

Education in Washington State for the 21st century economy

Ed Lazowska

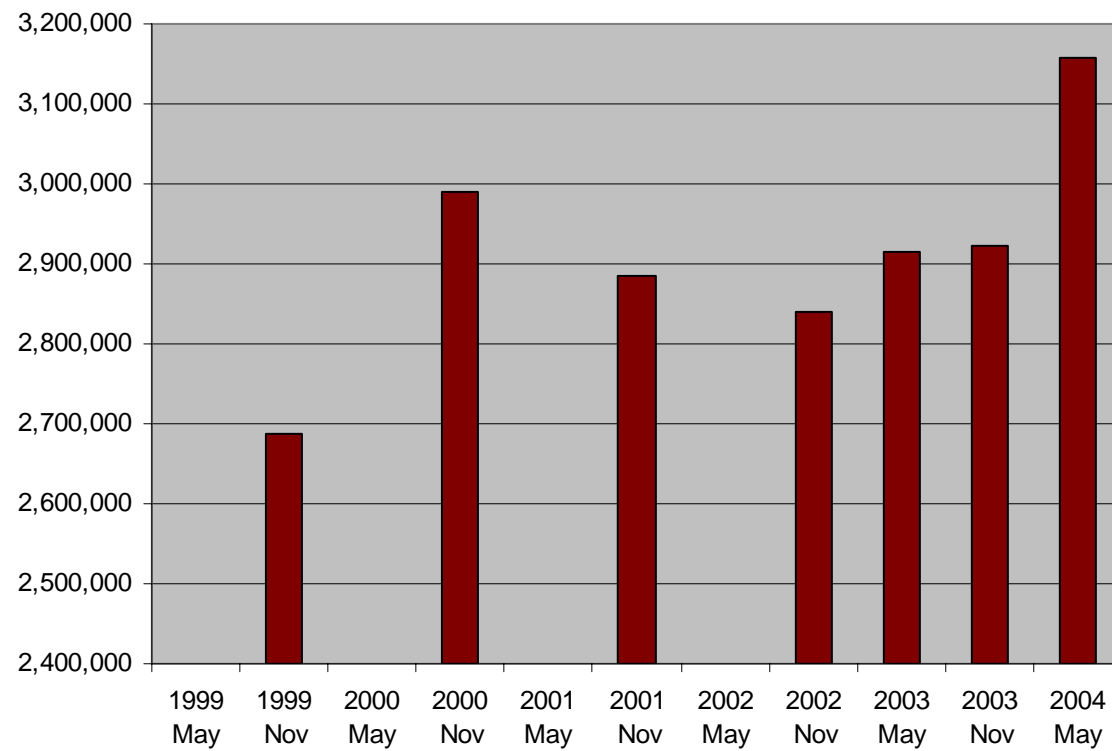
Bill & Melinda Gates Chair in
Computer Science & Engineering
University of Washington

July 2005

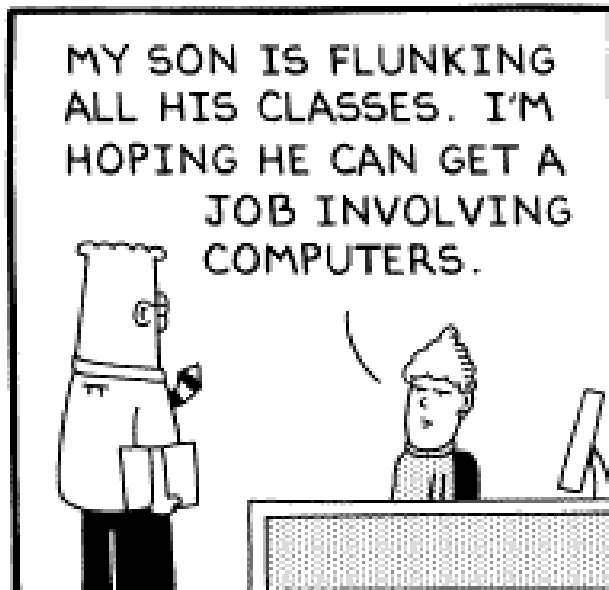


⌘ IT is back!

Total Employment for all Professional-Level IT Occupations
(John Sargent, Technology Administration, US Department of Commerce)




⌘ What kind of education is needed to produce "innovation economy" goods?

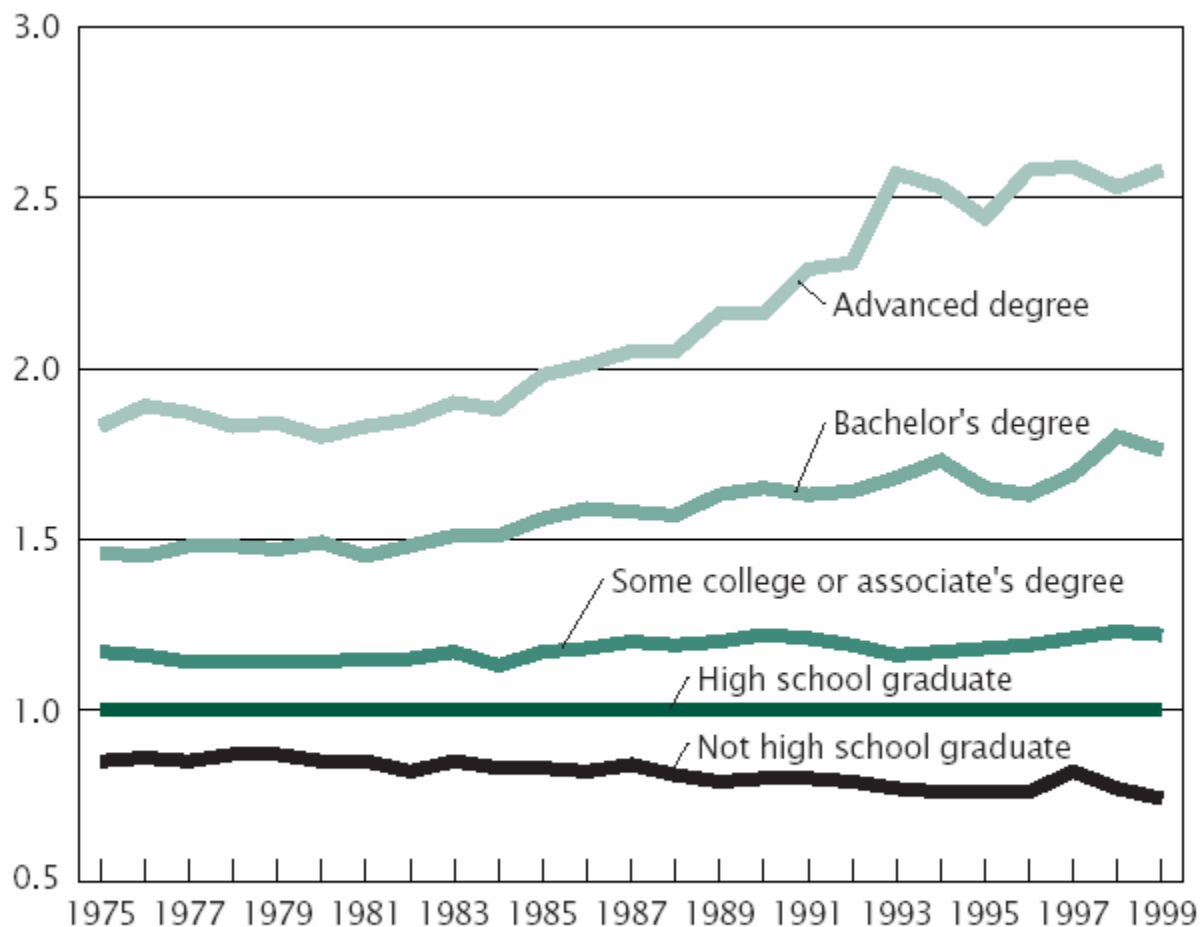


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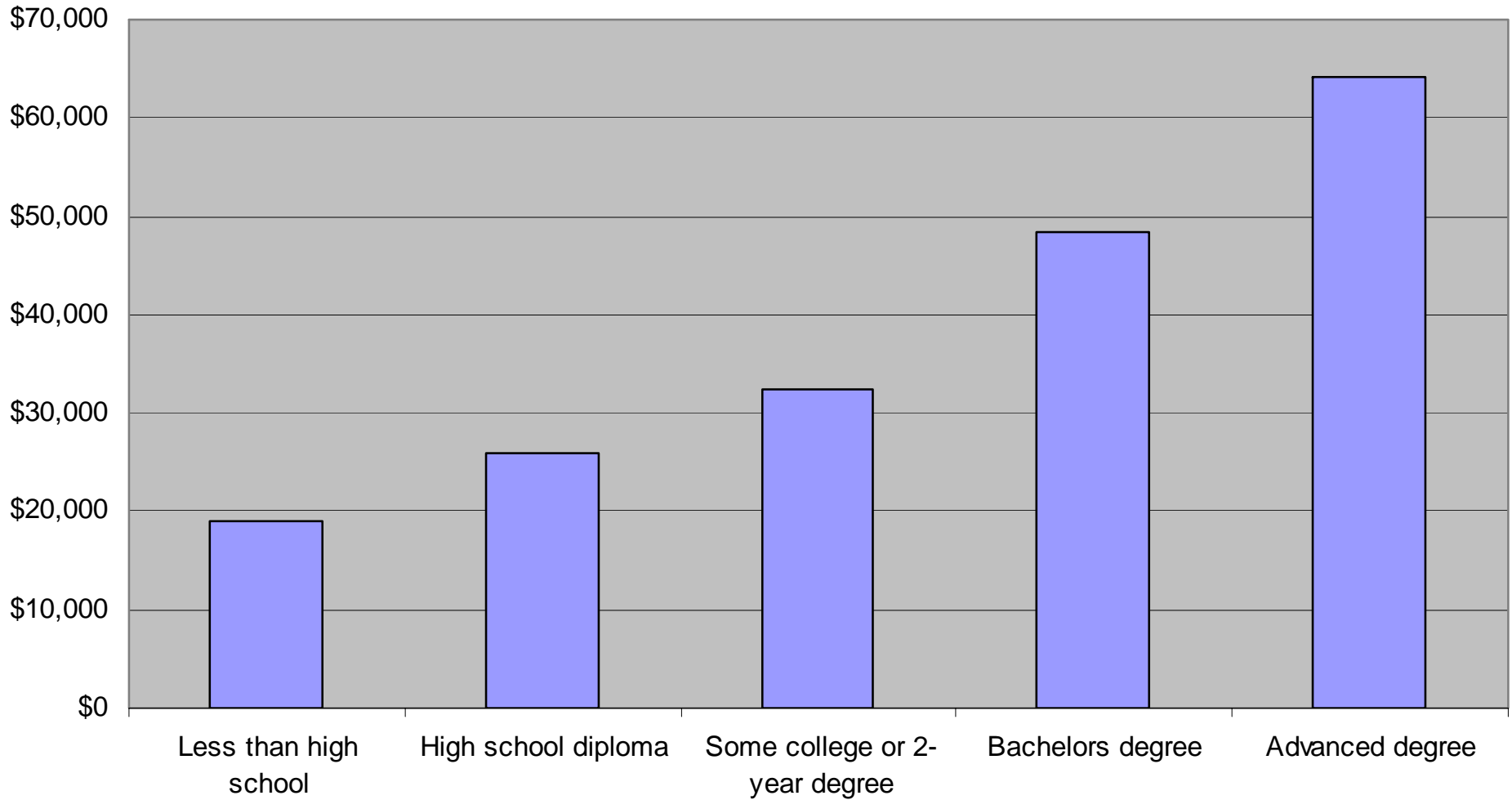
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- ⌘ National and regional studies conclude the 3/4ths of the jobs in IT require a Bachelors degree or greater (and it's highly competitive among those with this credential!)
 - ⌘ In FY05, Microsoft will hire nearly 5,000 people in the U.S.
 - ⊞ 25% new grads, 75% experienced
 - ⊞ 85% "core technical"
 - ⊞ 55% Bachelors, 40% Masters, 5% Ph.D.
 - ⊞ 97% Redmond
 - ⊞ Summer 2005: 932 undergraduate interns, 202 Research (graduate) interns, in Redmond alone

Average Earnings as a Proportion of High School Graduates' Earnings, 1975 to 1999

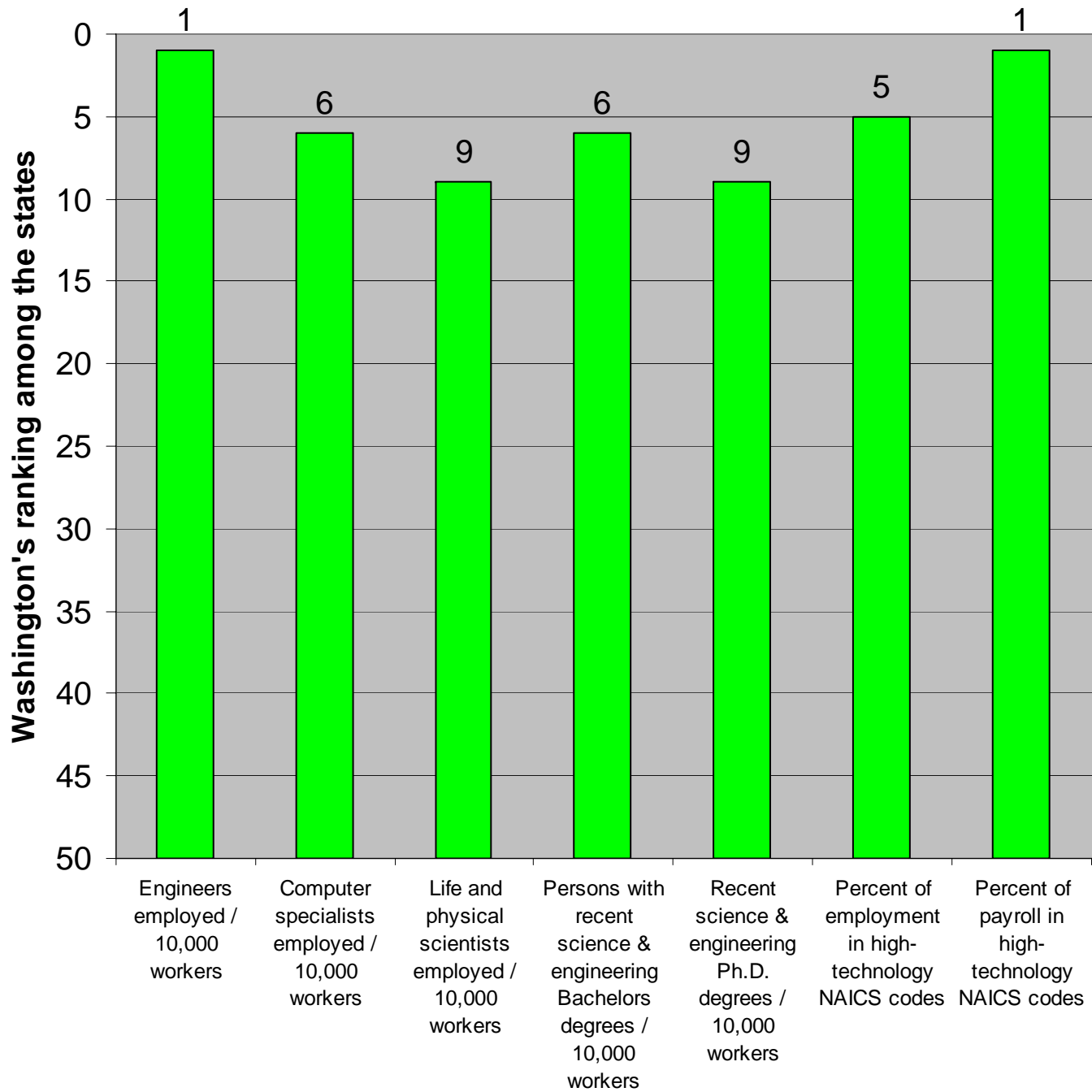


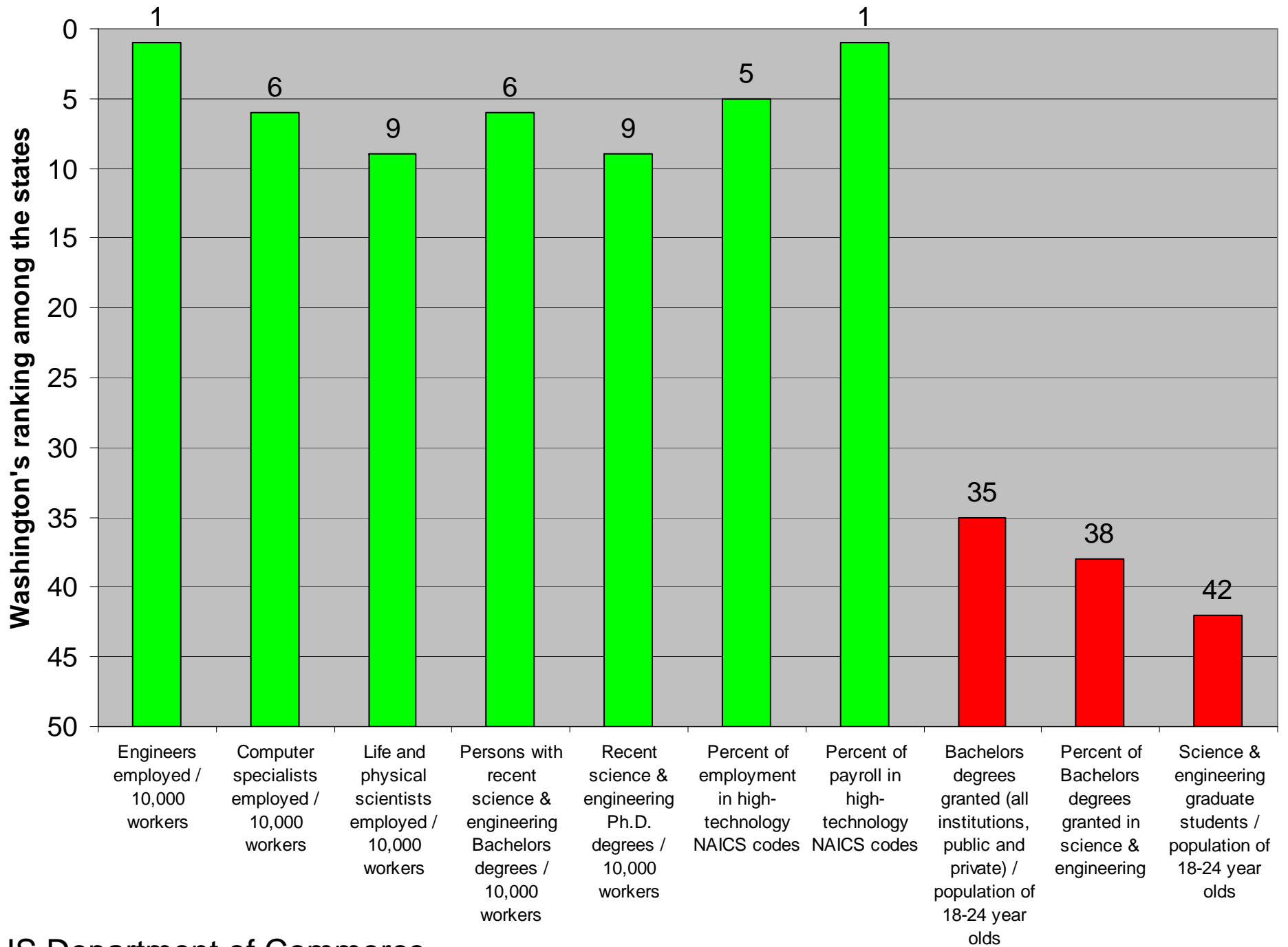
Source: U.S. Census Bureau, Current Population Surveys, March 1976-2000.

**Washington State: Average total personal income, 2003
(Age 25 or greater)**

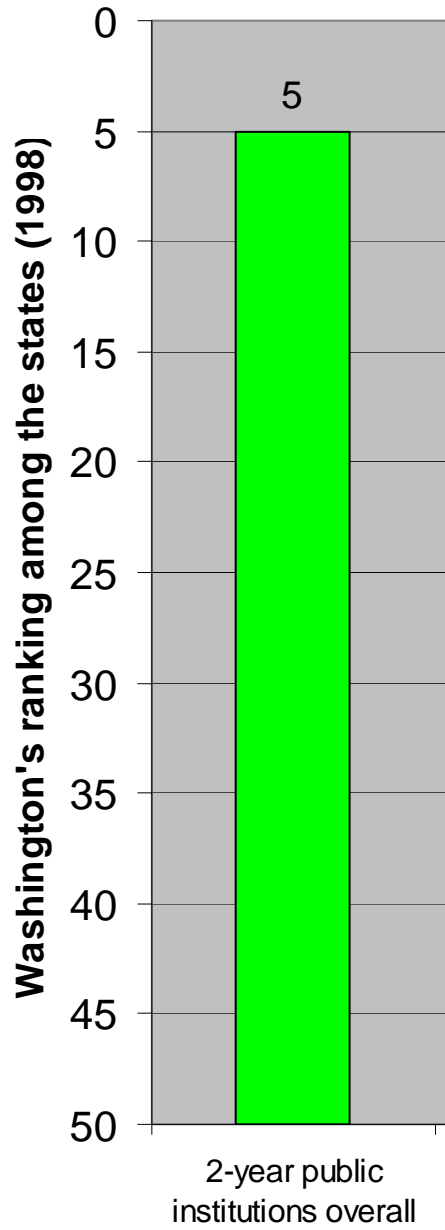


US Census Bureau

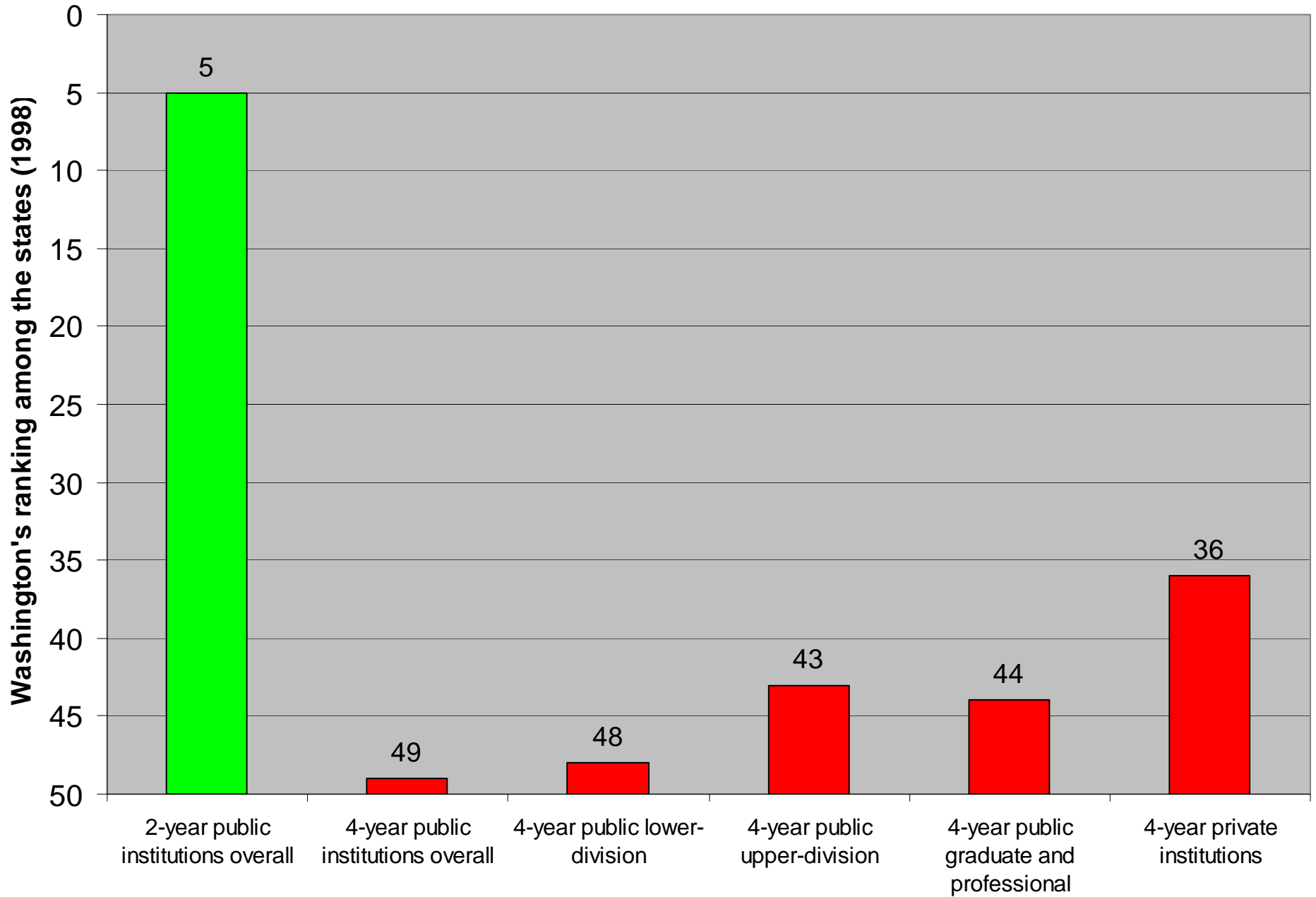




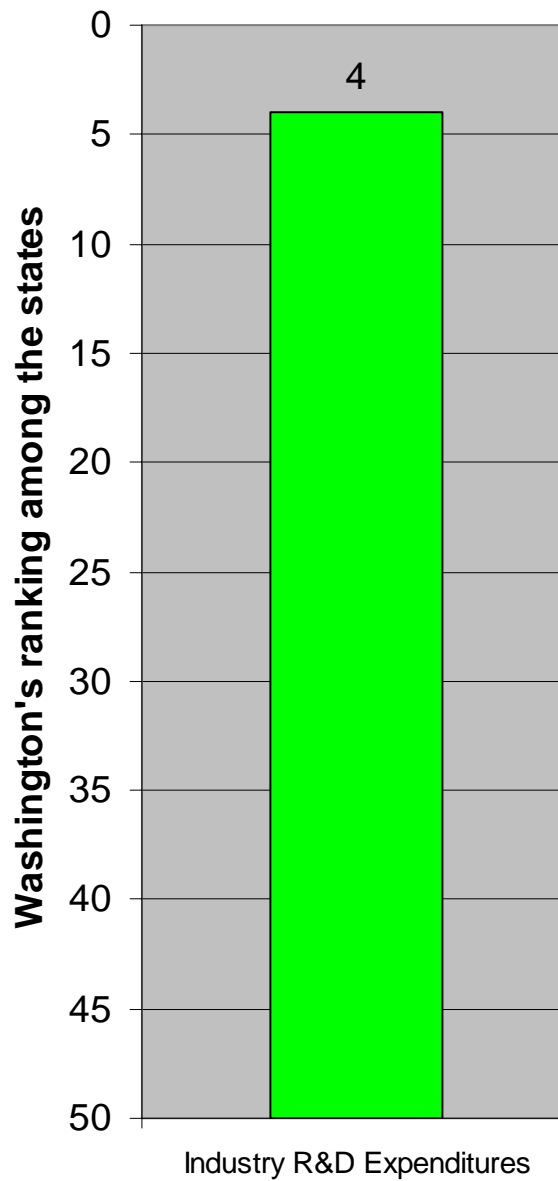
US Department of Commerce



US Department of Commerce **Participation rate (% of 18-24 year olds)**

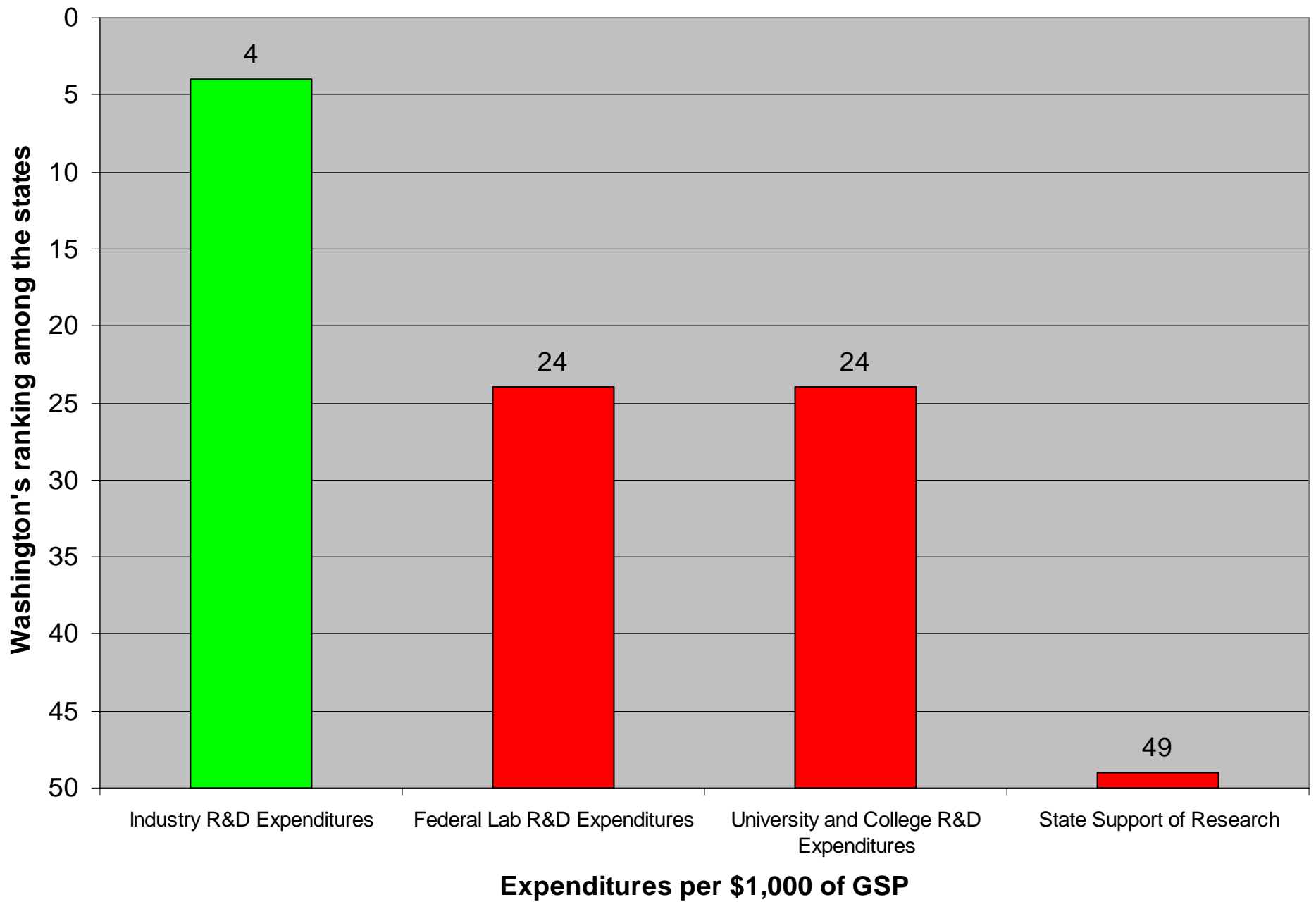


US Department of Commerce **Participation rate (% of 18-24 year olds)**



Expenditures per \$1,000 of GSP

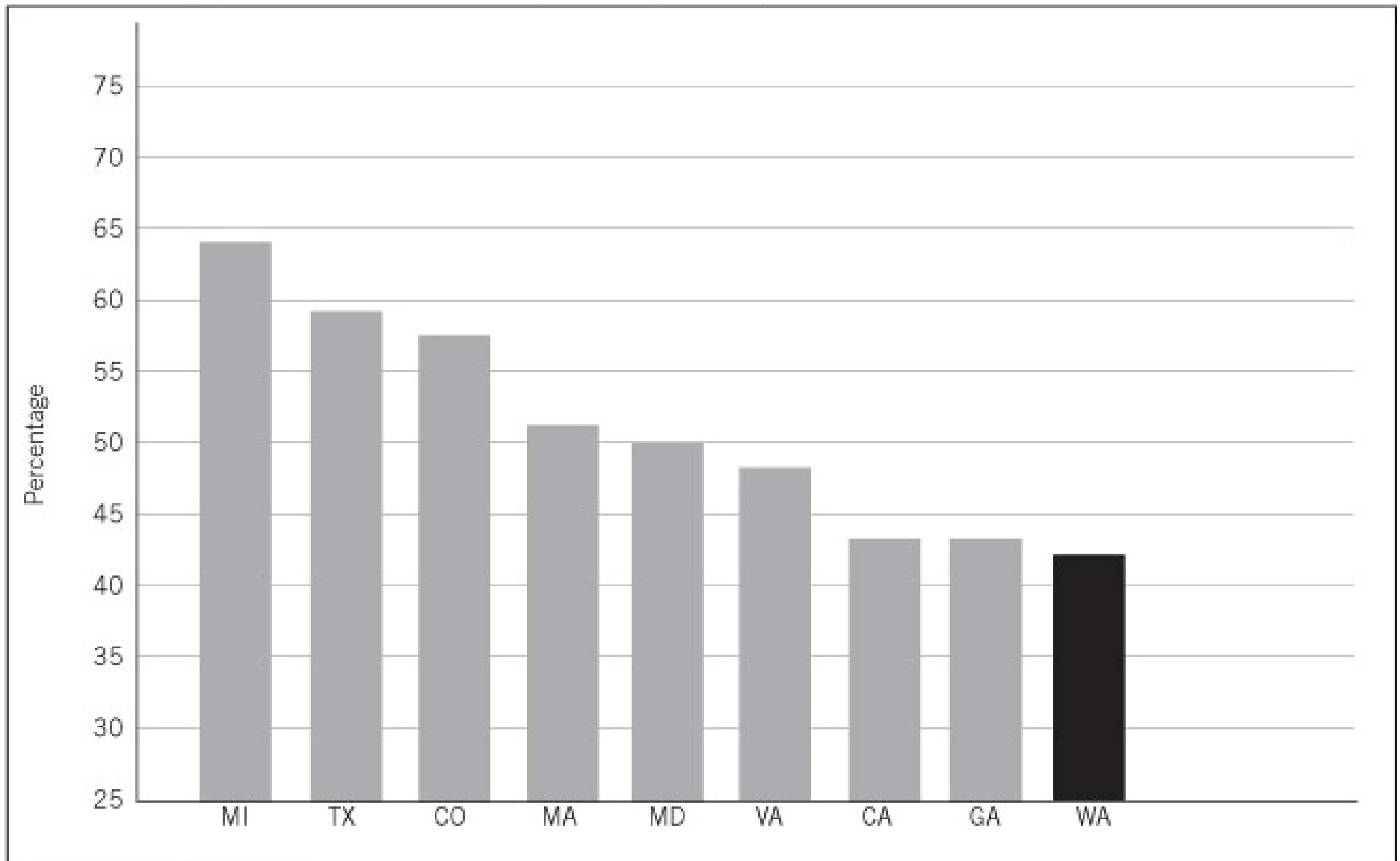
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US Department of Commerce

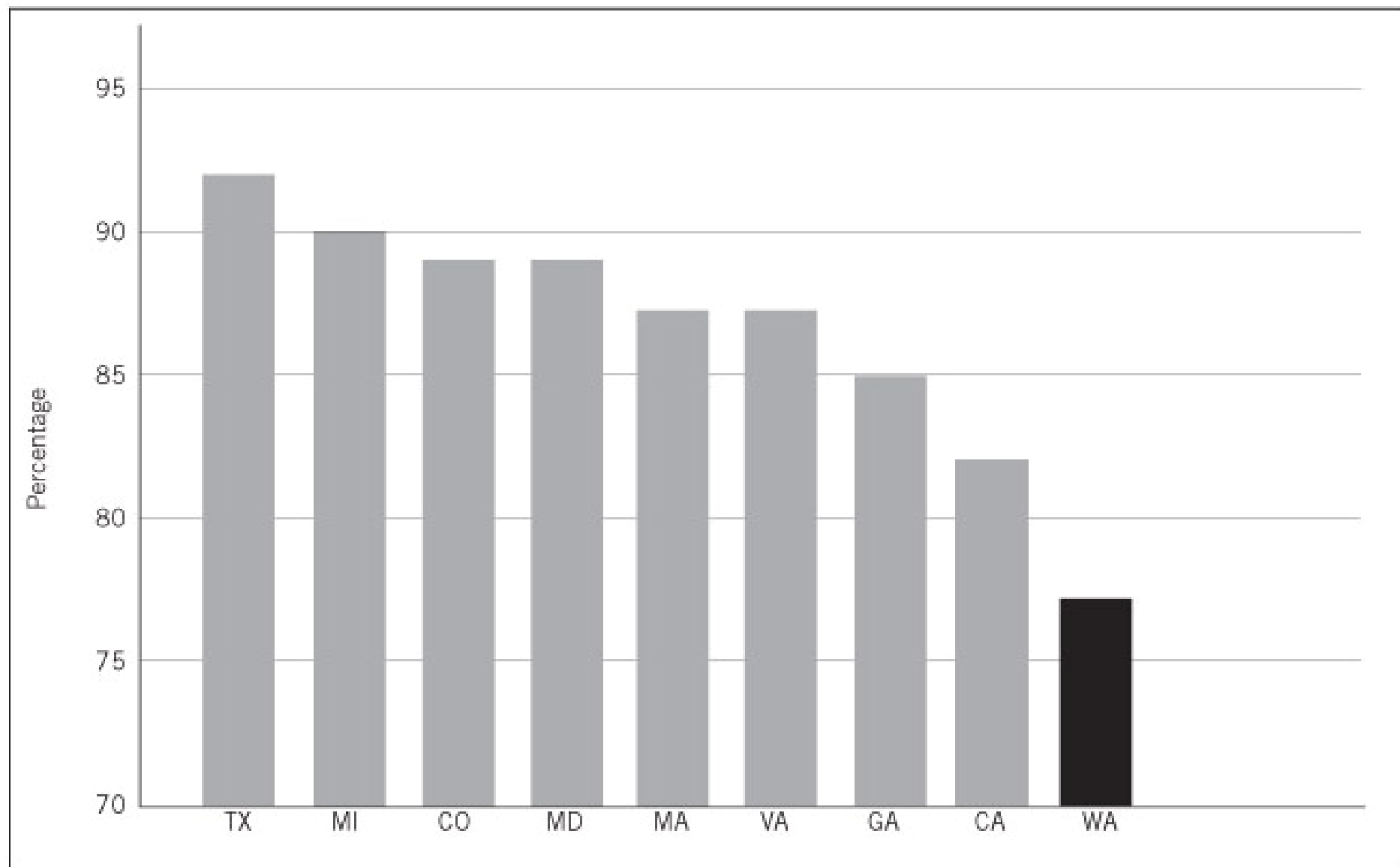
⌘ How about K-12 performance?

Chart 6. Percentage of SAT Takers Who Took Physics in High School, 2003



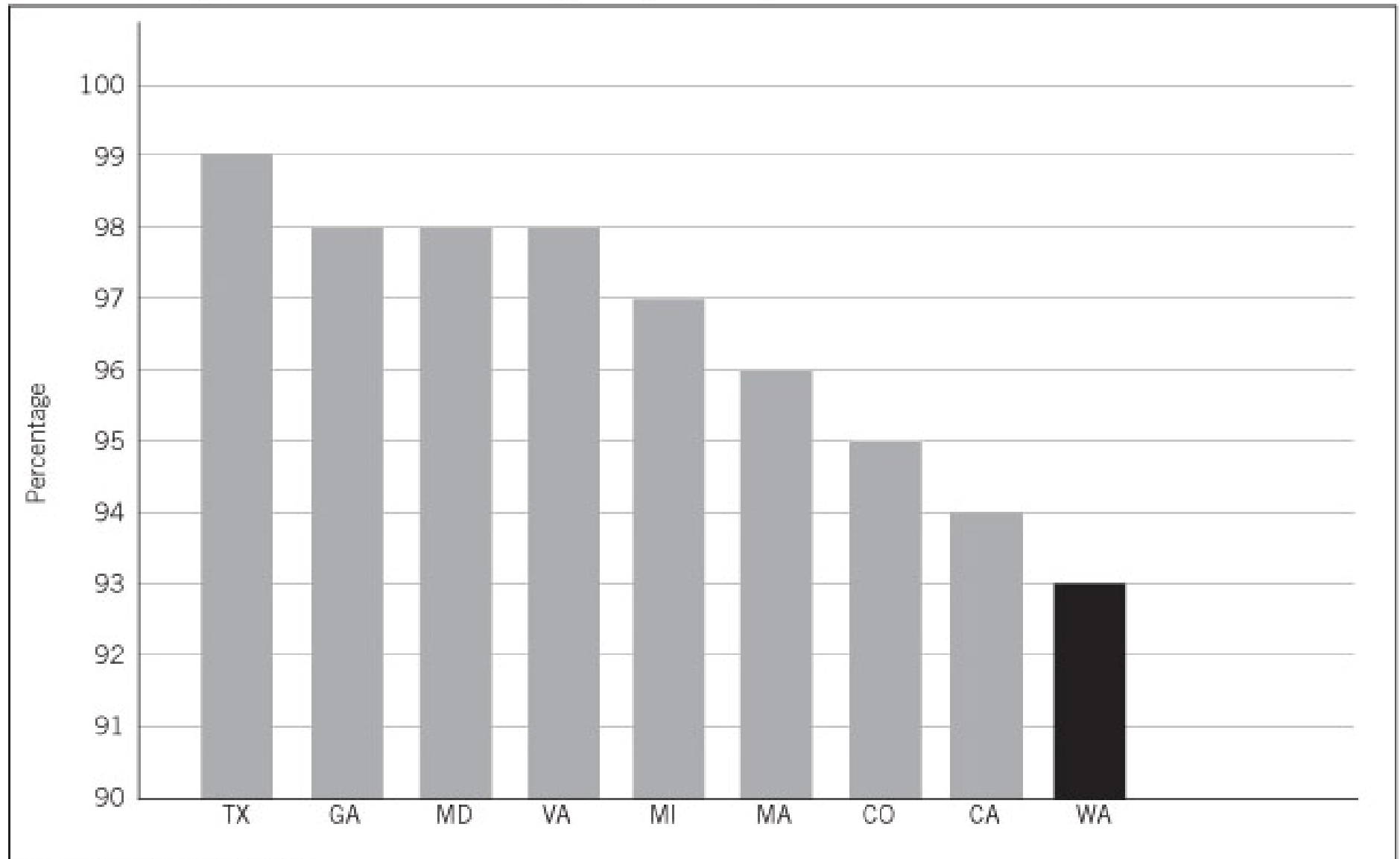
Source: The College Board, 2003

Chart 5. Percentage of SAT Takers Who Took Chemistry in High School, 2003



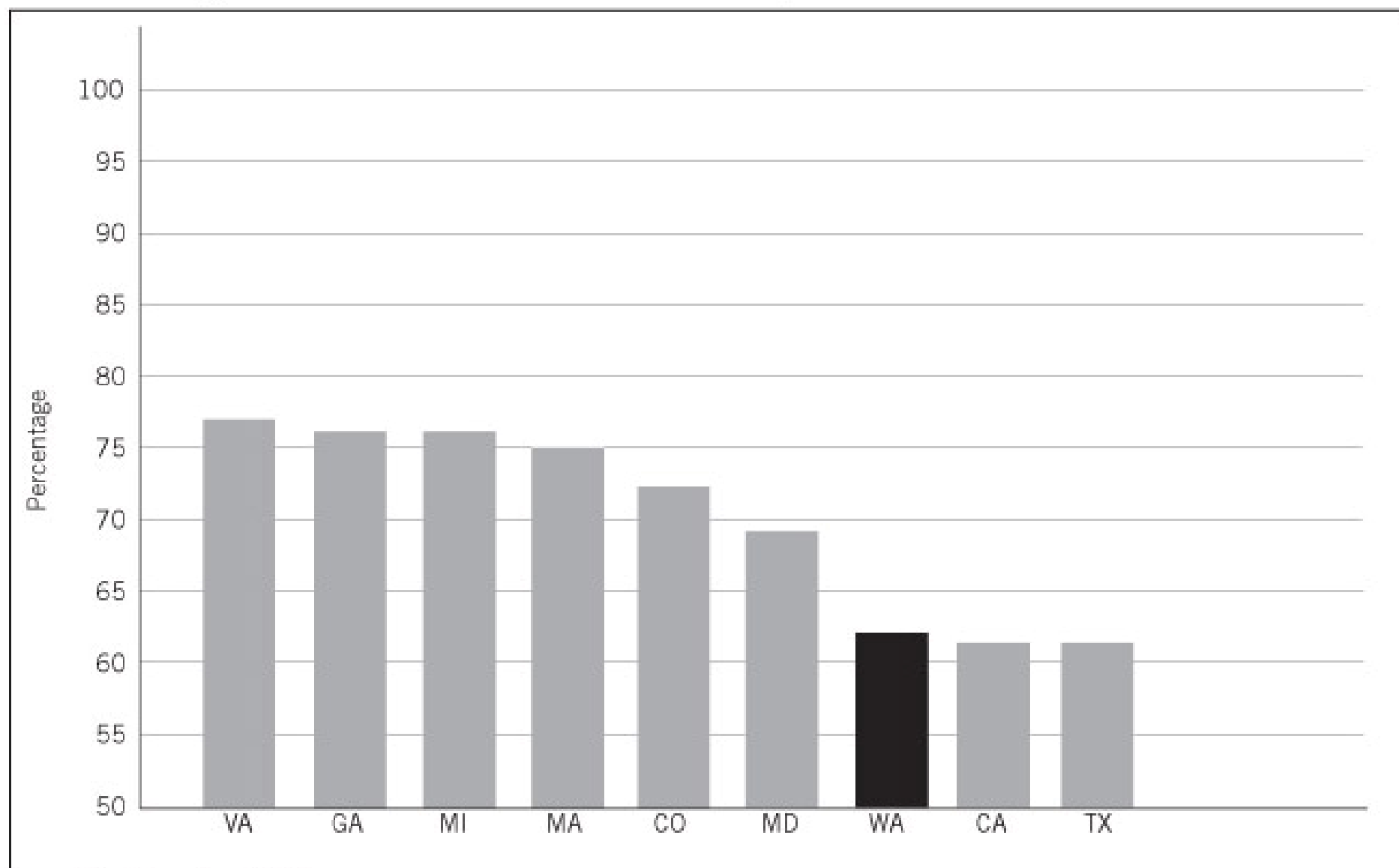
Source: The College Board, 2003

Chart 4. Percentage of SAT Takers Who Took Biology in High School, 2003



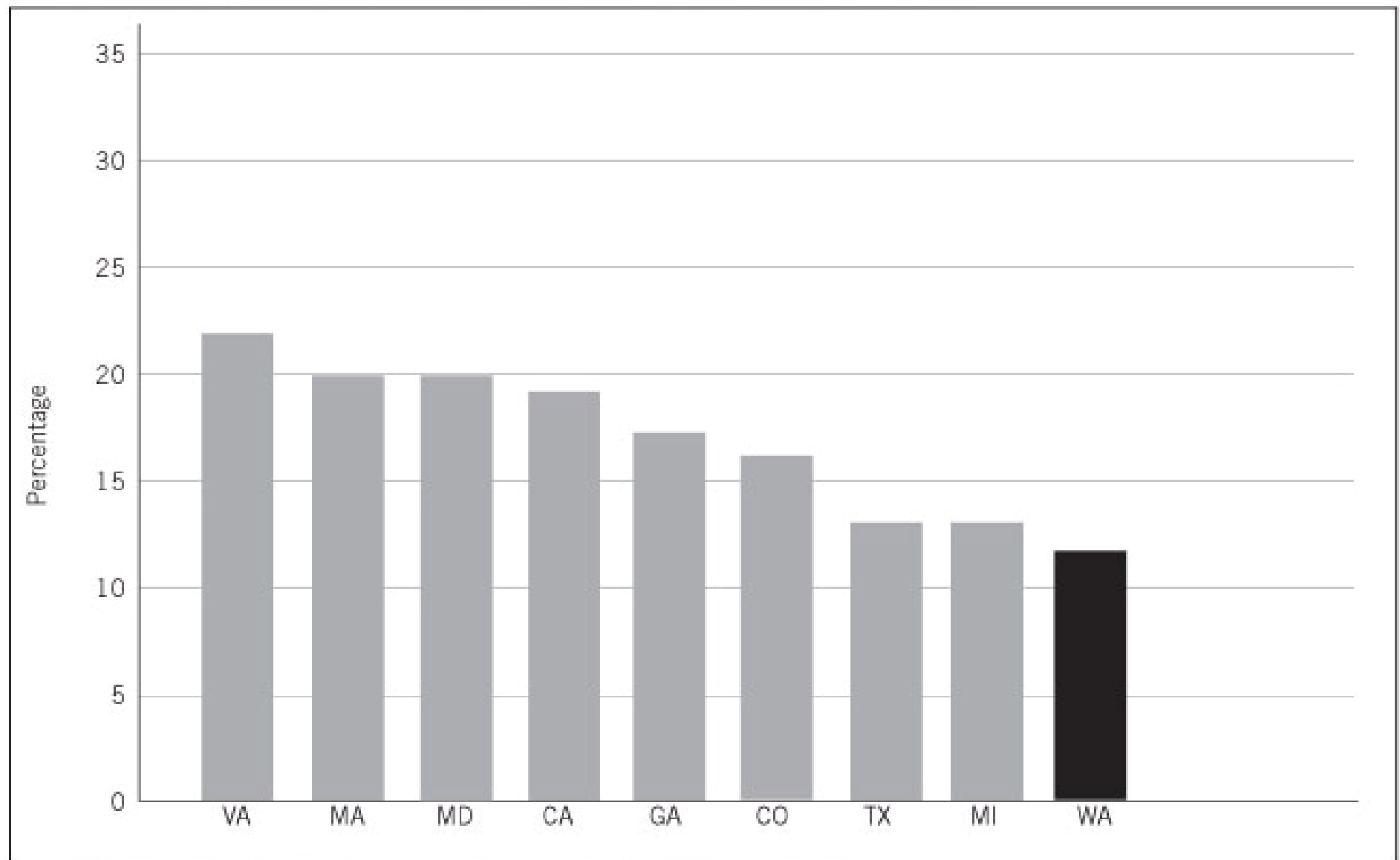
Source: The College Board, 2003

Chart 3. Percentage of SAT Takers Who Took 4 or More Years of Math, 2003



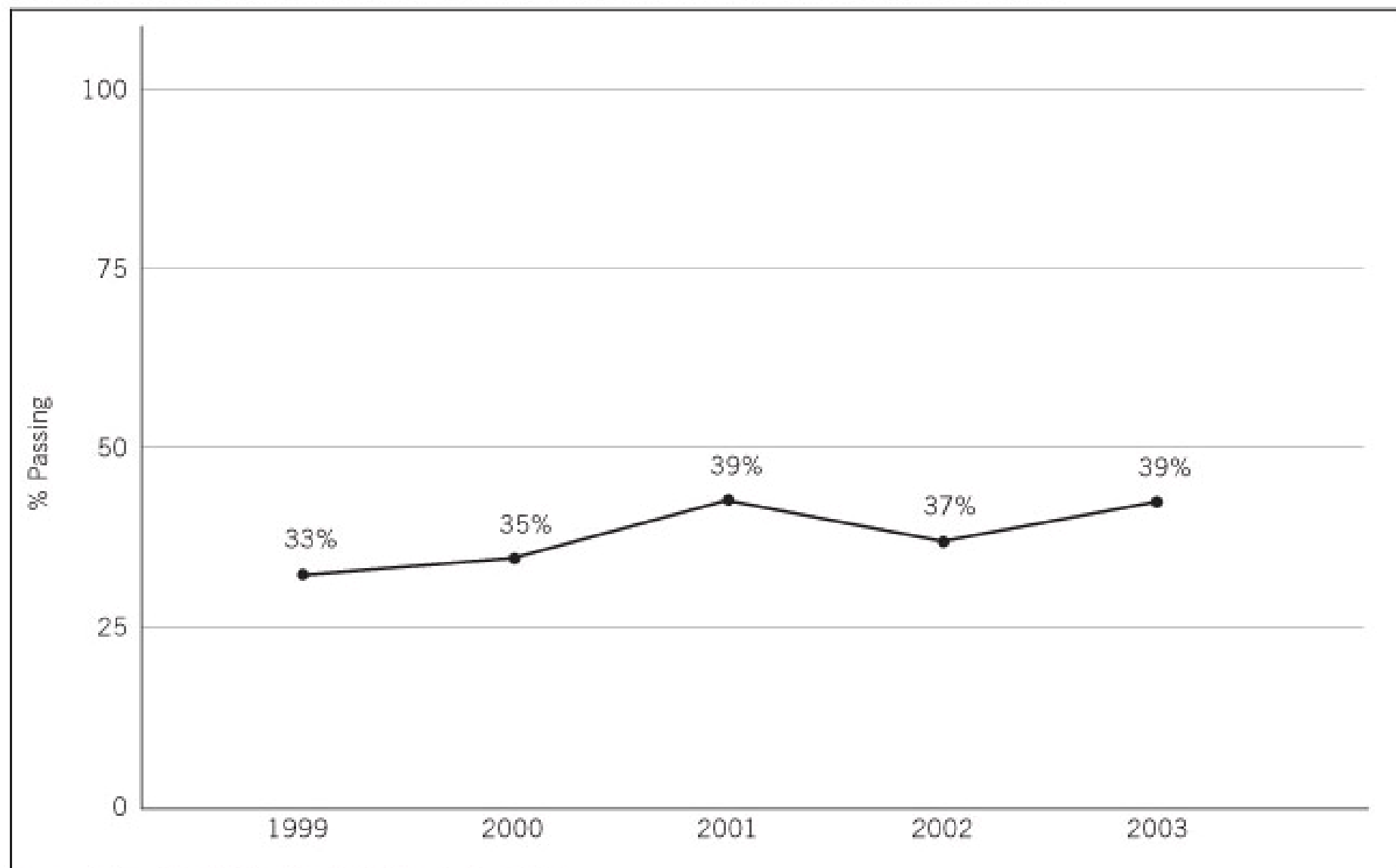
Source: The College Board, 2003

Chart 7. Percentage of High School Seniors Who Took Advanced Placement Tests, 2003



Source: The College Board and Western Interstate Commission for Higher Education, 2003

Chart 1. Percentage of 10th Graders Passing the WASL Mathematics Examination, 1999-2003



Source: Office of Superintendent of Public Instruction, 2003



⌘ Head Start

⊞ "Head Start ... gives children the tools to succeed in school and in life. It reduces the chance that children grow up to become criminals ... One study found that girls who had not attended Head Start were three times more likely to be arrested by age 22 than girls who had ... I'm convinced ... we would have fewer crime victims if all eligible children got Head Start."

⊞ Seattle Police Chief Gil Kerlikowske

⊞ *New York Times* Letters, July 4 2005

⊞ In Washington, **half of the children financially eligible for Head Start and similar programs do not get these programs due to lack of funding**



⌘ The key to a 21st century job is a Bachelors-level (or greater) education

⌘ In Washington State:

- ⊞ Our public higher education system is structured for a manufacturing economy, not an innovation economy!
- ⊞ Private institutions are not filling the gap
- ⊞ At the graduate level, things are just as grim
- ⊞ We are creating the jobs - and we are importing young people from elsewhere to fill them!
- ⊞ We rank 49th out of the 50 states in state support of research, per \$1,000 of GSP. (We rank 48th per capita.)
- ⊞ K-12 is a disaster, and we are not being told the facts
- ⊞ We under-fund Head Start and analogous programs

⌘ In Washington State:

☑ We are all geared up to fight the last war!

