additional 2 million -- so we need to pay attention to this issue because we expect a 13% increase in college enrollments in the next ten years. .

Theme 7: Going to a state college is still a good buy --average cost of tuition is \$2,865 for in-state students -- and that the long term value of a college education is very good. 15 years ago, the typical college-educated American made 38 % more than an American with a high school diploma. Today, the typical college-educated American makes 73 % more. America has the best higher education system in the world. We don't need to change it -- we need to make it available to all Americans.

Theme 8: President Clinton has a higher education agenda. We want to increase our basic Pell Grant (\$2,700 in 1997).. We have created a very successful direct lending program that has cut costs and paperwork. You can get a student loan in 24 hours instead of waiting weeks. The President has proposed a **\$10,000 middle class Tax deduction.** He wants people to be able to use money from their IRA to help pay for college. And we want to double the size of our college work-study program over the next 5 years to support one million students And we cut the student loan debt from 22% to 12% and we intend to keep it.

Theme 9 : Hope Scholarship - 2 years of college as universal as 4 years of high school. Under this plan we will give any American going to school a tax cut of **\$1,500 --** which would cover the cost of tuition at the average community college. And you would get the tax cut for a second year if you kept up a B average. In short, going to a local community college would be free and this tax cut would be available to anyone going to a 4 year college as well.

Theme 10: The President's broad forward-looking agenda is a stark contrast to the agenda of those in Congress. We spent the last 2 years fighting to keep the Congress from cutting \$10 billion from our student loan program. You can't prepare for the future by cutting education today yet that is what they wanted to do and it makes no sense at all when you realize that we have a lot more young people who need to get an education.

**UNITED STATES DEPARTMENT OF EDUCATION****THE SECRETARY**

**Testimony of
Richard W. Riley
U.S. Secretary of Education
before the
House Committee on Economic
and Educational Opportunities**

see p. 3-4-8

**The Federal Role in American Education
Thursday, January 12, 1995
Washington, D.C.**

Mr. Chairman, it is a great pleasure to come before the committee and talk about the federal role in American education. With the permission of the Chairman, I would like to submit for the record my prepared testimony and a background paper that describes how the U.S. Department of Education functions.

This Committee has always had a strong bipartisan commitment to improving education. I want to assure the Chairman and committee members that I will continue to work with you in this spirit of bipartisanship. We are not educating our children as Republicans, or Democrats, or as Independents. Our children are learning as Americans, the future of our country.

Education is a national priority but a state responsibility under local control. I believe strongly in state and local decision making. I have been there as a governor. At the same time, I believe education must be part of our national purpose. Our economic prosperity, our national security, and our nation's civic life have never been more linked to education than they are today as we enter the Information Age of the 21st century.

I am a believer in education. As a governor and now as the U.S. Secretary of Education, I have worked to improve this nation's education system. There is nothing more important to the future of this country. In the decade since the release of the report, "A Nation at Risk," we have come a great distance in redesigning American education for the 21st century. We are not there yet, but we are moving forward. We are making steady progress.

In the last two years, this Committee has demonstrated creative leadership in working to put excellence back into American education. "Far reaching," "unprecedented," and "historic" are some of the words that have been used to describe the bipartisan legislative effort of the last two years.

The Goals 2000 Act; the creation of a new school-to-work opportunity initiative; our new direct lending program; our substantial new investment in technology; refocusing our research arm; and the Safe Schools Act are all part of the federal effort to help state and local decisionmakers move their classrooms forward.

This committee has set a very high standard. I urge the committee to stay on course even as we continue to work with you to improve federal support for local and state reform. We can always do better. I believe if we stay on course we will be doing the right thing for our children and this nation's future.

EDUCATION IS THE FUTURE

The American people may be angry or anxious about many things, but they still place a very high value on education. The American public is pro-education. The American people know instinctively that education is the future. Peter Drucker makes this critical point in an Atlantic magazine article entitled "The Age of Social Transformation." I cannot emphasize his point enough. In the new, emerging "knowledge society," he writes,

"Education will become the center of the knowledge society, and the school its key institution."

Mr. Drucker's point helps to explain the result of a recent national poll on a proposed balanced budget amendment -- the *New York Times*/CBS poll published on December 15th. In this poll, people were asked whether they favored a balanced budget amendment. The sentiment in favor of such an amendment was favorable by a very large measure -- 81 percent.

But when the people polled were asked a follow up question -- about whether they favored cuts in education spending for the purpose of balancing the budget -- public support headed South -- to use a phrase. Only 22 percent of the people polled favored balancing the federal budget by cutting spending on education, a drop of 59 percent.

The American people know that we are in a unique time of economic and social transition. If the locus of power in this society is ultimately the self-reliant American and not the government, we ought to recognize that our self-reliance comes largely from education -- and even more so in this new knowledge-driven age in which our children are growing up. I know the American people are prepared to invest in education.

I want to underscore the fact that our future is one of crowded classrooms. We are in the midst of a second baby boom that has gone largely unnoticed and unreported. We anticipate that by 1996, elementary and secondary school enrollment will surpass the previous high set in 1971 by the baby boomers. In the next ten years, an additional 5.9 million children will enter classrooms all across this nation.

Increasingly in the future, high-paying jobs will require both more skills and more knowledge, and different kinds of knowledge and skills -- analytical skills, problem-solving skills, and the ability to use modern technology. Every child must know his or her basics. But in an era where information is exploding all around us, the skills people need will change rapidly; thus, the need for what Mr. Drucker calls the "habit of continuous learning," and what the President has called a

"culture of learning."

This is a critical time for American education. Not only are we on the threshold of a new economic age, but we are already under enormous pressure to educate millions of additional children, to teach them not only the basics, but to help them grasp the technology of the future. How we meet these two challenges will determine the future prosperity and economic security of this country.

THE NATIONAL INTEREST IN EDUCATION

Economic Development and Success: Historically, the national government has moved to support education in times of significant economic transition. Creation of our land grant college system (Morrill Act, 1862) and support for vocational education as the United States fully emerged into the industrial era (Smith/Hughes Act, 1917) are significant examples of the national commitment to education in times of economic transition.

The passage of the G.I. Bill in 1944, which sent 2.2 million veterans to college, was a clear national recognition that this nation's future economic success was linked to giving as many Americans as possible access to a higher education. Between 1948 and 1973, for example, one-fifth of our nation's GNP was related to access to education.

In the 1990s, the link between education and our nation's future economic competitiveness is just as clear. In 1992, the average annual earnings for those with a bachelor's degree were almost twice those of people with only a high school diploma, and more than two-and-a-half times greater than those who had not graduated from high school (Chart 1). In this decade, 89 percent of the jobs being created require some form of post-secondary training.

Today, we have a national and international economy, and we live in a truly mobile society. Almost one of ten Americans moves across state lines every five years. A young person educated in Ohio may go to college in Michigan, get married in California, and find a job in Texas. The local quality of education has national implications on employment and economic growth.

National Security: The federal government's interest in supporting education to protect our national security needs is long-standing. National security was at the very heart of the passage of the National Defense Education Act (NDEA) in 1958, with its strong emphasis on math and science training following the Sputnik scare. NDEA helped to educate a generation of scientists who won the Cold War.

Our nation's armed forces also place a higher premium on a quality education. This year, the armed forces will recruit 180,000 young Americans to serve their country. Our military has learned from long experience that having recruits who are highly educated means higher retention rates, reduced training time, and increased productivity -- all of which ensure unit

readiness.

Responsible Citizenship: Access to a high-quality education for all Americans is the critical element in sustaining this nation's civic life. We seek to educate self-reliant Americans, citizens who will actively participate in our democracy. As a nation, we seek to guarantee access to quality education; we do not guarantee equal outcomes.

 Two key facts suggest a powerful rationale for giving every young person access to a high-quality education: about 44 percent of those on welfare are high school dropouts; and 82 percent of all the people locked up in America's prisons and jails dropped out of school as well. If you want to end welfare, and if you want to end the violence and spiritual numbness that grips some of our young people, then I urge this Committee to continue its investment in education. 

Responsible citizenship begins with the family. The American family remains the rock on which a solid education can and must be built. Thirty years of research support this conclusion. This is why I have spent much of my effort in the last year encouraging parents to reconnect to the learning process through our "Family Involvement Partnership for Learning."

The national commitment to supporting parents who want their children to be part of the American Dream has led the federal government to make access to a quality education, at all levels, a center point of its support for American education. In many respects, the American middle class is what it is today because of this federal support. This is particularly true with regard to higher education. In the last 20 years, 40 million Americans have received a federal student loan.

Access and Civil Rights: Ensuring the Constitutional rights of all Americans regarding education is clearly a function of our national government. In the 1960s, this nation moved to redress our long history of denying minority Americans the equal opportunity to get a first-class education.

At the same time, we also recognized the economic implications of this continuing inequality. An American denied an equal opportunity to a first-class education had little chance of bootstrapping his or her way out of poverty. The 1965 Elementary and Secondary Act (ESEA), especially Title I, sought to raise the academic achievement of poor and disadvantaged students. Since the 1970s, the achievement gap between black and white students has narrowed substantially. Laws to remove gender and disability barriers to educational opportunity are also a reflection of our national commitment to equal opportunity in education.

STATE AND LOCAL RESPONSIBILITY

The national interest in supporting and encouraging the advancement of American education has always been governed by a clear recognition that education is a state and local responsibility. I am a firm believer in the 10th Amendment.

Information Age.

My ability as the U.S. Secretary of Education to work with the Congress in redesigning this nation's telecommunication policy, and my continuing dialogue with Reed Hundt, the Chairman of the Federal Communications Commission, have been and will continue to be, in my opinion, one of my most important responsibilities.

Catalyst for solutions: This Department seeks to be a catalyst for solutions in other ways as well. Six million dollars is available to support specific demonstrations of charter schools. We will also support new "character education" initiatives. Our Fund for the Improvement of Education seeks to support innovative solutions to educational problems including local efforts at public school choice and school-based decisionmaking.

Another example of using our research capacity to find solutions worthy of national attention is a new five-year effort working with John Hopkins University and Howard University to determine just how we can help put an end to the cycle of student failure among at-risk youth.

ACCESS TO HIGHER EDUCATION: CREATING THE MIDDLE CLASS OF THE FUTURE

 The creation of the American middle class, as I said earlier, reflects a sustained commitment by the federal government, now dating back 50 years, to supporting the American quest for a higher education. The Higher Education Act of 1965 and the creation of the Pell Grant program in 1972, like the 1944 G.I. Bill, have served as springboard to the middle class for millions of Americans.

 Between 1964 and 1993, college enrollment nearly tripled (from 5 million to 14 million), the percentage of high school graduates attending college has increased by one-third (from 48 percent to 63 percent), and college enrollment rates for minority students increased by nearly two-thirds (from 39 percent to 62 percent).

 **Student Aid:** Today, 75 percent of all the student aid for Americans seeking some form of higher education comes from the federal government. This is a vital national function given the importance of education and training in our changing economy and the rising cost of higher education.

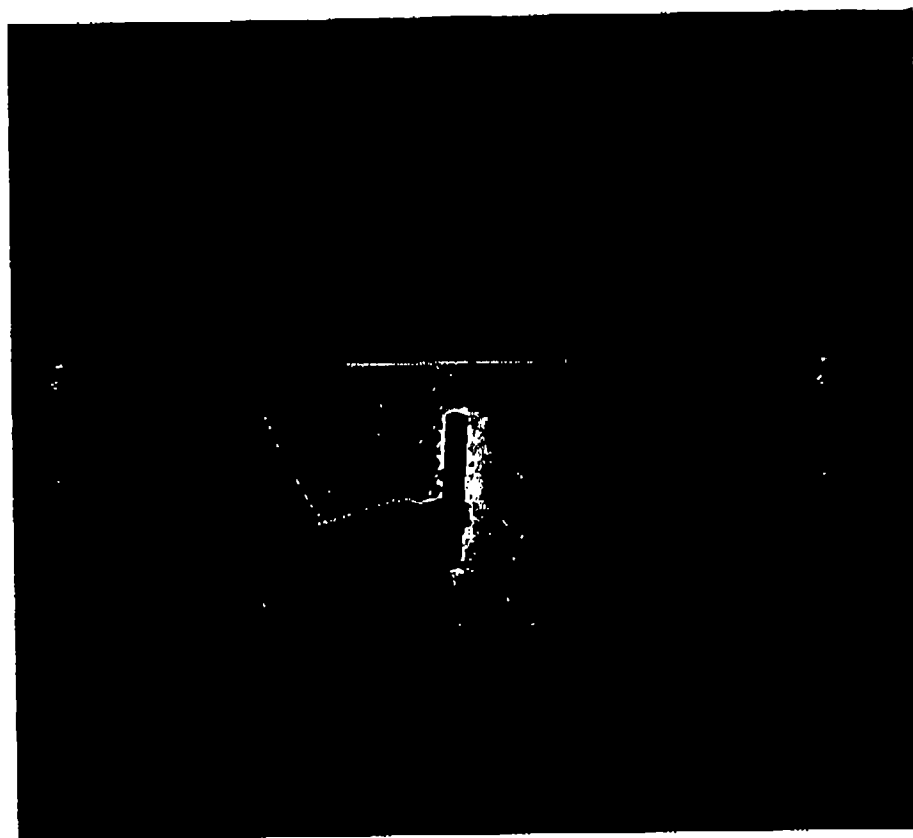
 Charges at public post-secondary institutions rose from 10 percent of median family income to 14 percent between 1980 and 1991. Charges at private post-secondary institutions rose from 23 percent of median family income to 37 percent between 1980 and 1991. As a result, there has been a substantial increase in student borrowing.

Total borrowing in the Student Loan programs increased by 29 percent between FY 1993 and 1994. The number of loans increased by 19 percent during the same period of time. Seen in that

NATIONAL CENTER FOR EDUCATION STATISTICS

FINDINGS FROM

**EDUCATION AND THE ECONOMY:
AN INDICATORS REPORT**



**U.S. Department of Education
Office of Educational Research and Improvement**

NCES 97-939

U.S. DEPARTMENT OF EDUCATION

Richard W. Riley
Secretary

OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT

Ramon C. Cortines
Acting Assistant Secretary

NATIONAL CENTER FOR EDUCATION STATISTICS

Pascal D. Forgione, Jr.
Commissioner

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FINDINGS FROM

**EDUCATION AND THE ECONOMY:
AN INDICATORS REPORT**

The productivity of the U.S. work force is a primary determinant of the standard of living of the U.S. population. Worker productivity is typically measured as output per worker or per hour worked. It is affected by many factors, including the education and skills of the work force. Education and skills are important because they expand a worker's capacity to perform tasks or to use productive technologies. In addition, better educated workers can adapt more easily to new tasks or to changes in old tasks. Education may also prepare workers to work more effectively in teams because it enhances their ability to communicate with and understand their co-workers.

Much of the recent concern about the productivity of U.S. workers has been prompted by uncertainty about the ability of domestic firms and workers to compete in an increasingly international marketplace. As growth in U.S. productivity has slowed over the past two decades and other countries achieve productivity levels similar to those in the United States, concern about the competitiveness of U.S. firms and workers has increased. Some attribute the loss of the nation's productivity advantage to what they claim is the limited ability of the U.S. educational system to provide students with the skills necessary to succeed in today's labor market. However, factors other than education also affect productivity, and these must be considered when comparing productivity trends across countries.

Variation in the quality and quantity of education across countries is only one factor contributing to differences in worker productivity; capital investment, technical innovation, foreign trade, and government regulation can also affect productivity. Nevertheless, education

remains an important contributor to productivity growth and has a major influence on the standard of living. This essay highlights several measures of productivity and education, and addresses the link between these two sets of measures. A better understanding of the relationship between worker productivity and the condition of education is essential to understand how investment in education contributes to the U.S. economy.

TRENDS IN WORKER PRODUCTIVITY AND THE CONTRIBUTION OF EDUCATION

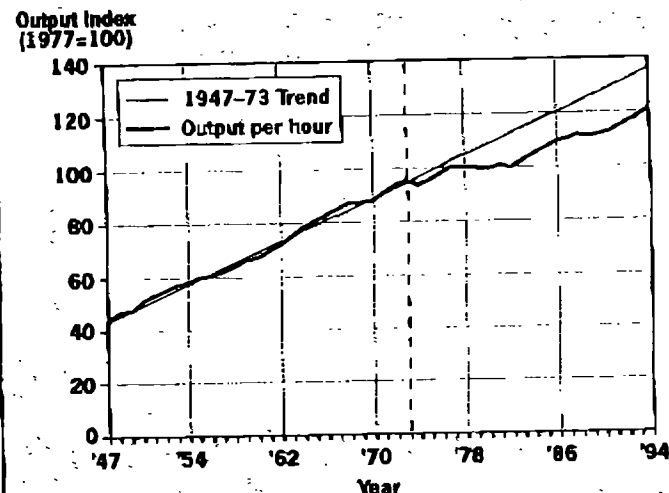
- *Worker productivity in the United States has increased almost continuously since the end of World War II, but growth has slowed since 1973.*

Worker productivity in the United States has grown almost continuously since the end of World War II, rising to a level in 1994 that is approximately three times that of 1947 (figure A). Post-war growth in productivity was slower after 1973 than it was before 1973. From 1947 through 1973, output per hour increased by nearly 3 percent per year, compared to slightly more than 1 percent per year from 1973 through 1994. It is unclear whether the slowdown in productivity growth since 1973 merely reflects fluctuation around the long-term growth rate, which is equal to about 2 percent, or whether it signals slower long-term growth.

- *Since World War II, worker productivity has grown more slowly in the United States than in other industrialized countries.*

For several decades, productivity in other industrialized countries has been gradually catching up to that in the United States (figure B). However, the United States remained the leader as of 1990, with a gross domestic product (GDP) per worker that was slightly higher than that in Canada, and about 25 percent higher than that in Italy, the country with the third highest GDP per worker.

Figure A
Index of real output per hour of all persons,
business sector: 1947-94

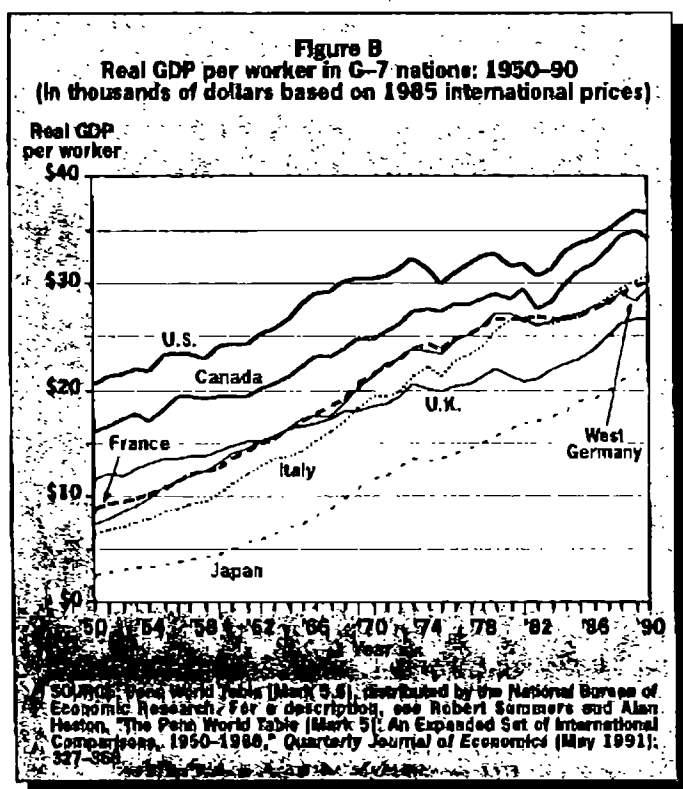


NOTE: Figures for years after 1988 were originally based on 1982=100. They were multiplied by a factor of 1.012 for use in the 1977=100 index. Hours of all persons include hours of employees, proprietors, and unpaid family workers. Output is the constant-dollar market value of final goods and services produced. For the business sector, the index relates to gross domestic product (GDP) less general government, output of nonprofit institutions, output of paid employees of private households, and rental value of owner-occupied dwellings. Business output was about 78 percent of GDP in 1982.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Handbook of Labor Statistics*, Washington, DC: U.S. Government Printing Office, 1989; *Monthly Labor Review* 118 (8) (August 1995): 175.

According to one theory of productivity growth, referred to as the convergence hypothesis,¹ it is to be expected that productivity in lagging countries will converge on that of the United States because these countries can exploit technologies transferred from the United States, thereby closing the gap in worker productivity. This "catching-up" process suggests that the United States is inevitably at risk of losing its lead in worker productivity as long as other countries have the capabilities, including an adequately educated work force, to exploit new productive technologies.

The ability of the United States to have maintained a substantial lead in productivity for nearly a century is at least partly attributable to the two world wars, which destroyed the productive capacity of other countries while spurring technological innovation in U.S. manufacturing. However, the huge productivity advantage of the United States has dissipated under the more normal post-war economic conditions, which have allowed other countries to rebuild their productive capacities and expand their technological capabilities. It now appears that the other industrialized countries may eventually share the lead in productivity with the United States.



But insofar as the "catching-up" process involves the transfer of technology from the leader country to the lagging countries, the process should eventually slow down as the lagging countries exhaust their opportunities to exploit new technologies from the leader. Eventually, the countries sharing the lead in productivity would presumably be in a position to exploit technological advances from each other.

■ **Growth in education has historically been an important source of growth in worker productivity.**

Increases in educational attainment were responsible for an estimated 11 to 20 percent of growth in worker productivity in the United States in recent decades.² Growth in factors other than education have also contributed to growth in worker productivity. For example, increases in capital accounted for an estimated 40 percent of growth in worker productivity in the United States from 1948 to 1990.³ In addition to capital, such factors as technical innovation, foreign trade, and government regulation can also affect productivity.

The historical contributions of these factors affecting productivity are not necessarily indicative of the relative returns to potential investments in the factors. They simply reflect the linking of the relative growth rates of each factor over the past several years to the productivity growth rate. The growth accounting methods used to determine these sources of productivity growth cannot be used to identify future preferred input investments.

Education appears to play an important role in worker productivity in all industrialized countries. The industrialized countries with the highest productivity levels tend to have highly educated work forces, and the convergence in productivity among these countries generally parallels that in educational attainment.

THE ECONOMIC CONSEQUENCES OF EDUCATION FOR INDIVIDUALS

Ultimately, growth in a nation's productivity results from growth in the productivity of individual workers. The best available measure of a worker's productivity is that worker's wages, as employers generally pay wages equal to the marginal productivity of their workers. The impact of education on the productivity of workers can be determined by estimating the impact of education on wages.

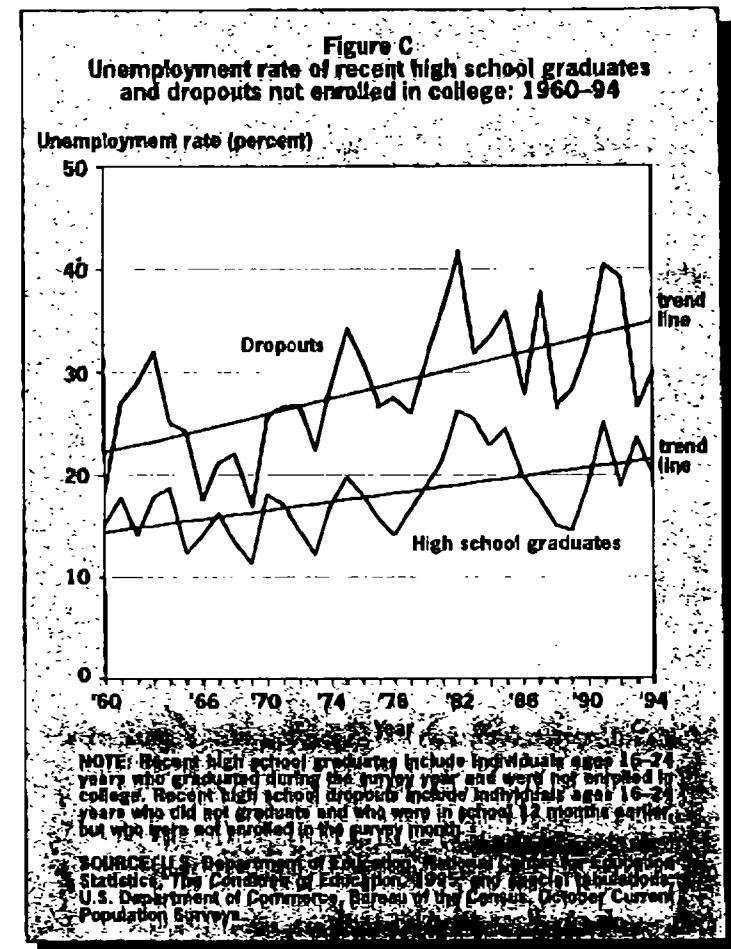
Education may also improve workers' employment stability, enabling more educated workers to maintain their jobs or to quickly find new jobs in the face of changing economic conditions. Therefore, the association between education and unemployment can be a further indication of the effect of education on the productivity of workers.

Educational Attainment

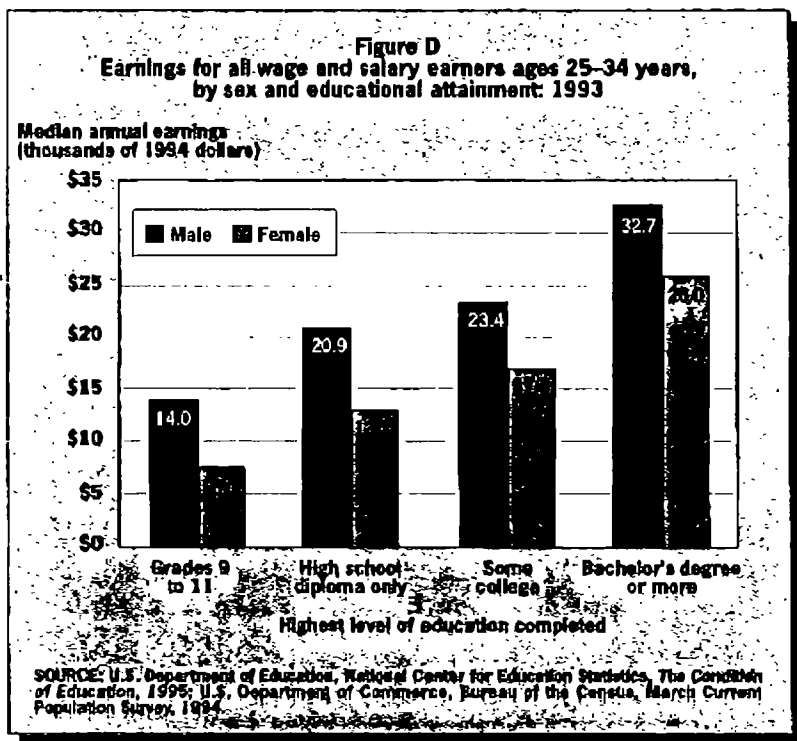
- **Workers with higher educational attainment are unemployed less and earn more than workers with lower educational attainment.**

Over the past 30 years, a substantial proportion of high school graduates and dropouts were unemployed shortly after leaving high school, with dropouts generally facing a higher unemployment rate than graduates (figure C). In 1994, 30 percent of recent dropouts were unemployed, compared to 20 percent of recent graduates not enrolled in college. The unemployment rates for both groups have increased since 1960.

Median earnings are positively associated with educational attainment (figure D). Among males ages 25-34 years in 1993, median



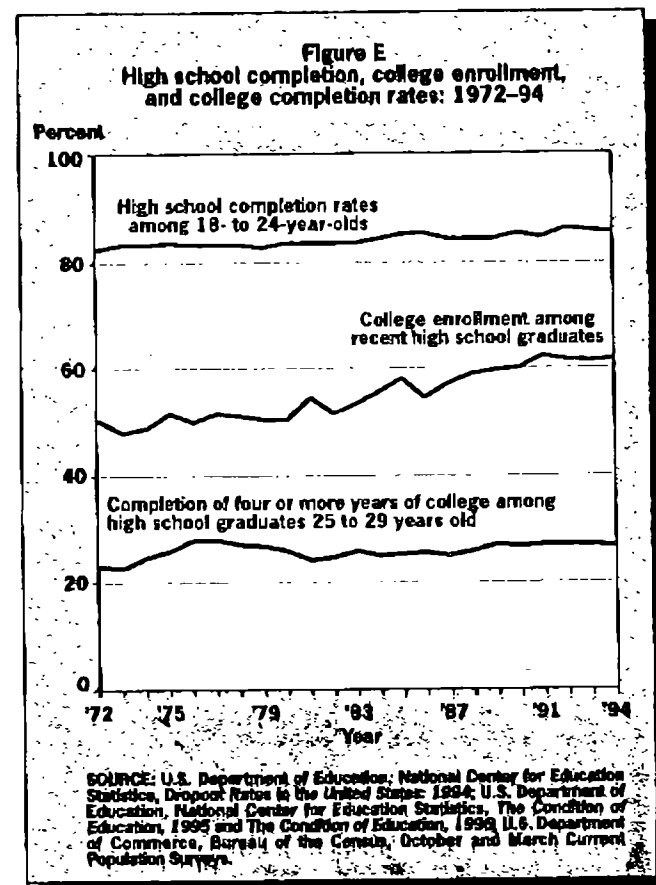
earnings of those with a college degree were equal to about \$33,000 per year, which was more than 50 percent greater than the median earnings of high school graduates and more than twice those of high school dropouts. The relationship between education and earnings for females is similar, although within each educational category, earnings are lower for females than for males.



■ **Educational attainment in the United States has increased over the past 20 years.**

The proportion of 18- to 24-year-olds who have completed high school has increased slowly, rising from approximately 83 percent in 1972 to about 86 percent in 1994 (figure E). An increasing number of students who have completed high school also move on to college. Among recent high school graduates, the college enrollment rate increased from 49 percent in 1972 to 62 percent in 1994.

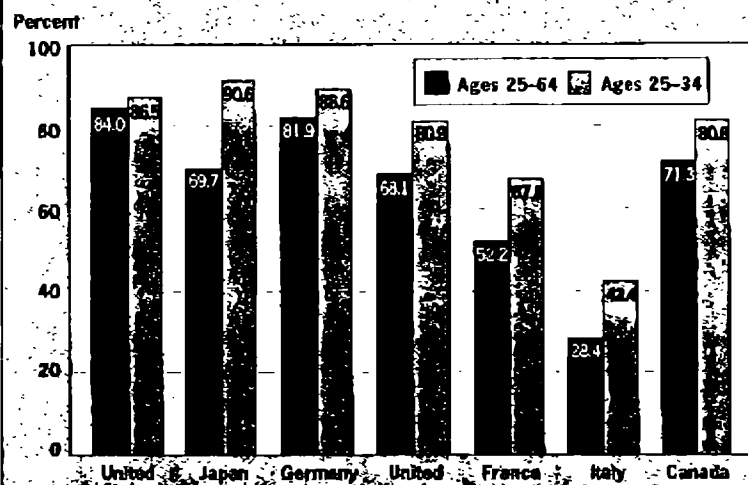
However, many students who enroll in college do not complete four years there. The completion rate of 27 percent in 1994 was only slightly higher than the rate of 20 years before.



■ **Although the rate of college completion in the United States still far exceeds that in most other countries, educational attainment generally is increasing more slowly in the United States than in other industrialized countries.**

In each of the G-7 countries, the rate of secondary school completion is higher among 25- to 34-year-olds than among 25- to 64-year-olds, indicating that the rate of secondary school completion

Figure F
Secondary school completion, by age: 1992



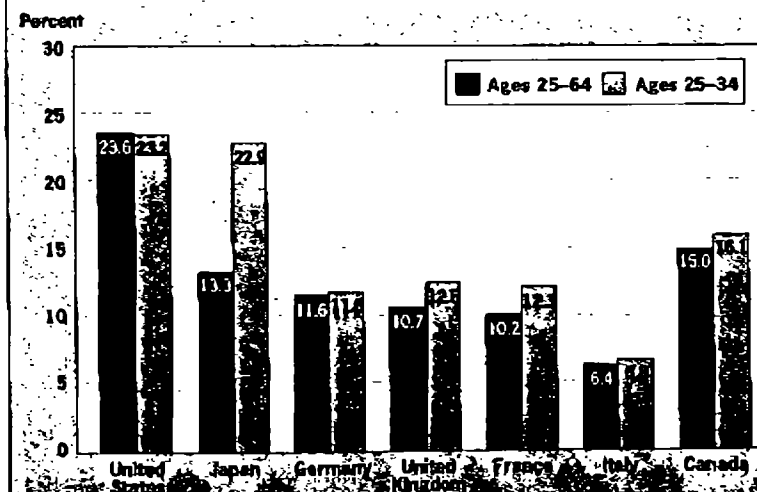
NOTE: In the United States, completing secondary school is defined as graduating from high school or earning a GED.

SOURCE: U.S. Department of Education, National Center for Education Statistics, The Condition of Education, 1995; Organization for Economic Cooperation and Development, Indicators of Education Systems, Digest of International Education Statistics, forthcoming.

is increasing in these countries (figure F). Moreover, the gap between the completion rates of younger and older workers is larger in other G-7 countries than in the United States, suggesting that secondary school attainment is increasing at a faster rate in the other countries. The high school completion rates for young adults in Japan and Germany are now comparable to those of young adults in the United States, while the rates for young adults in Canada and the United Kingdom are approaching those of their counterparts in the United States.

Most G-7 countries still lag well behind the United States in higher education attainment (figure G). The proportion of the population ages 25-64 years who have completed a college education is by far the highest in the United States. Although the U.S. lead is smaller for adults ages 25-34 years, only Japan has a rate of higher education attainment among young adults comparable to that in the United States. The rate of college completion among young American adults has risen slightly during the past 20 years, while the rate for young adults in Japan has risen dramatically; thus, Japan has nearly caught

Figure G
Completion of higher education, by age: 1992



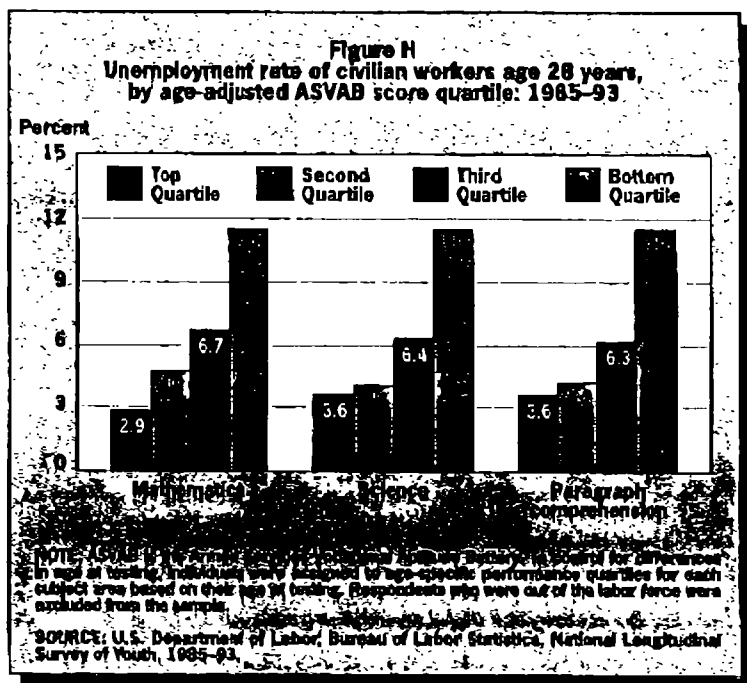
NOTE: In the United States, completing higher education is defined as earning a bachelor's degree.

SOURCE: U.S. Department of Education, National Center for Education Statistics, The Condition of Education, 1995; Organization for Economic Cooperation and Development, Indicators of Education Systems, Digest of International Education Statistics, forthcoming.

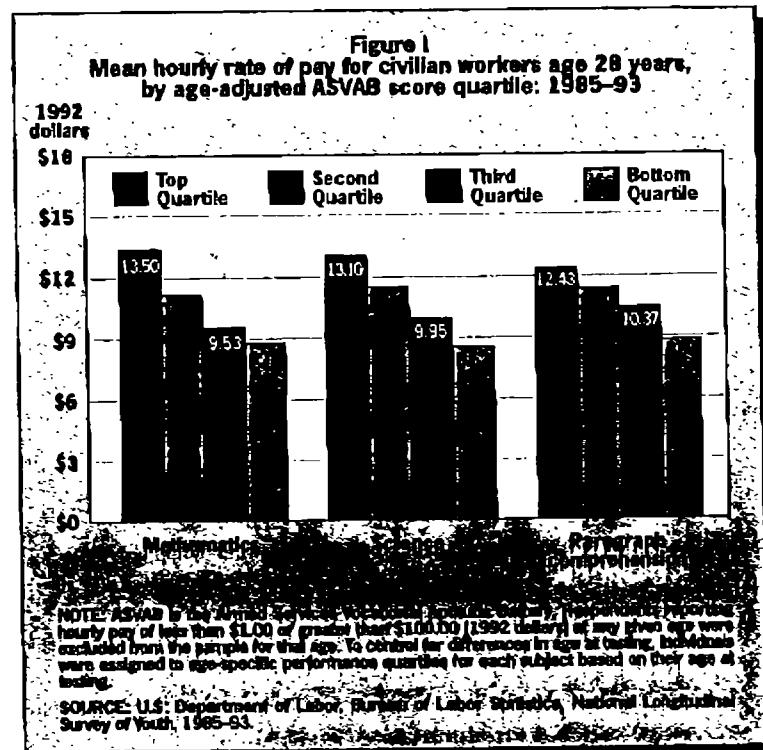
up to the United States. The rate of higher education attainment in most other G-7 countries has increased more slowly than that in Japan, as indicated by the smaller attainment gaps between younger and older adults in those countries.

Educational Achievement

- Workers who have a record of high academic achievement, as measured by achievement test scores, are unemployed less and earn more than workers with lower scores.

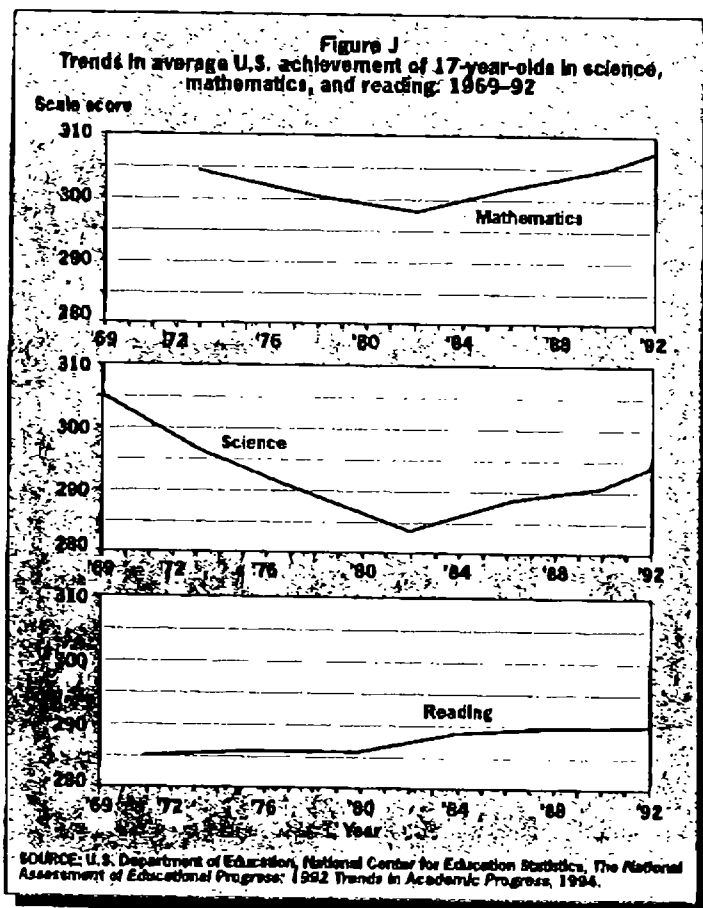


Workers who are 28 years old and who have previously scored in the top quartile on the Armed Services Vocational Aptitude Battery (ASVAB) mathematics, science, or paragraph comprehension tests have a lower unemployment rate than other workers (figure H). For example, 2.9 percent of workers in the top quartile of the mathematics test are unemployed, compared to 7.5 percent of workers in the other three quartiles combined. Workers in the top quartile on the tests in each subject also earn more, on average, than other workers (figure I). For example, workers in the top quartile on the mathematics test earn an average of \$13.50 per hour, compared to an average of \$9.84 per hour for workers in the other three quartiles combined.



- Test scores of U.S. students generally increased in the 1980s and 1990s, offsetting declines that occurred during the 1970s.

Among 17-year-old students, National Assessment of Educational Progress (NAEP) test scores increased from 1982 through 1992 (figure J). Increases in mathematics and science scores reversed a trend of declining scores that existed throughout the 1970s. By 1992, the scores in these subjects had recovered to the 1973 levels. NAEP reading scores of 17-year-old students have increased slowly and steadily since the early 1970s.



- U.S. students trail students from many other countries in mathematics and science achievement, but U.S. students tend to lead in reading achievement.

Most of the countries included in a 1991 international study of mathematics and science achievement outperformed the United States in the mathematics achievement of both 9-year-old and 13-year-old students (table A). With respect to science achievement, 9-year-old U.S. students performed as well as those in most other countries, but 13-year-old U.S. students scored below their counterparts in half of the other countries. In a separate international study of reading achievement, the United States led 20 of 22 countries in reading scores for 9-year-olds and was equivalent to or led 21 of 22 countries for 14-year-olds.

Table A
International distribution of academic achievement relative to the United States: 1991-92

Subject and age	Number of countries performing:				Number of countries in the study
	Significantly higher than the U.S.	Not significantly different from the U.S.	Significantly lower than the U.S.		
MATHEMATICS					
9-year-olds	17	2	0	19	10
13-year-olds	12	1	1	14	15
SCIENCE					
9-year-olds	0	7	2	9	10
13-year-olds	7	6	1	14	15
READING					
9-year-olds	1	20	1	22	23
14-year-olds	1	14	7	22	23

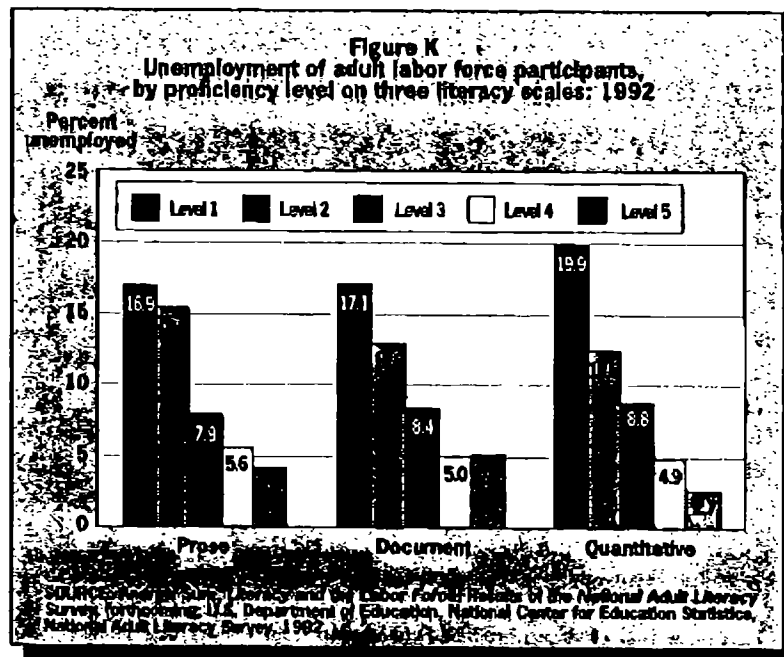
SOURCE: U.S. Department of Education, National Center for Education Statistics, The Condition of Education, 1993; Warwick B. Elley, How in the World Do Students Read?, International Association for the Evaluation of Educational Achievement, Study of Reading Literacy, 1992; and Educational Testing Service, International Assessment of Educational Progress, 1992.

Adult Literacy

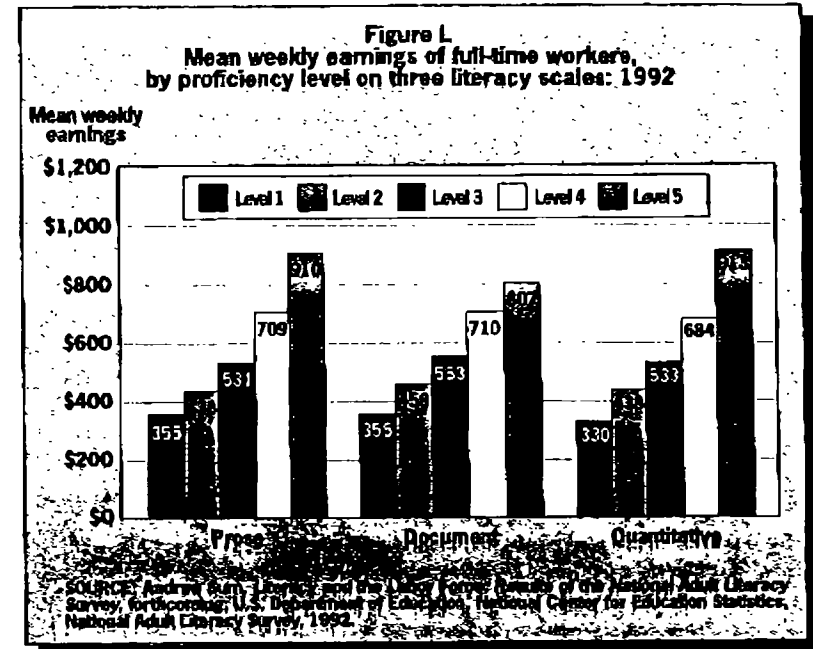
A 1992 study tested the performance of U.S. adults on three scales of literacy—prose, document, and quantitative—and categorized adults into five literacy levels according to their test scores, with level 1 being the lowest literacy level and level 5 being the highest.

- **Workers with higher literacy scores are unemployed less and earn more than workers with lower literacy scores.**

Unemployment rates are especially high for workers in the two lowest levels of literacy—levels 1 and 2—on each of the three literacy scales (figure K). For these workers, the unemployment rate ranges from 12 percent for workers with level 2 quantitative literacy to nearly 20 percent for those with level 1. Unemployment rates for individuals in the two highest literacy levels—levels 4 and 5—are less than 6 percent.



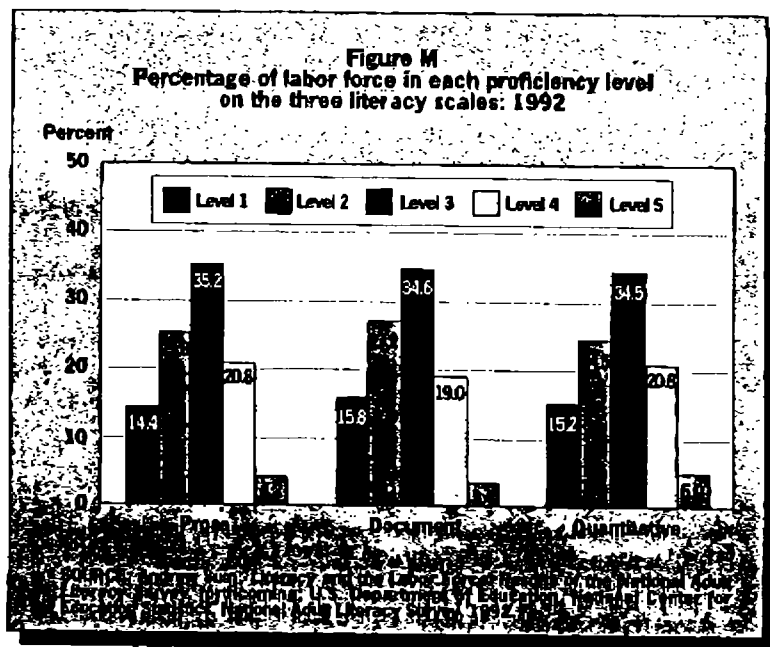
Workers with high literacy scores earn more than other workers, on average (figure L). On the prose scale, for example, full-time workers in level 3 earn a mean weekly wage that is 50 percent higher than that of their counterparts in level 1. Those in level 5 earn a weekly wage that is 71 percent higher than the wage of those in level 3.



- **The literacy proficiency of a substantial proportion of the U.S. labor force is limited, and only a small proportion of workers perform at a high literacy level.**

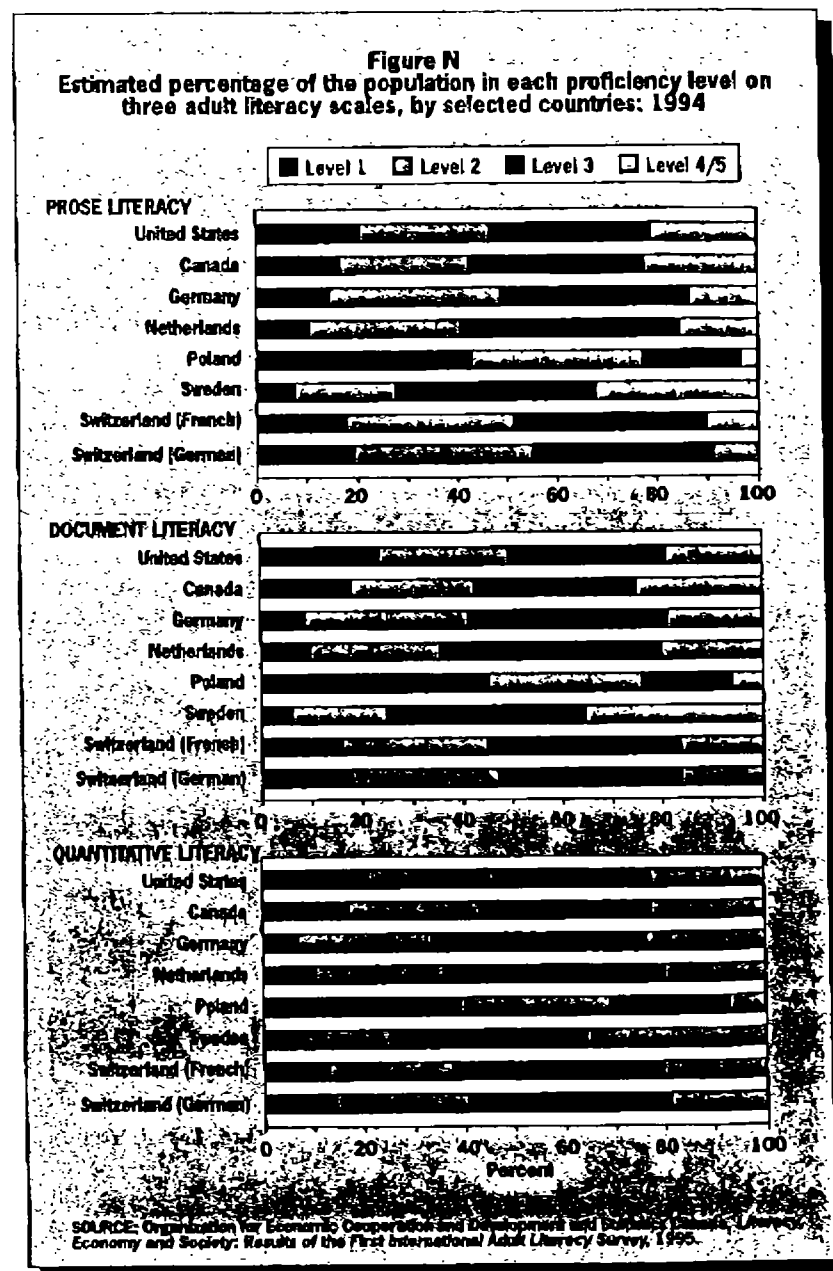
Forty percent or more of the adult labor force perform at the two lowest levels on each of the literacy scales, suggesting that many workers lack the skills needed to interpret, integrate, and compare or contrast information using written materials common to the home or workplace (figure M). These workers appear to be unable

to perform the types of tasks typical of certain occupations that demand high skills, such as professional, managerial, technical, high-level sales, skilled clerical, or craft and precision production occupations. Five percent or fewer of U.S. labor force participants score in the highest proficiency levels, demonstrating an ability to perform well on a wide array of literacy tasks.



■ Literacy of the U.S. adult population is, on average, roughly similar to that of populations in other industrialized countries, but the United States has a greater proportion of adults at the lowest literacy levels.

On average, the proportion of the U.S. population in the highest literacy levels is similar to that in the other countries included in an international study of adult literacy (figure N). However, the United States has a higher concentration of adults in the lowest literacy level than nearly all of the other countries. More than 20 percent of the U.S. sample

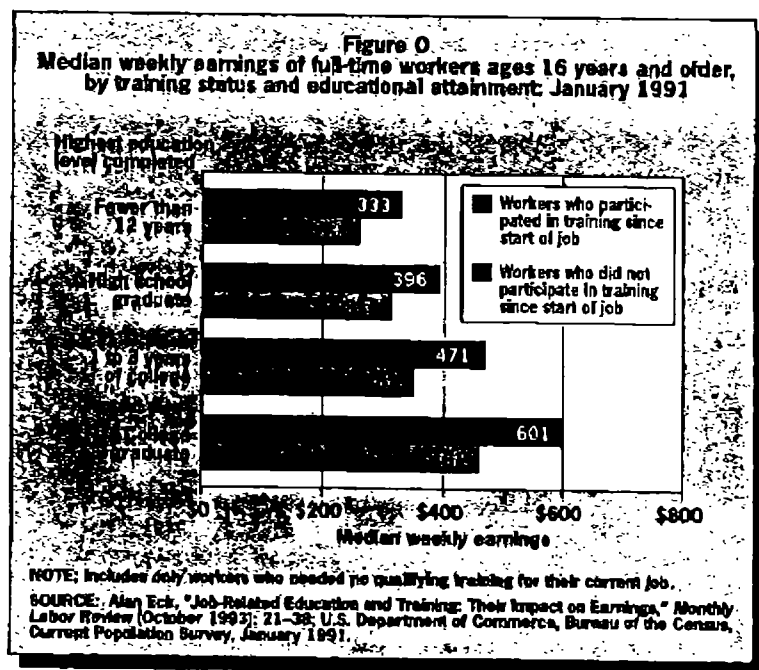


scored at the lowest literacy level on each of the three literacy scales, while the other countries (except Poland) had less than 20 percent of the sampled population scoring at the lowest level on each scale.

TRAINING OF LABOR FORCE PARTICIPANTS

Workers usually complete their formal education before joining the labor force, but investment in human capital does not necessarily end at that time. Through training, many workers continue to improve their skills throughout their lives.

- **Workers who have participated in training while at their current job earn more than workers who have not participated in training.**

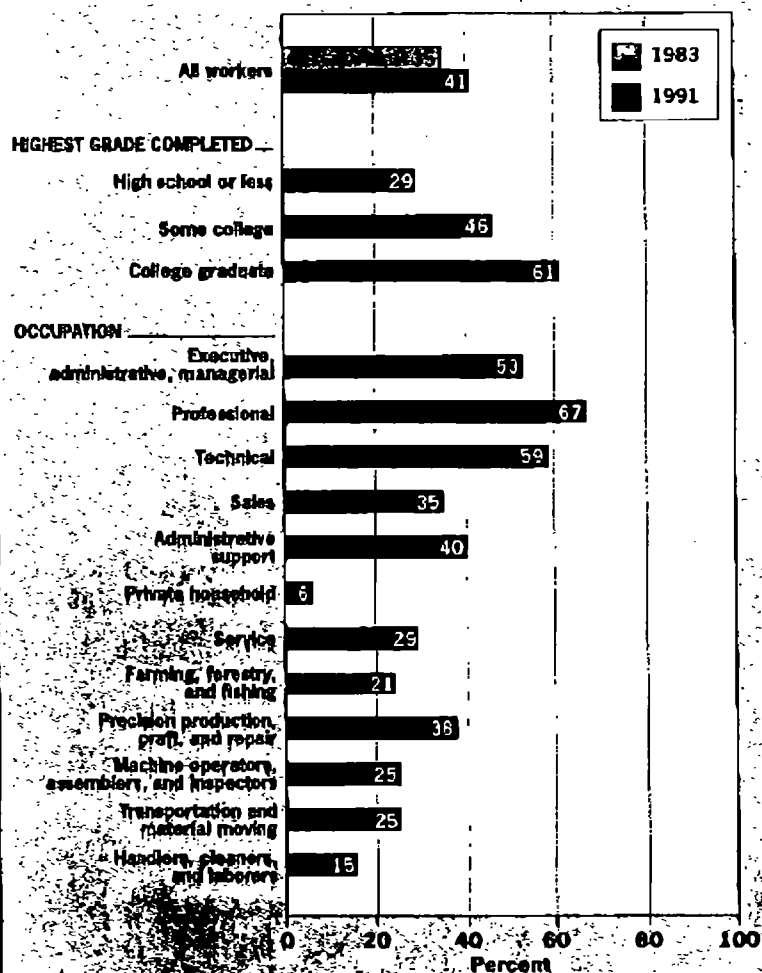


Within broad categories of educational attainment, median earnings in 1991 were higher for workers who participated in training to improve their skills while at their current job than for those workers who did not (figure O). Median weekly earnings were higher for trainees than for nontrainees in each of the educational attainment categories. Studies that examine direct measures of productivity confirm that formal training also has a positive effect on productivity.

- **Training participation has increased in recent years, and it is most prevalent among more highly educated workers and workers in highly skilled occupations.**

An estimated 41 percent of the U.S. work force in 1991 had received skill improvement training on their current job, up from 35 percent in 1983 (figure P). Training is positively associated with education—61 percent of workers with a college degree in 1991 had participated in training on their current job, compared with 29 percent of workers with a high school degree or less and 46 percent of workers with some college. Training also appears to be more common among workers in highly skilled occupations, including managerial, professional, and technical workers. Workers in these occupations in 1991 had training rates of more than 50 percent. In contrast, no other occupation had a training rate of more than 40 percent at that time.

Figure P
All workers ages 16 years and older who participated in skill improvement training while on their current jobs, by education and occupation: 1983 and 1991 (percentage of workers in each category)

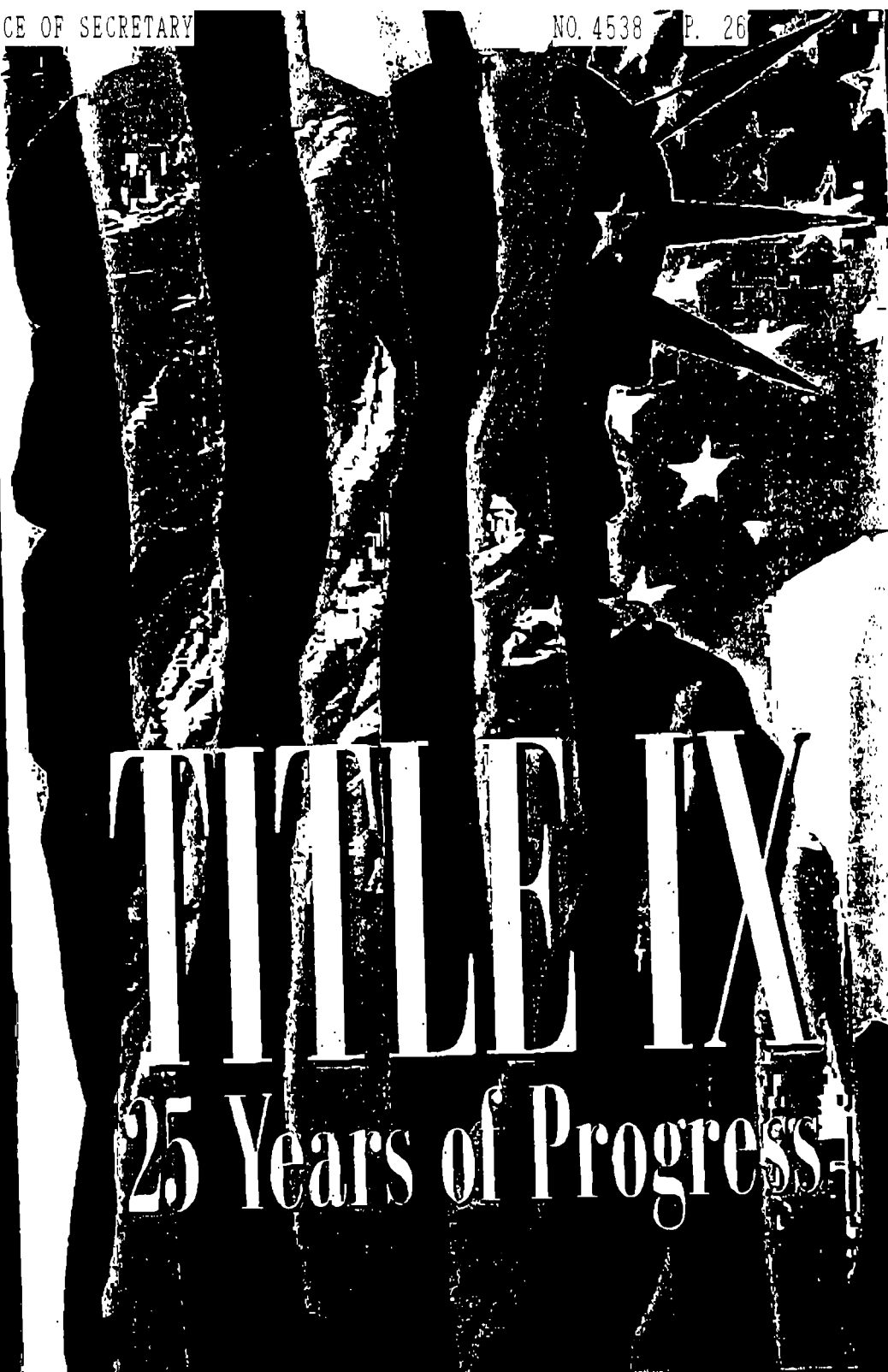


SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *How Workers Get Their Training: A 1991 Update*, 1992; U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, January 1983 and 1991.

SUMMARY

Workers in the United States are still more productive, on average, than workers in any other country. However, worker productivity in several industrialized countries is gradually catching up to that in the United States, and eventually the United States is likely to share the lead in worker productivity. This convergence in productivity is attributable, in part, to the rapid expansion of education in other countries. The education of the work force, according to at least some measures that contribute to economic success, is growing more rapidly in other countries than in the United States. But education is not the only determinant of worker productivity, and other factors no doubt have also played important roles in the rapid productivity growth in other countries.

Although the United States leads almost every other industrialized country in college attainment, and the academic achievement of U.S. students has been improving in recent years, U.S. students still tend to lag behind students in other countries with respect to some measures of achievement. In particular, the mathematics and science scores of U.S. students, especially older students, are lower than those of their counterparts in other industrialized countries. U.S. students do, however, perform relatively well on reading tests. Adults in the United States may not be as skilled in some areas as their counterparts in other countries. Compared to other countries that have tested literacy, the United States has a higher concentration of adults who score at the lowest literacy levels.



TITLE IX

25 Years of Progress

men in gaining a decent wage, and only one-third of all intercollegiate athletic scholarships are granted to women. Clearly, much more remains to be done to ensure that every American is given an equal opportunity to achieve success without encountering the obstacle of gender bias.

But of this I am sure: somewhere in America today there are young women who are studying hard and achieving success on the athletic field who even now may be thinking hard about their careers as scientists, business owners, basketball players, or even the possibility of becoming president of the United States. They may not know of the existence of Title IX, but Title IX will be there for them should any of them encounter a skeptic who does not believe that they can succeed and be part of the American Dream.

Richard W. Riley
U.S. Secretary of Education

Indicators of Progress Toward Equal Educational Opportunity Since Title IX

College Enrollment and Completion:

- ★ In 1994, 63 percent of female high school graduates aged 16-24 were enrolled in college, up 20 percentage points from 43 percent in 1973.
- ★ In 1994, 27 percent of both men and women had earned a bachelor's degree. In 1971, 18 percent of young women and 26 percent of young men had completed four or more years of college.

Graduate and Professional Degrees:

- ★ In 1994, women received 38 percent of medical degrees. When Title IX was enacted in 1972, only 9 percent of medical degrees went to women.
- ★ In 1994 women earned 38 percent of dental degrees, whereas in 1972 they earned only 1 percent of them.
- ★ In 1994 women accounted for 43 percent of law degrees, up from 7 percent in 1972.
- ★ In 1993-94, 44 percent of all doctoral degrees awarded to U.S. citizens went to women, up from only 25 percent in 1977.

Participation in Athletics:

- ★ Today, more than 100,000 women participate in intercollegiate athletics—a fourfold increase since 1971.
- ★ In 1995, women comprised 37 percent of college student athletes, compared to 15 percent in 1972.

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★ In 1996, 2.4 million high school girls represented 39 percent of all high school athletes, compared to only 300,000 or 7.5 percent in 1971. This represents an eightfold increase.

★ Women won a record 19 Olympic medals in the 1996 Summer Olympic Games.

International Comparisons:

★ In the United States, 87 percent of women 25-34 years old had completed high school in 1992, far more than their counterparts in West Germany, the United Kingdom, France, Italy, and Canada.

★ In the United States in 1992, 23 percent of women 25-34 years old had completed higher education degrees, which is significantly higher than for women in France and Japan (12 percent each), the United Kingdom and West Germany (11 percent each), or Italy (7 percent).

Legislation:

In addition to Title IX, three pieces of supporting and related legislation have been enacted:

★ The Women's Educational Equity Act of 1974 provides for federal financial and technical support to local efforts to remove barriers for females in all areas of education through, for example, the development of model programs, training, and research.

★ Title IV of the Civil Rights Act of 1964 provides for support to schools to comply with the mandate for nondiscrimination by providing funds for regional Desegregation Assistance Centers and grants to state education departments for providing more equitable education to students.

★ The 1976 amendments to the Vocational Education Act of 1963 require states to act affirmatively to eliminate sex bias, stereotyping, and discrimination in vocational education.

Title IX:

A Sea Change in Gender Equity in Education

Athletic competition builds character in our boys. We do not need that kind of character in our girls.—Connecticut judge, 1971

No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational programs or activity receiving federal financial assistance.—From the preamble to Title IX of the Education Amendments of 1972

Civil rights laws have historically been a powerful mechanism for effecting social change in the United States. They represent a national commitment to end discrimination and establish a mandate to bring the excluded into the mainstream. These laws ensure that the federal government delivers on the Constitution's promise of equal opportunity so that every individual has the right to develop his or her talents.

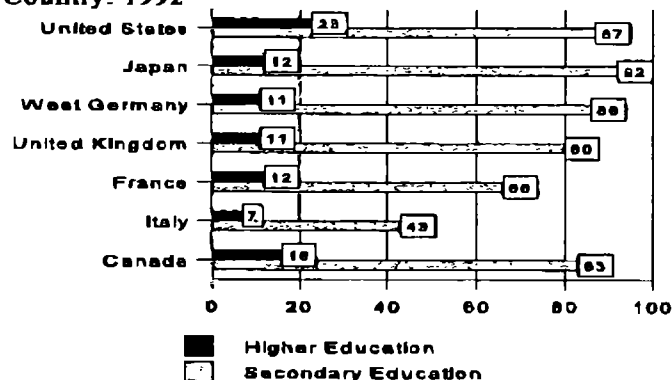
Title IX of the Education Amendments of 1972 bolsters this national agenda and prohibits sex discrimination in federally assisted education programs. Modeled on Title VI of the Civil Rights Act of 1964 prohibiting race, color, and national origin discrimination, it was followed by three other pieces of civil rights legislation: Section 504 of the Rehabilitation Act of 1973 prohibiting disability discrimination; the Age Discrimination Act of 1975; and Title II of the Americans with Disabilities Act of 1990 prohibiting disability discrimination by public entities.

Twenty-five years after the passage of Title IX, we recognize and celebrate the profound changes this legislation has helped bring about in American education and the resulting improvements in the educational and related job opportunities for millions of young Americans. While no definitive study has been done on the full

impact of Title IX, this "snapshot" report suggests that Title IX has made a positive difference in the lives of many Americans.

Substantial progress has been made, for example, in overcoming the education gap that existed between men and women in completing four years of college. In 1971, 18 percent of female high school graduates were completing at least four years of college compared to 26 percent of their male peers. Today, that education gap no longer exists. **Women now make up the majority of students in America's colleges and universities in addition to making up the majority of those receiving master's degrees. Women are also entering business and law schools in record numbers. Indeed, the United States stands alone and is a world leader in opening the doors of higher education to women.**

Figure 1.—Percentage of 25- to 34-Year-Old Females Completing Secondary and Higher Education, by Country: 1992



SOURCE: Organization for Educational and Cultural Development (OECD), *Indicators of Education Systems, OECD Education Statistics, 1985-1992*.

As this report makes clear, many barriers have been brought down that once prevented girls and women from choosing the educational opportunities and careers they would have liked to pursue. The history of this progress begins 25 years ago with the passage of Title IX.

The Legislative Road to Title IX

As the women's civil rights movement gained momentum in the late 1960s and early 1970s, Americans began to focus attention on inequities that inhibited the progress of women and girls in education. The issue of sex bias in education moved into the public policy realm when Representative Edith Green (Ohio) introduced a higher education bill with provisions regarding sex equity. The hearings that Green held were the first ever devoted to this topic and are considered the first legislative step toward the enactment of Title IX.

Women Not Admitted

Virginia state law prohibited women from being admitted to the College of Arts and Sciences of the University of Virginia, the most highly rated public institution of higher education in the state. It was only under court order in 1970 that the first woman was admitted. —*Kirstein v. Rector and Visitors of University of Virginia*, 309 F.Supp. 184 (E.D. Va. 1970).

Congressional activity on the issue increased, and in 1971 several education bills that included sex discrimination proposals were introduced in the House. In the Senate, amendments by Senators Birch Bayh (Indiana) and George McGovern (South Dakota) to an omnibus education proposal outlawed sex discrimination in higher education programs. In total, five proposals—all different—in the House, Senate, and White House proposed to end sex discrimination in education. Although there was growing agreement that sex discrimination in education should end, there was little agreement to the best methods for reaching that goal. It took a House-Senate Conference Committee several months to settle on the more than 250 differences between the House and Senate education bills, 11 of which spoke to sex discrimination. The final legislation—the provision against sex discrimination—became Title IX.

Married Women Not Wanted

Luci Baines Johnson, the daughter of President Lyndon Johnson, was refused readmission to Georgetown University's school of nursing after her marriage: in 1966, the school did not permit married women to be students.

Title IX was adopted by the Conference Committee and sent to the full Senate, which approved it on May 22, 1972. It then went to the House, and was passed on June 8. President Nixon signed Title IX on June 23, and on July 1 it went into effect. While developing the implementing regulations for Title IX, the then-U.S. Department of Health, Education and Welfare (HEW) received more than 9,700 comments. The final regulations were published on July 20, 1974. President Gerald Ford signed the Title IX regulations on May 27, 1975 and they were then submitted to Congress for review.

Everyone Benefits from Title IX

Title IX prohibits institutions that receive federal funding from practicing gender discrimination in educational programs or activities. Because almost all schools receive federal funds, Title IX applies to nearly everyone. The Office for Civil Rights in the U.S. Department of Education is charged with enforcing the civil rights and regulations in education, extending protection to:

- about 57 million elementary and secondary school students;
- about 14 million college and university students;
- almost 15,000 school districts;
- more than 3,000 colleges and universities;
- more than 5,000 proprietary schools; and
- thousands of libraries, museums, vocational rehabilitation agencies, and correctional facilities.

Achieving Success Under Title IX

Title IX, as a landmark civil rights law, profoundly affects all aspects of schooling by requiring equal opportunity for females and males. By extension, it also affects equity in the labor market. The following highlights suggest many of the significant developments in gender equity that can be linked to Title IX.

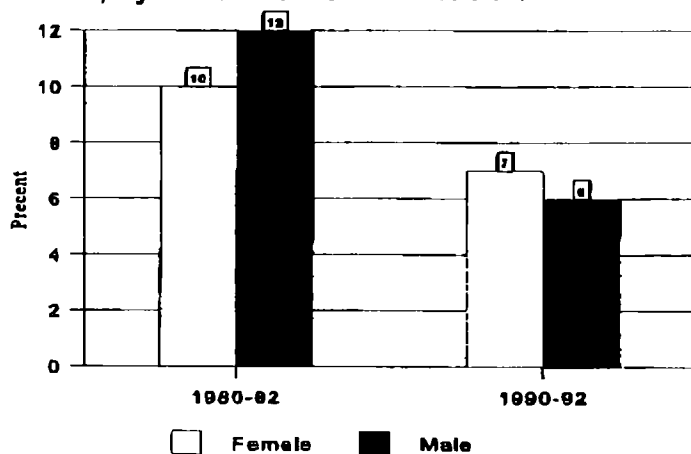
Changing Expectations

Since its passage in 1972, Title IX has had a profound impact on helping to change attitudes, assumptions and behavior and, consequently, our understanding about how sexual stereotypes can limit educational opportunities. We now know, for example, that gender is a poor predictor of one's interests, proficiency in academic subjects, or athletic ability. As the First Circuit Court of Appeals noted in a recent Title IX case, "interest and ability rarely develop in a vacuum; they evolve as a function of opportunity and experience." Decision making in schools and in the labor market that relies on gender to assess what students and employees know and are able to do is both archaic and ineffective.

Lowering the dropout rate

Title IX has played a part in lowering the dropout rate among high school females who become pregnant or have a child. The law prohibits schools from suspending, expelling, or discriminating against them in educational programs and activities due to their status as mothers. In addition, because becoming pregnant and having a child while in high school correlate strongly with dropping out of school, many school districts have opened alternative schools for this population to help them persist in school and graduate. The results are very positive: although the childbearing rates rose between 1980 and 1990 from fewer than 1 percent to 2.5 percent, dropout rates declined 30 percent during the same period, precisely at a time when graduation requirements were raised.

Figure 2.—Dropout Rates for Grades Ten to Twelve, by Sex: 1980-82 and 1990-92



SOURCE: National Center for Education Statistics, *A Comparison of High School Dropout Rates in 1982 and 1992*, Table 9.

Teenage Mother Allowed to Graduate

A parent in the Chicago area contacted the U.S. Department of Education's Office for Civil Rights (OCR) when her teenage daughter—who had given birth earlier in the year—was denied the opportunity to take a final examination because the teacher disapproved of the girl's pregnancy and her excused absences from school due to childbirth. Without a grade on the final exam, the student would not be allowed to graduate. OCR contacted the school district and received assurance that the student could take her exam. She did, and received her diploma.

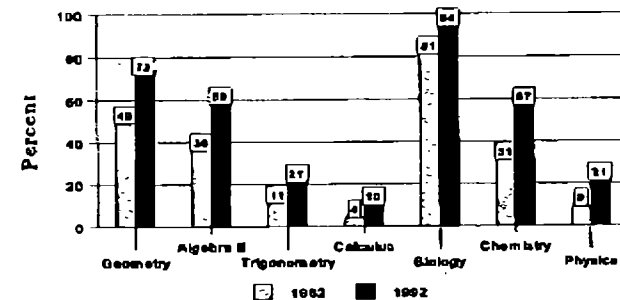
Increasing the opportunities in math and science

The United States is among only 11 of 41 countries in the recently released Third International Math and Science Study with no gender gap in grade 8 mathematics and science. A gender gap still exists, however, in science achievement at the 12th-grade level for females. According to the National Center for Education Statistics, males

were more likely than females to increase their science proficiency level between the 8th and 12th grades, by 56 and 51 percent respectively.

Overall, both male and female students were more likely to take more sophisticated mathematics courses by 1992 than they were in 1982, with females less likely than males to take remedial mathematics, more likely to take algebra II, and just as likely to take trigonometry and calculus. The same is true for advanced science courses, with females more likely than males to study biology and just as likely to take chemistry, and boys more likely to study physics.

Figure 3.—Percentage of High School Female Graduates Taking Selected Mathematics and Science Courses: 1982 and 1992



SOURCE: National Center for Education Statistics, *The 1990 High School Transcript Study Tabulations 1993*, based on *The High School and Beyond Transcript Study* and the *National Education Longitudinal Study (NELS: 88) Transcript*, 1992.

In 1994, 68 percent of females took algebra, 70 percent took geometry, and 9 percent took calculus—similar to the percentage of males taking those courses. In the same year, 95 percent of females took biology and 59 percent took chemistry—higher than the rates 92 and 53 percent, respectively, for their male classmates.

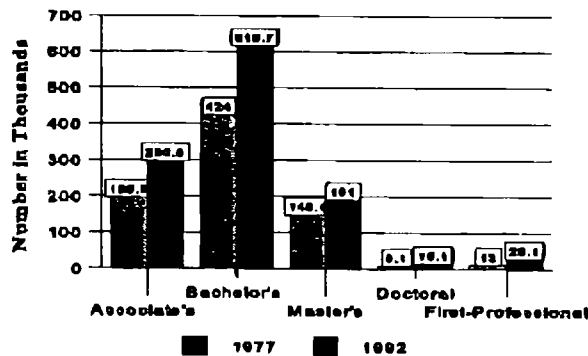
In college, many more women are majoring in math, as evidenced by the proportion of undergraduate degrees in math awarded to women: 47 percent in 1992, compared to 27 percent in 1962. This may be result of the advances made in their preparation in high school in math and science during the decade 1982-1992, as shown in figure 3.

Increasing the completion of postsecondary, graduate and professional degrees

Women are now graduating from college in record numbers and, for the first time in America's history, their numbers are proportionate to those of men: by 1994, women were earning bachelor's degrees at the same rate as men, with both at 27 percent. In 1971, however, only 18 percent of young women had completed four or more years of college compared to 26 percent of young men. By 2006, women are projected to earn 55 percent of all bachelor's degrees.

In 1992, women also earned the majority of associate's (296,800) and master's degrees (191,000), reversing the 1977 pattern of men earning the majority of them (207,500 and 161,800, respectively).

Figure 4.—Number of Degrees Conferred on Females by Institutions of Higher Education: 1977 and 1992



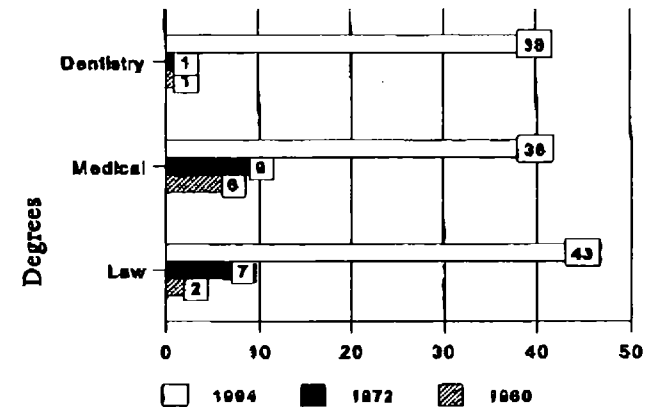
SOURCE: National Center for Education Statistics, *Digest of Education Statistics 1994*, Table 234.

Between 1977 and 1994, the number of U.S. women earning doctoral degrees almost doubled, from just over 7,500 to almost 14,000. This represents a jump from 25 percent in 1977 to 44 percent in 1994 of total doctoral degrees conferred.

During the period 1972–1994, the percentage of first-professional degrees earned by women also rose dramatically: from 7 percent to 43 percent of all law degrees; from 9 percent to 38 percent of all

medical degrees; and from 1 percent to 38 percent of all dental degrees. In veterinary science and pharmacy, women earned the majority of degrees in 1994.

Figure 5.—Percentage of First-Professional Degrees Conferred on Women, by Year



SOURCE: National Center for Education Statistics, *Digest of Education Statistics 1996*, Table 254.

In certain nontraditional areas such as business, women's degrees increased dramatically, from 8 percent in 1962 to 47 percent in 1992. This development in particular is expected to have a profound impact on women's earnings potential: women who choose careers in nontraditional fields can expect to have lifetime earnings that are as much as 150 percent of those of women who choose careers in traditional fields.

"My personal experience has shown me that while the situation for women in science in the United States is by no means perfect, it is the best one in this world of ours."—Dominique Homberger, Swiss-born professor of zoology, Louisiana State University

Women are also increasing the number of science classes they take in college. In the biological sciences, for example, women earned only

28 percent of college degrees in 1962 but increased their proportion to 52 percent by 1992. The gap between men's and women's master's degrees in the life sciences, physical sciences, engineering and computer sciences has also narrowed over time. In 1950, only 175 women received bachelor's degrees in engineering—compared to more than 52,000 men. By 1966, women were earning a greater number of engineering degrees, but the proportion of the total was still less than one-half of 1 percent. By 1991, it had risen to more than 15 percent.

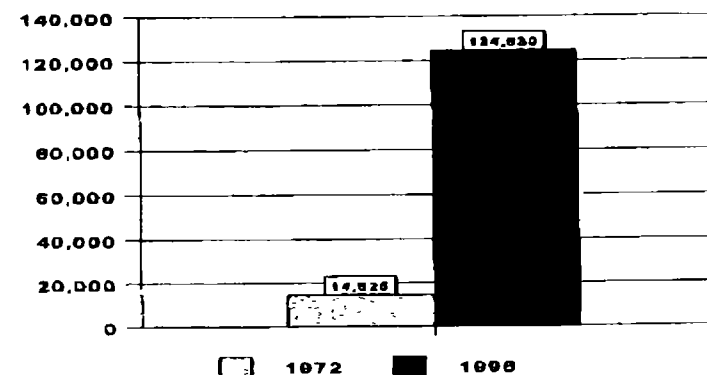
As the number of women who study the sciences increases, so does the proportion of women who receive graduate degrees in those fields. In 1993, women earned 20 percent of doctorates in science and engineering, up from less than 9 percent in 1973. At all levels—bachelor's, master's and doctoral—women's rates of receiving degrees have risen significantly in the fields of mathematical, physical, and biological sciences and engineering.

Opening up the professions and opportunities for employment

The many gains that have been made in giving women new opportunities to advance their education have had and continue to have a direct impact in opening up the professions and giving women the opportunity to seek employment in nontraditional fields. In 1993-94, women made up 58 percent of postsecondary vocational education students.

Women have also made significant inroads in speciality fields. For example, the proportion of women gynecologists/obstetricians rose from 8 percent in 1970 to 39 percent in 1995, an increase similar to increases in their numbers in the field of medicine overall. Just as medical schools had discouraged young women from admission, so had some nursing schools discouraged young men. In 1972, the rate of men graduating with nursing degrees was only 1 percent. In 1996, the rate rose to 5 percent.

Figure 6.—Number of Men in Nursing: 1972 and 1996



SOURCE: American Nurses Association 1972 Inventory of Registered Nurses, "Nations Nurses," National Sample Survey of Registered Nurses, March 1996, unpublished.

Increasing participation in athletics

Title IX has helped girls and women participate in interscholastic and intercollegiate athletics in far greater numbers than they had in the past. When Title IX became law, dramatic change was needed to level the playing fields of this nation's schools and to change the perception of the place of girls and women on them. Just one year before the enactment of Title IX, in 1971, a Connecticut judge was allowed by law to disallow girls from competing on a boys' high school cross country team even though there was no girls' team at the school. And that same year, fewer than 300,000 high school girls played interscholastic sports. Today, that number is 2.4 million.

The rise of women's basketball is illustrative of the dramatic changes that have taken place since the enactment of Title IX. In 1972, 132,299 young girls played high school basketball. In 1994-95 the number had increased to 412,576, an increase of over 300 percent. the last two years, women's basketball has come of age with the gold-medal victory of the American women's basketball team at the 1996 Olympics, the increased media attention to the NCAA women's basketball tournament, and the development of two professional women's basketball leagues.

district agreed to place the student in another district and to pay all related costs including \$2,000 for counseling fees.

In another school district, several female high school students turned to the Office for Civil Rights for help in stopping sexually harassing threats and comments that occurred for a three-year period. As is typical in these types of cases, one female student had developed ulcers and other problems due to continual stress. As a result of Title IX the school district developed disciplinary guidelines to address sexual harassment of students.

Other conditions that inhibit equal opportunity in education and the workplace remain:

- ▶ Although women earn half of all college degrees, they are less likely than men to earn bachelor's degrees in computer science, engineering, physical sciences, or mathematics. At still higher levels of education, they account for only 17 percent of doctoral degrees in math and physical science, 14 percent of doctoral degrees in computer science and 7 percent of doctoral degrees in engineering. This gap takes on more significance still in the labor market where salaries are among the highest in mathematics/computer science and engineering—fields in which women are underrepresented. Without more equity in these fields at all levels, women will remain at the low end of positions and the pay scale in the information age.
- ▶ At the high school level, there are still about 24,000 more boys' varsity teams than girls' teams; in college, women receive only one-third of all athletic scholarships; and, between 1992 and 1997, overall operating expenditures for women's college sports programs grew only 89 percent, compared to 139 percent for men, representing only 23 percent of the total operating expenses.
- ▶ Even though women make up half of the labor market, not only are they underrepresented in jobs in scientific fields, but they are often paid less than men. In 1993, only 18 percent of

employed recent female science and engineering graduates worked in science and engineering occupations, compared to 35 percent of their male counterparts. In the same year, women who had majored in the natural sciences earned 15 percent less than men who majored in the same field.

- ▶ Despite women's large gains toward equal educational attainment and their accompanying gains in labor force participation, their earnings are only 80 percent of the earnings of their male counterparts with the same education—\$26,000 vs \$32,000, respectively, for graduates of four-year colleges in 1993.

President Clinton frequently reminds us that "We do not have a person to waste" if we are to ensure the well-being of our people and the competitiveness of the nation. Twenty-five years ago, America began the long process of eradicating discrimination based on gender and has since moved forward. There have been peaks and valleys in this process, and we cannot ignore the reality that inequality and discrimination still remain here in 1997.

Yet, the American people have never turned away from the goal of making sure that all Americans, regardless of gender, are given an equal opportunity to get a good education, to compete in the athletic arena, and to work in a job or a profession for which they are well qualified. Title IX, today and in the future, represents and reflects this American commitment to equality.



UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF THE SECRETARY

FAX TRANSMITTAL

TO Michael Waldman
Speedchump

PHONE _____ FAX _____

FROM Kevin SullivanPHONE 401-0831 FAX 202-401-0596PAGE(S) TO FOLLOW 4MESSAGE: FatherhoodLanguage by R. Key
Birth ReportCONFIDENTIALITY NOTICE

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Our mission is to ensure equal access to education and to promote educational excellence throughout the Nation.

**Statement of
U.S. Secretary of Education
Richard W. Riley**

**Fathers Involvement in their Children's Education
October 2, 1997**

Good afternoon. A little over an hour ago, Mr. Vice President, the National Center for Education Statistics released an important report entitled, "*Father's Involvement in Their Children's Education*." This report based on a survey of almost 17,000 parents and guardians tells us very directly that America's Dads still have a lot to do when it comes to their children's education.

As you know, Mr. Vice President, the President, the First Lady, Tipper and many others in Administration have all been visiting schools as part of our annual "America Goes Back to School" Campaign. You were in Chicago just last Monday. All of us -- and the many other Americans who have joined us in this Back to School effort -- have time and again emphasized the powerful role that mothers and fathers can play together as full and equal partners in their children's education.

This report is a timely reminder that this is the right message for America's children. The report gives us some very important insights into the powerful and positive role that father's can play in advancing their children's education. Let me highlight a few of these findings for you.

First, this report tells us that when Dads get involved in their children's schools good things start to happen. They raise expectations, their children get more A's, and children are less likely to repeat a grade. Dads -- regardless of income, race or level of education -- make a powerful difference. Dad's count.

But dads, as the report notes, are still not as involved as mothers when it comes to their children's education in two-parent families. By an almost two-to-one margin, 56 percent to 27 percent, America's moms are still doing the heavy lifting when it comes to their children education -- showing up at PTA meetings, volunteering to go on field trips and being connected to their children's daily school life.

So my message to many of America's fathers is very simple -- if men are going to be good dads then we need to do some of the heavy lifting and lift up our children and grandchildren so that they shine academically. If America's dads got as involved as America's moms in their children's education, America's children would be studying harder and getting a lot more A's. Dads make a powerful difference in defining expectations and challenging children to do their best.

A third important set of findings is that single dads do a good job when it comes to raising their children. Single dads are as involved as single moms when it comes to their children's education.

Dads who stay connected -- who show up -- reap the rewards when it comes to good report cards. Children want to know that what they do is valued and for most children going to school is what they do the most. So when children see their dads and moms caring about their education they get the message that going to school really matters and they respond.

Unfortunately, the great majority dads who aren't living with their children -- 82 percent-- check out when it comes to their children's education. This report tells us in the most direct way that when they 'check in' it makes a powerful difference in their children's lives. This is so important when we realize that " more than one- half of the children born in 1992 will spend all or part of their childhood away from one parent, usually their fathers."

This is why I urge America's schools to redouble their efforts to reach out to mothers and fathers and to make an extra effort to reach out to non-custodial dads when it comes to their children's education.

Mr. Vice President, all of these findings should get us thinking about what we are doing as men and as fathers. I have four children like you and eight grandchildren. You don't have any grandchildren yet. We are both very fortunate and we both have wonderful wives. I also know that the subject of fatherhood is something that has always been an important part of your thinking even before it became popular.

Your Family Reunion three years ago was totally devoted to issues of fatherhood. That conference led President Clinton to issue a memorandum in 1995 encouraging all federal agencies to review their programs and policies to help men be better fathers. And next month you will be hosting a tele-conference on helping teachers and principals reach out to parents.

How to be a good father is a subject that you care deeply about And your work has inspired many more Americans to 'tune in' to the issue of how to be a good dad. So I take great pleasure in introducing an outstanding Vice President of the United States, a caring husband and a dedicated and involved father -- Al Gore.



UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF THE SECRETARY

FAX TRANSMITTAL

TO: LUARA Capps

ORGANIZATION: Speechwriting

PHONE NUMBER: _____

FAX NUMBER: _____

FROM: Kevin Sullivan

PHONE NUMBER: 401-0831

MESSAGE: more stuff - see ★

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7 PAGE(S) TO FOLLOW

Quality Education: School Reform for the New American Economy

Executive Summary

**Anthony P. Carnevale
and
Jeffrey D. Porro**

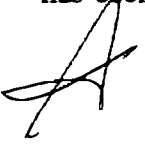
**Prepared Under Contract by:
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**U.S. Department of Education
Office of Educational Research and Improvement
1994**

- ◆ High-performance work systems require labor/management collaboration.
- ◆ The relationship between unions and management is more important in education than in most American industries because high proportions of school employees belong to unions.
- ◆ In 1991, 16.1 percent of American workers belonged to unions,⁷ but 85 percent of teachers worked under collective bargaining agreements negotiated through unions.⁸ No significant change in schools will be possible unless the unions are involved. Unfortunately, unlike collective bargaining in private industry, most unions and school districts still negotiate over a relatively narrow package of items.

Maintaining the Economic Returns to Education

Education has always been good for employers. The contribution of education to economic growth has been consistent and flattering.

- 
- ◆ Between 1948 and 1973, almost a fifth of the nation's growth in GNP was due to increased access to education for a growing share of Americans.
 - ◆ Education consistently outperformed machine capital in its contribution to GNP growth throughout the period.
 -  ◆ In the period between 1973 and 1981, when productivity growth mysteriously stalled and declined, increased access to education avoided an even more precipitous fall, increasing its impact from 25 percent to more than 30 percent of the positive factors pushing productivity upward.
 - ◆ Since the 1980s, increasing access to education continues to equal or outshine plant and equipment investment as the preeminent measured factor driving the nation's economic performance.

Education is good for American employers in four other respects:

- (1) Education bears the principle responsibility for codifying, husbanding and disseminating knowledge that ultimately results in the creation of the next machine or the next product. Machines, after all, are human artifacts.
- (2) Increased years of schooling correlate positively with a stronger work ethic.
- (3) Educators are major providers of job-related skills. According to the Bureau of Labor Statistics, one-third of all workers who needed preparation for their jobs got some or all of that preparation from schools, and 13 percent who needed skill improvement after they were on the job said they got some or all of that retraining from schools.⁶

- (4) Because of the proven relationship between educational attainment, work ethic and skill, employers always have utilized educational attainment as a sorting device to help them choose among job seekers.

Education has been good for enhancing economic opportunity for students as well.

- ◆ The best educated among us tend to get the best jobs and earn the most money,⁷ especially those who are most educated in technical and business curricula.⁸
- ◆ In recent times, education has leveraged higher earnings, except in the later 1970s when a variety of factors, including a glut of well-educated baby boomers, slowed earnings returns to education.
- ◆ But the relationship between education and earnings accelerated again in the 1980s, more than doubling the economic returns to college relative to high school degrees. The real hourly wages of young males with 12 or fewer years of school dropped by about 20 percent from 1979 to 1989.⁹ But real wages rose 20 percent during the 1980s for males who graduated from college.¹⁰ Overall, one analyst concluded, "The wage premium for college was more than 100 percent larger for men and more than 50 percent higher for women in 1988 than in 1980."¹¹

A

The continuing contributions of education to the economic partnership with American employers also depends on the educators' ability both to continue to produce traditional quantity increases in access to education and to meet new quality standards. The historical economic contribution of American education has resulted principally from increased access to schooling, especially in elementary and secondary education. Currently more than 86 percent of Americans complete high school by age 34. America's high school graduation rate places third among the major industrial nations compared with a high school completion rate of 90.6 percent and 91.5 percent in Japan and Germany, respectively.¹² Yet, even these statistics understate our successes because many of our adults who did not complete high school are not dropouts but adult immigrants who never went to school at all. Although we can still do better, as a greater proportion of people eventually graduate from high school, sheer quantity increases in high school graduation will bring diminishing returns. Moreover, marginal increases in high school graduation become increasingly difficult and expensive as an increasing share of those who do not have high school degrees come from populations that are hard to reach or hard to educate.

As quantity increases in K-12 education become more difficult, an increasing share of the economic contributions from K-12 systems will have to come from quality improvements. The greatest potential for quality improvements resides in improving educational offerings for the non-college-bound youth. These students who ultimately make the products, deliver the services, and interact with customers face the greatest skill gaps when they arrive in high-performance workplaces that provide nonsupervisory workers with the autonomy and flexible technologies necessary to meet quality standards.

There is still plenty of room to generate economic returns by increasing quantity in pre-school, post-secondary, and adult education and training. Only 36 percent of preschool children receive any formal educational preparation.¹³ Ultimately the ability to perform in high-performance work systems begins with a strong preschool foundation, especially for disadvantaged youths who need a head start in preschool programs in order to catch up with more advantaged children.

There is also plenty of room for quantity increases in access to education after high school. In Switzerland, Germany and the Scandinavian nations more than two-thirds of all young people who do not go to college have access to apprenticeship systems. In the U.S., 24 percent of people between the ages of 18 and 34 start but do not complete college, and only 7 percent get vocational or associate's degrees.¹⁴

There appears to be substantial room for expanding education and training once Americans are on the job. In 1991, only 41 percent of American reported ever having been given either formal or informal education or training on the job. Only 16 percent of Americans have ever been retrained by their employer and only 13 percent of American workers got retraining from a school after they were on the job. European and Japanese employers train three times as many workers as American employers.

Measuring Up To New Skill Standards

Educators face a dual challenge for reform in response to the demands of the new performance standards and the new technologies and organizational formats necessary to meet them. They are challenged to put their own houses in order. Educators, like every other employer organization, need to meet new performance requirements by making better use of new flexible technologies and high performance organizational formats. At the same time, educators need to provide the more highly-skilled workers necessary to meet new performance standards, exploit new technologies and work in high-performance formats throughout the rest of the organizations in the American economy.

The schools have not failed in their economic mission. The mission has changed. American schools are doing about as well as they even have while increasing access to education from pre-school to graduate school. The steady performance of American schools is all the more laudable because increased access to schooling has come at the low end of the income scale among the educationally disadvantaged. But as American businesses have already learned, the old standards are no longer good enough:

- ◆ Economic competition has gone global and American schools have to measure up to the standards of our rivals. Even with all the caveats observed, American schools do not compare well with many of their international counterparts.
- ◆ The Japanese graduate 92.4 percent of their students on time (at age 18), compared to 88 percent in the U.S.,¹⁵ and the average performance of Japanese eighth graders in technical subjects, such as mathematics, outstrips that of American eighth graders.¹⁶
- ◆ In general, the Japanese provide a higher standard of basic academic education for

all students. The Europeans provide more and better education and occupational training for non-college-bound youth and attribute much of their economic success to that fact. In Germany, about 85 percent of non-college-bound youth get an additional three to four years of apprenticeship training beyond high school.¹⁷

- ◆ A 1992 study of the Education Testing Service found that the school performance of the bottom level of students in the United States ranked next to last among fifteen nations studied and was second only to Jordan in disparity between high and low achievers.
- ◆ Standards should not only be higher, they need to be more widely applied. American students tend to know academic subject matter but their inability to apply academic knowledge suggests they do not understand what they know. Available evidence validates the view that while graduates may perform well on standard academic tests, they can not apply the same knowledge effectively in real-world situations.¹⁸
- ◆ New findings in the cognitive sciences suggest that traditional academic pedagogy ignores the value of experiential learning in real-world contexts and encourages passivity in students, ultimately hampering the transfer of academic knowledge into real-world applications.¹⁹
- ◆ School-based abilities are not necessarily the same as work-based abilities. Employers want employees with solid academic basics, but they want the applied versions of the three R's. Applied reading, writing, and math are substantially different from the versions taught in schools. In addition, employers want a set of behavioral skills that are not taught at all in traditional academic curricula, such as problem solving, communication skills, interpersonal skills and leadership.²⁰
- ◆ Standards for all students need to be comparable. In the absence of comparable skill standards, an "A" in one school can be a "B" or "C" in another. A 1993 study by Abt Associates found that an "A" student in a poverty school would be a "C" student in a low poverty school when each student's performance was measured against standardized test scores.

The Increasing Value of Education

Economic changes have greatly increased the value of education. New competitive requirements tend to encourage the utilization of more highly educated employees working in conjunction with more powerful and flexible technologies and work formats. As a result, front line employees with high school plus a few years of postsecondary education tend to substitute for a much larger number of less educated front line workers with high school or less. Moreover, front line workers are supported by an increasing number of highly educated sales, managerial, professional, and technical workers in more elongated "value added chains" necessary in order to provide quality, variety customization, convenience, speed, innovation, and social responsibility in the final value of products and services. Even in manufacturing, which is projected to decline by 518,000 employees by the year 2005, employment of professionals will likely increase by 230,000 jobs.

In the new economic environment, production workers are more highly educated and work with a larger and more educated team to meet new competitive requirements.

- ◆ Front line workers use more autonomy and skill in combination with flexible technology and work processes to produce more per worker. In 1930 the value of output per production worker in manufacturing was \$22,000 compared to an output per shop floor worker of \$60,000 in 1993. Over the same period, the number of shop floor operators as a percent of the labor force has dropped from 27 percent to 15 percent.
- ◆ In order to meet new competitive standards, more highly skilled and productive front line workers are teaming up with a growing number of more highly educated workers. In 1930 for every production employee there were 12 non-production workers in various industries necessary to make the final sale; 4 more blue collar workers in transport; and 8 more highly educated workers in clerical, managerial, professional, and technical functions. Today, for every production worker it takes 21 nonproduction workers to meet new competitive standards. None of the 9 new workers are blue collar and all come from more highly educated sales, managerial, professional, and technical occupations.

The need to meet new standards by installing flexible technologies and high-performance work systems has accelerated basic changes in the structure of occupations favoring jobs that require education beyond high school.

- ◆ Between 1962 and 1992 farmers and production workers as a proportion of the total work force declined by 4 percent and 10 percent respectively. Only 5 percent of the decline in industry and farm jobs was due to increased imports. The vast majority of job losses was due to productivity increases through the installation of new technology and modern work practices.
- ◆ Over the same period, service workers increased by less than 1 percent.
- ◆  Virtually all of the increase in jobs since 1962 occurred among occupations that require college-level literacy and math skills. Sales, clerical, and administrative support workers increased by 6.38 percent. Managers, professionals, and technical workers increased by 7.4 percent.
- ◆ The shift to more highly educated workers was universal among American industries. For instance, today there are more managers, professional, and technical workers in service industries than there are production workers in manufacturing.
- ◆ Over the past decade, the scarcity of skilled workers has pushed up wages of those with postsecondary degrees and an oversupply of less skilled labor has driven down the wages of those with high school diplomas or less. College/high school wage differences doubled during the 1980s.

- ◆ Unemployment rates for college grads are at 3.2 percent compared with 6.8 percent for high school graduates and 11.4 percent for high school dropouts.
- ◆ Between 1992 and the year 2000, 89 percent of the jobs we will create will require postsecondary levels of literacy and math skills while only half the new entrants to the labor force are likely to possess postsecondary literacy and math skill levels. As a result, we should expect to see a continuation of the pattern of a surplus of low-skilled workers and a scarcity among high-skilled workers and an accelerating divergence between the wages of skilled and unskilled workers.
- ◆ Between 1992 and 2000, we will likely create 13.2 million new jobs, while losing about 1.3 million farm jobs and another half million production jobs to modernization and increased productivity.
- ◆ Of the 13.2 million new jobs, only 1.5 million, about 11 percent of new jobs created before the end of the century will come in relatively unskilled service delivery occupations.
- ◆ The remaining 89 percent of the jobs, about 10.7 million, will come in occupations that require postsecondary levels of math and literacy. Among these 5.4 million jobs, about 41 percent of all new jobs, will be created in sales, clerical, and administrative support occupations.
- ◆ The largest share of new jobs will come in managerial, professional, and technical occupations. We will create about 6.3 million such jobs over the period, about 47 percent of all new jobs. Interestingly, more than 80 percent of these new managerial, professional, and technical jobs will be created in service industries.
- ◆ Education barriers have dramatically reduced the ability of "trickle down" from economic growth to improve prospects for less educated workers. Simply increasing demand for more workers does not reduce poverty because the new jobs created require higher skill levels than typically found among poor Americans. For instance, in the 1960s, rapid economic growth reduced poverty rates by 10 percent. In the deficit-financed boom of the 1980s, however, the rising tide of economic growth did not raise all boats. By 1989 poverty had risen by a full 1 percent over the 1979 level.
- ◆ In the 1950s and 1960s, a single production worker with a high school diploma could earn a "family wage" -- enough money to support a spouse and child, buy a car, and own a home. In the 1990s it takes two earners with high school plus two years of postsecondary education to achieve the "family wage."

Integrating Academic and Experiential Learning

Available evidence suggests that the lack of transferability of academic learning into real-world