



The Federal Perspective on Educational Technology

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3 Challenges Facing Education

- Changing Global Economy
- Today's Students
- Productivity Paradox



Economy

- Changing
 - Information-based, changing world
 - 80% of jobs in 2010 do not exist today (U.S. Department of Labor report)
- Global
 - Other countries are working hard, moving fast and using technology to accelerate progress. . .
- Innovation, creativity & tolerance for risk-taking are strengths of the U.S.



"Ten years ago India, Russia & China were absolute non-players in the world economy. Today, they are active participants. If you add up their populations, it approaches 3 billion people... Even if you discount 90 percent of the people there as uneducated farmers, you still end up with about 300 million people who are educated. That's bigger than the U.S. workforce... [Y]ou have brought 3 billion new people into the workforce, and maybe the equation changes"

Craig Barrett



Who Are Today's Students?

- Millennial Generation
- Born between 1982-2002
- Almost 100 million young adults between 0-24 years old
- More diverse than their parents generation
- Have come of age along with the Internet.
- Information has been universally available and free to them
- Community is a digital place of common interest, not just a shared physical space



Family is Important

- 91% of students felt they have at least one family member they can confide in
- If they could, 50% of students would spend more time with their family
- 74% get along with their parents extremely or very well
- When picking one person as a role model, 44% of students pick a family member



Interested in World and Community

- 76% would like to learn more about the world
- 28% of high school students use a foreign news source to learn about current events.
- 70% of students report volunteering or participating in community service.

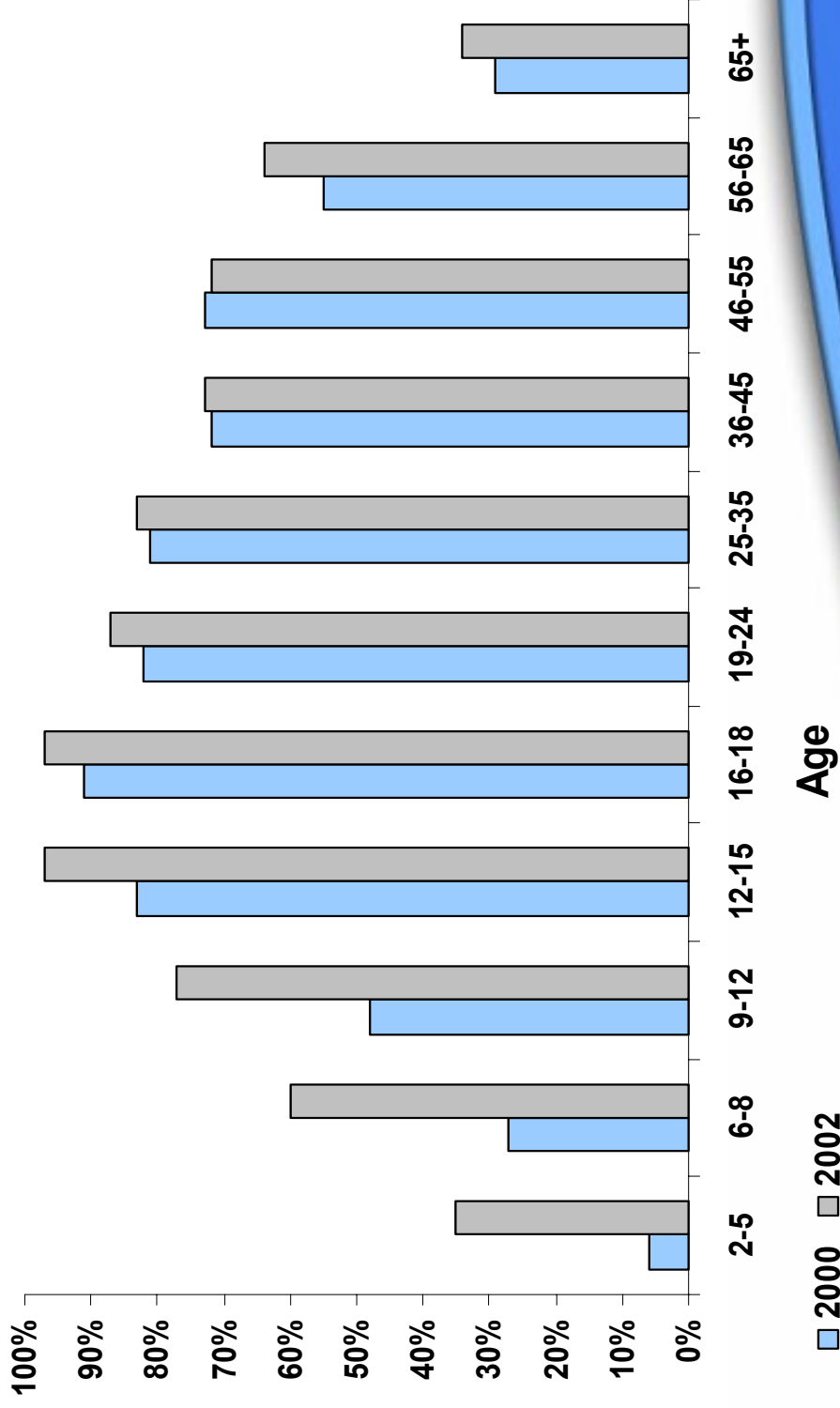


Even Young Children

- 72% of all first graders used a home computer during the summer on a weekly basis.
- Over 85% of young children with home computers used them for educational purposes.
- By 1999, 97% of kindergartners had access to a computer at school or home.
- 35% of children ages 2-5 use the Internet from any location.



Internet Use by Age





Online Teens

- 71% of online teens say they relied mostly on Internet sources for the last big project they did for school
- 48% say use of the Internet improves their relationship with friends
- 94% of online teens use the Internet for school-related research
- 74% of online teens use instant messaging
- 24% of online teens have created their own Web pages
- The number of children ages 4 to 18 who own at least one wireless device (e.g. cell phones, PDAs) grew from 32% in 2002 to 43% in 2003

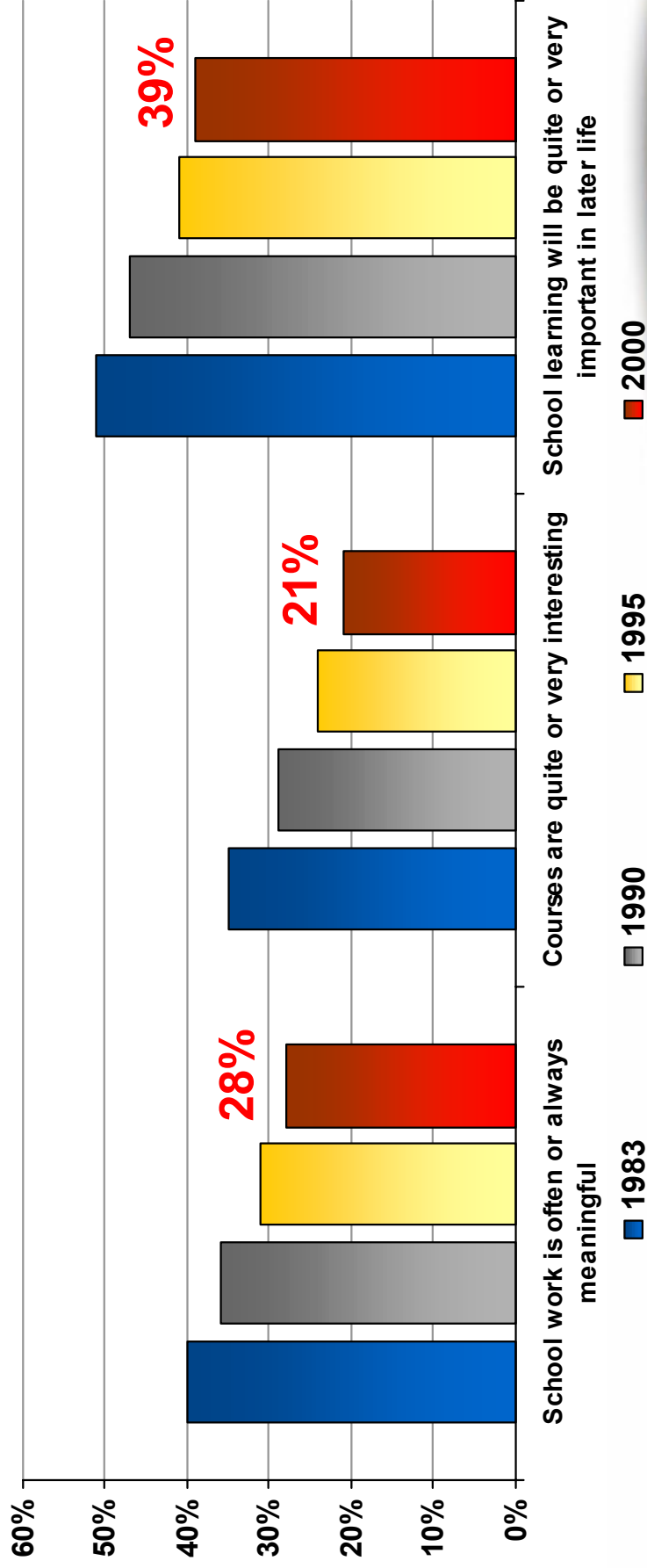


Education Beliefs

- 91% of students have a teacher/administrator who personally cares about their success
- 60% of students report that standardized tests are a good measure of progress
- 96% say doing well in school is important in their lives
- 88% of students report that attending college is critical or very important to future success



12th Graders Perceptions About School





Millennials influence the present
and ***are*** the future.
Pay close attention to them, as
their usage of media influences
other demographic groups and
they literally represent the
world to come.

Yahoo: Born to Be Wired





Our Challenge

- Are our schools ready for this generation?
- How do we create the learning environments that engage this generation to help them reach their full potential?
- How do we equip these students with the skills and knowledge they need to be competitive in a global, information-based economy and contributing citizens?
- What assumptions about education do we need to question?



You can see the computer age everywhere
but in the productivity statistics.

Robert Solow, economist



Productivity Paradox

- By late 1990's, despite billions invested in computers, corporate productivity remained flat
- Automation of existing business practices did not produce substantial increases in productivity
- Creating new business models and new business processes using technology did increase productivity and spawn new businesses and business models.



Achievement Paradox

- Education is experiencing both a similar paradox with regard to technology implementation
- A unique productivity paradox, the Achievement Paradox
 - Despite a decade of significant technology investment, most achievement indicators are flat.
 - A growing number of decision makers questioning the benefits of this investment.



What Does This Mean for Education?

- Reengineer processes and structures
 - How can technology improve assessment? Operational efficiency? Labor intensive teacher tasks? IEP?
- Align technology to educational challenges, goals, and instructional strategies.
 - Align technology with school improvement and accountability plans.
- Invest in professional development
- Reallocate Resources
- Question assumptions



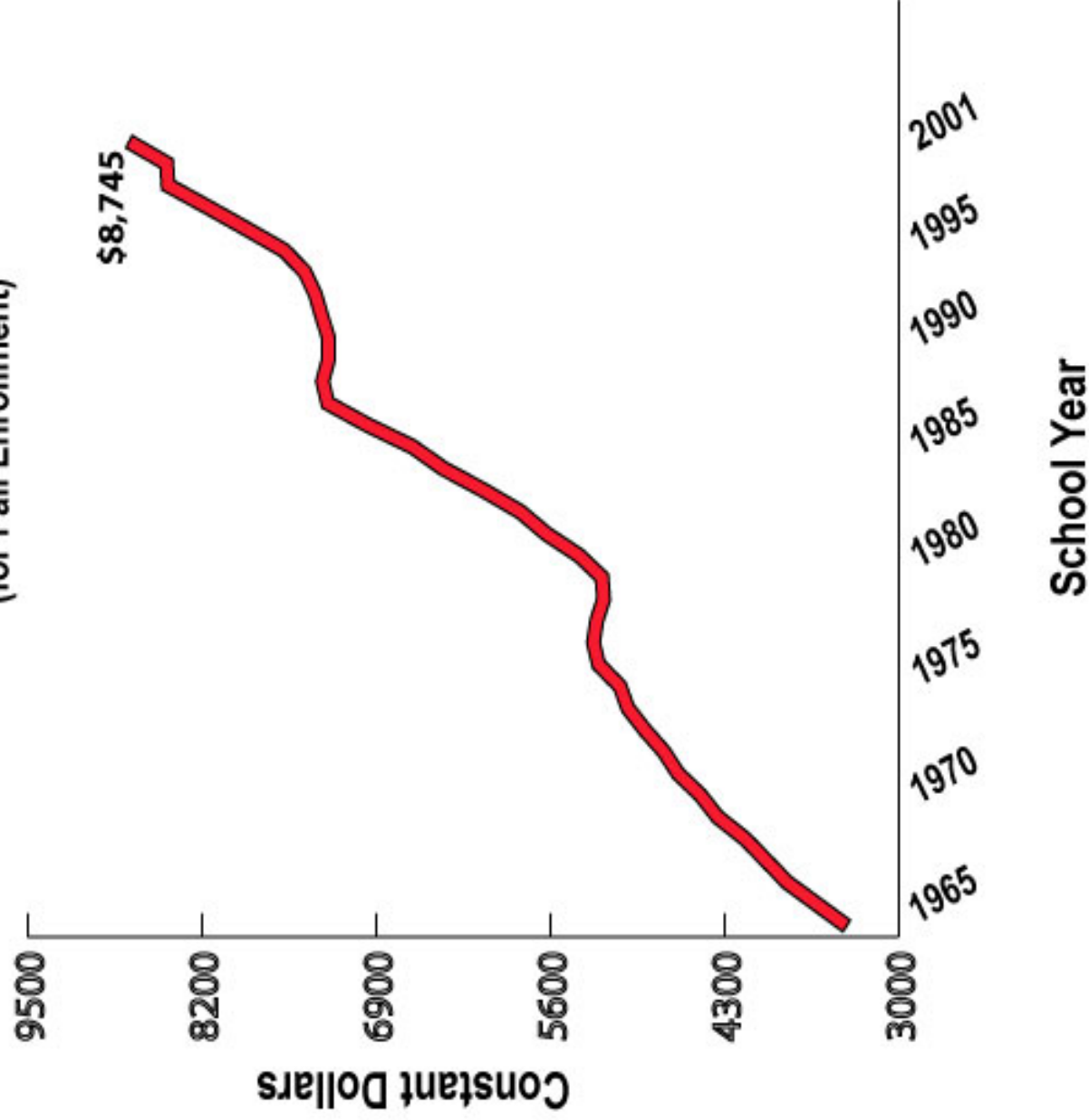
Technology Priorities at the U.S.E.D.

1. Student Data Management Systems
2. Online Assessments
3. E-Learning and Online Education

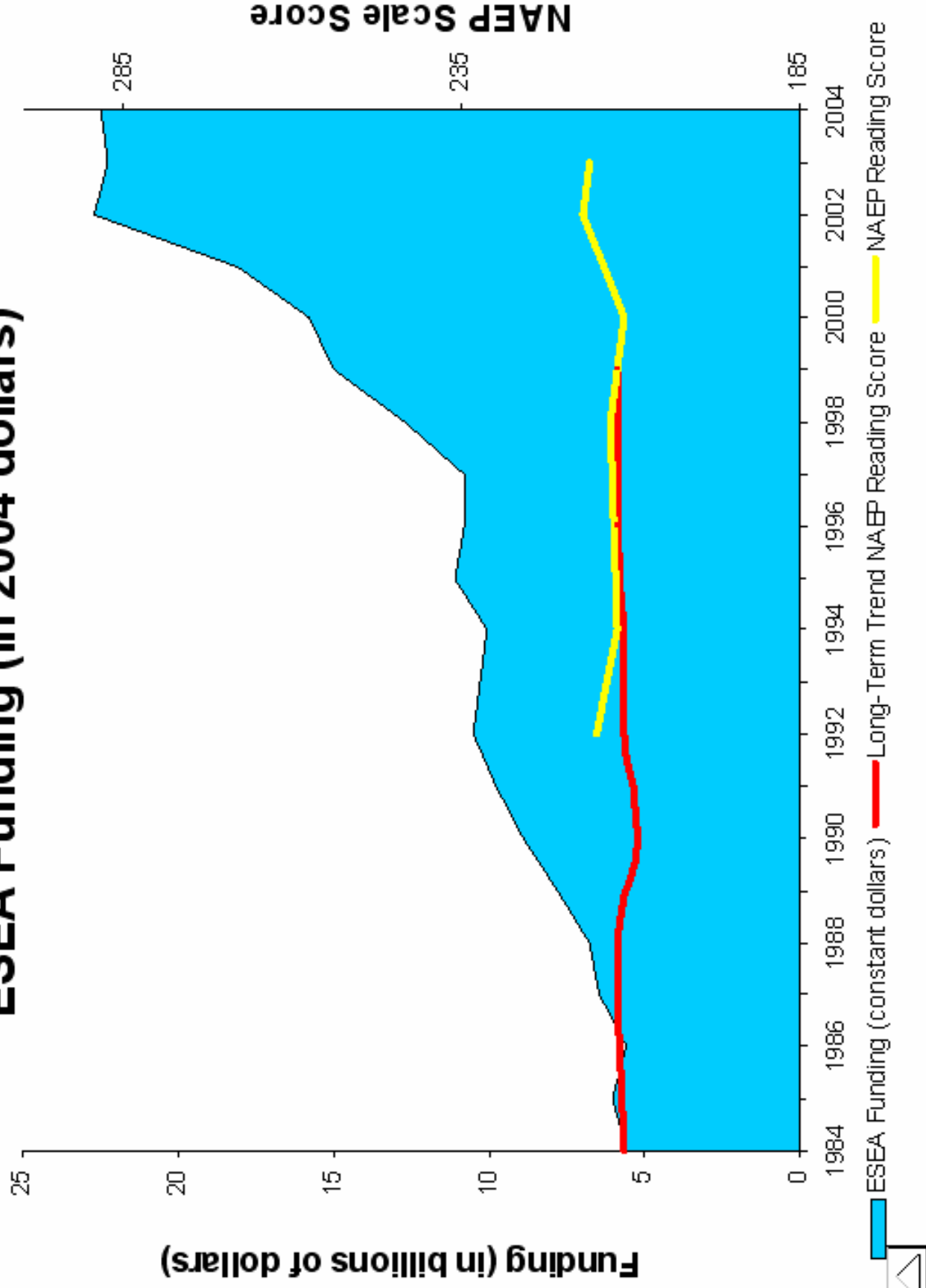


Why No Child Left Behind

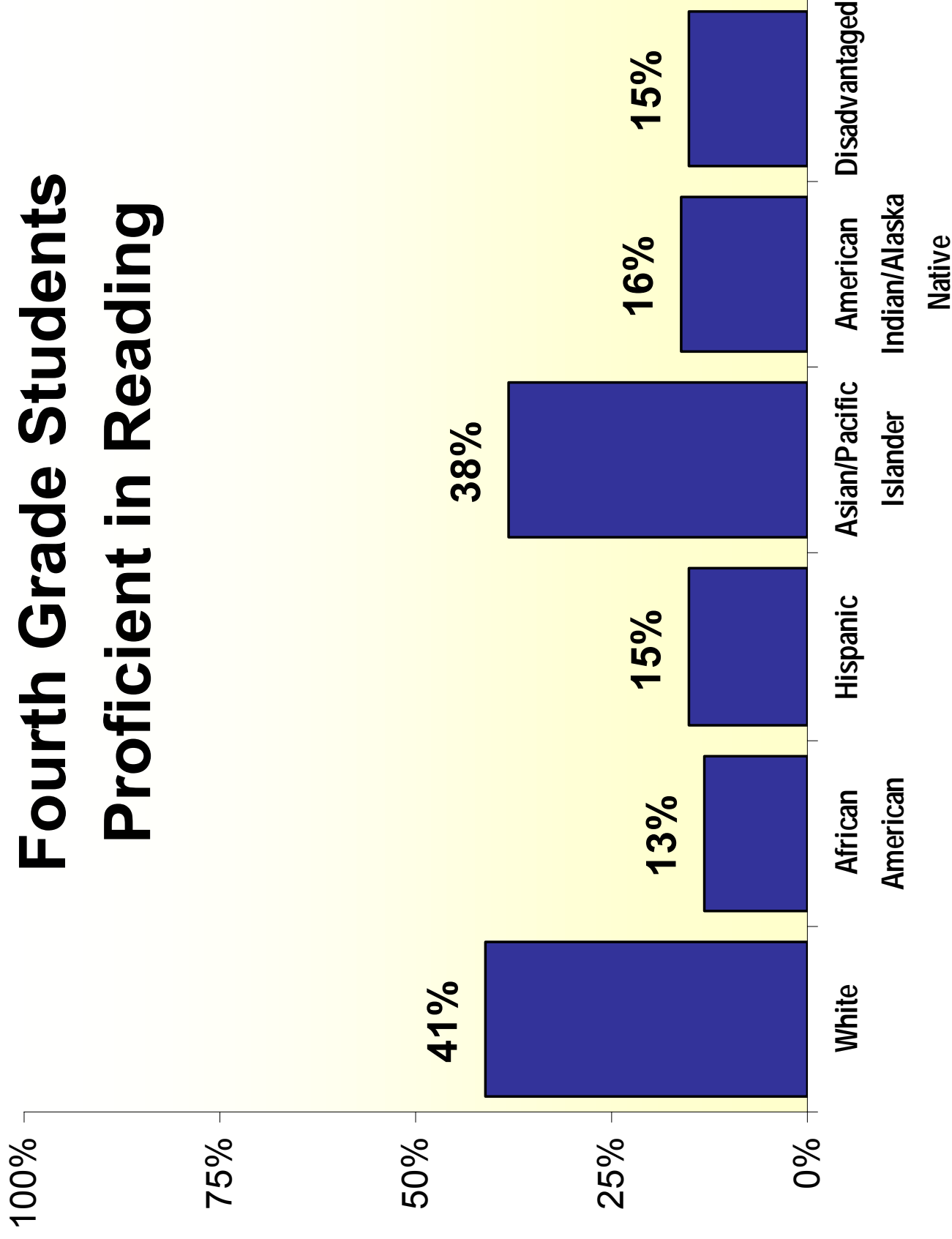
Average Expenditures Per Pupil (for Fall Enrollment)



NAEP Reading Scores (Age 9) and ESEA Funding (in 2004 dollars)

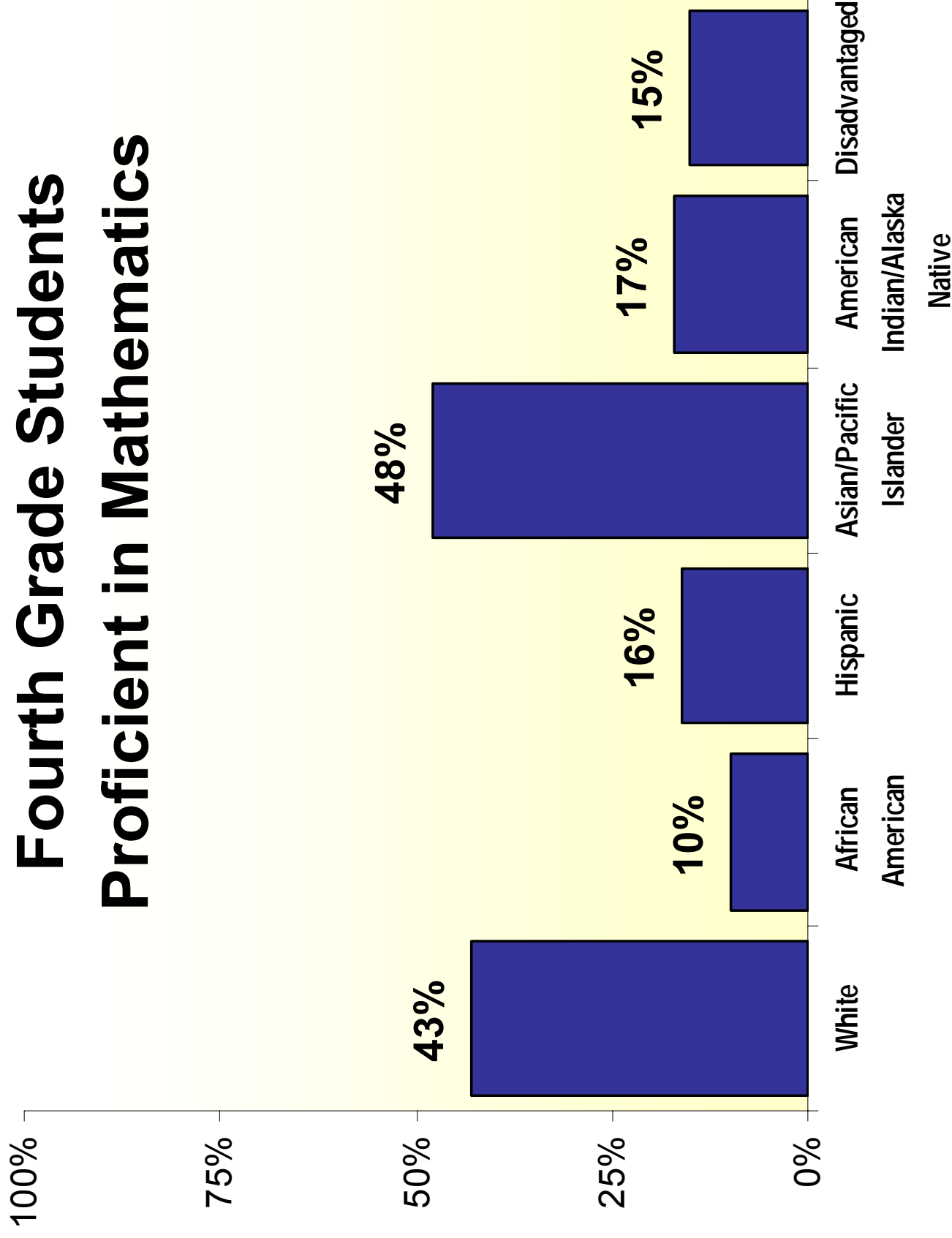


Fourth Grade Students Proficient in Reading



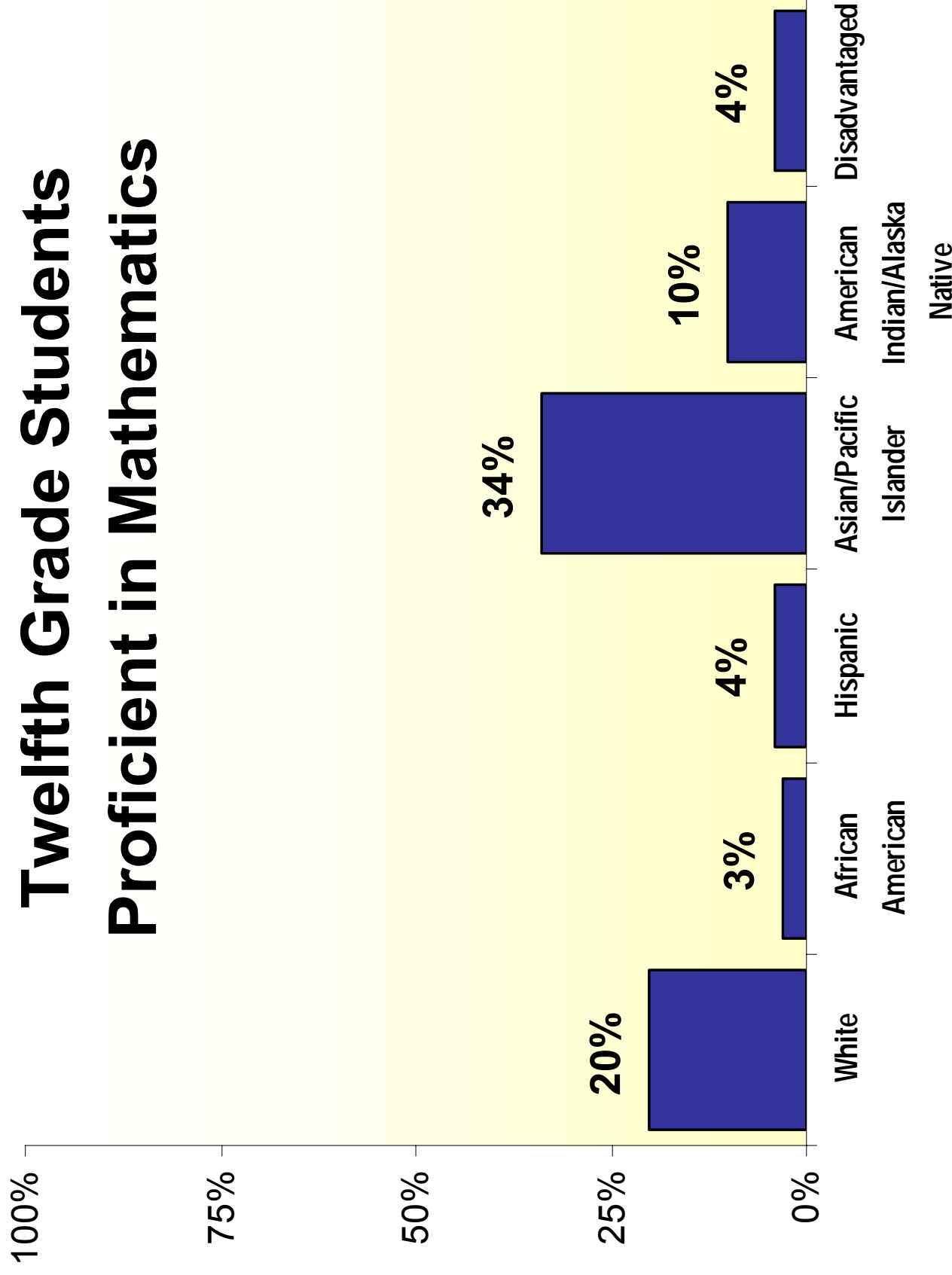
Source: National Assessment of Educational Progress 2003

Fourth Grade Students Proficient in Mathematics



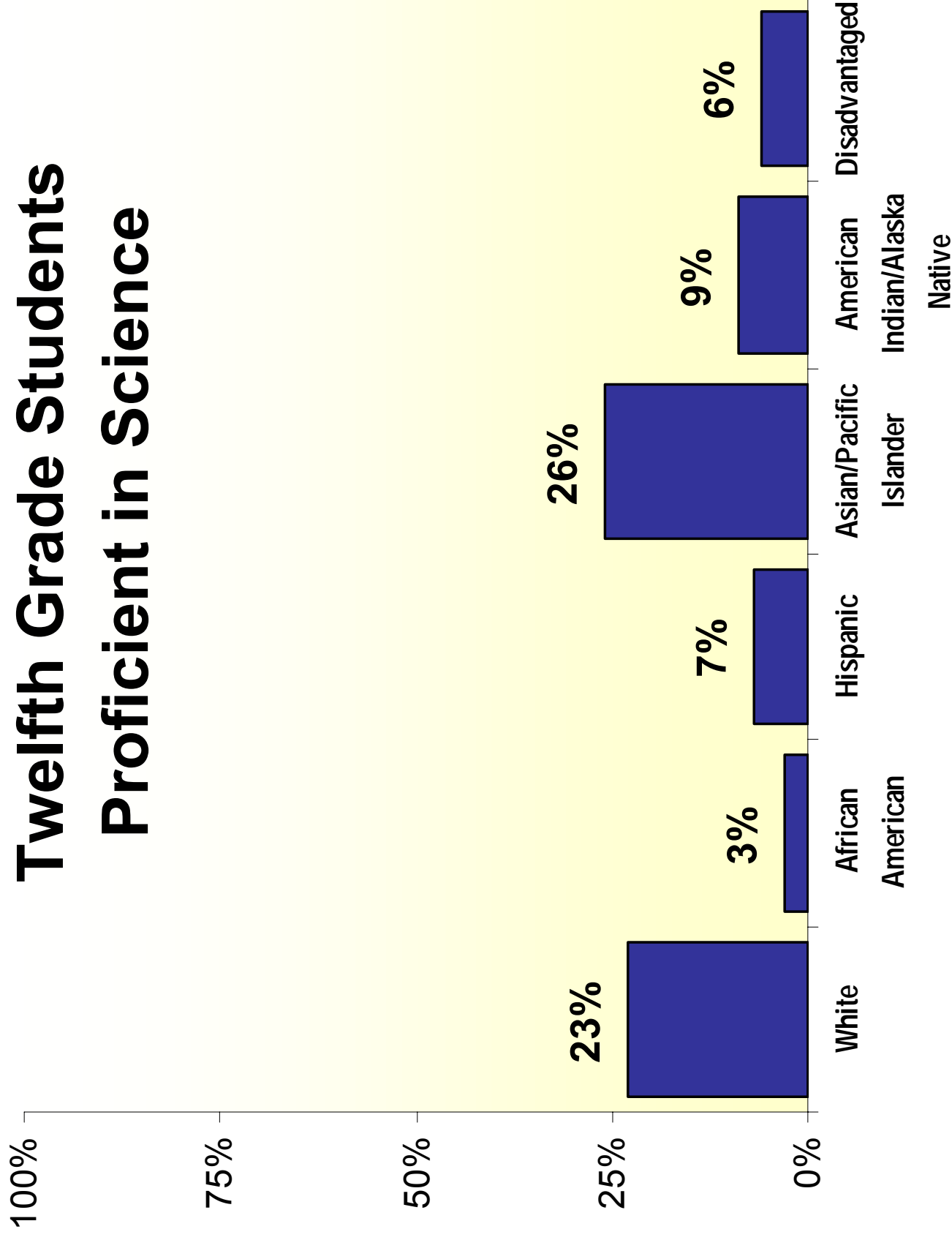
Source: National Assessment of Educational Progress 2003

Twelfth Grade Students Proficient in Mathematics



Source: National Assessment of Educational Progress 2000

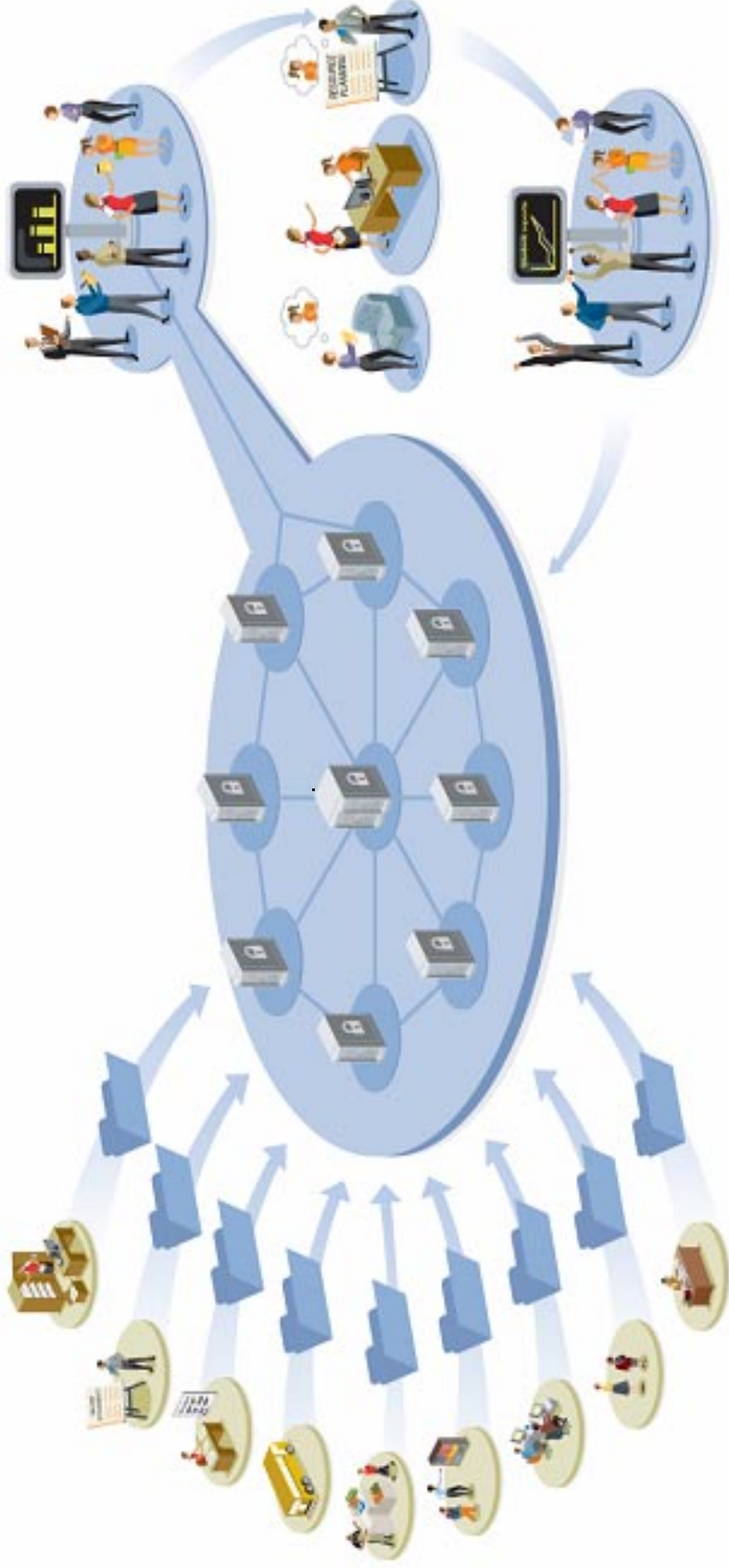
Twelfth Grade Students Proficient in Science



Source: National Assessment of Educational Progress 2000

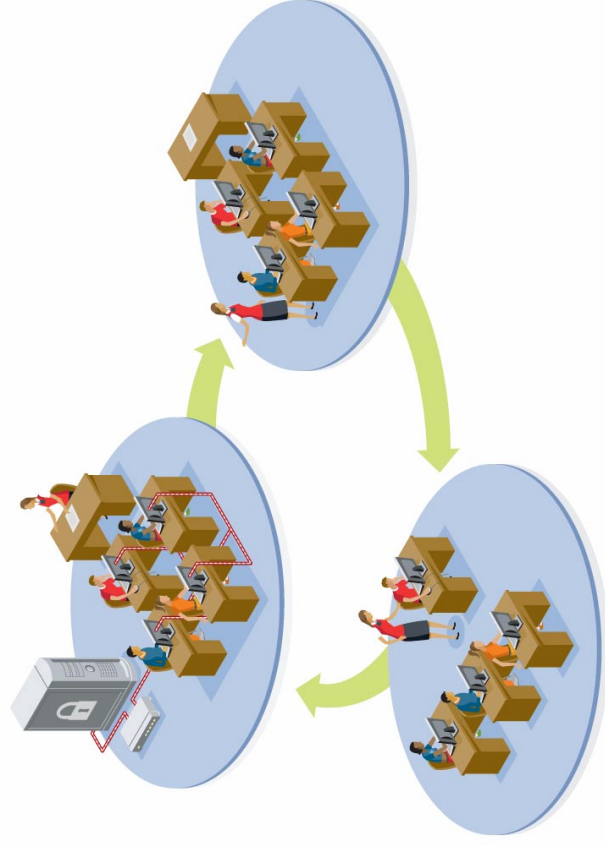


Integrated Student Data





Online Assessment



Total time to test results:		24 Hours
Informing instruction:		100%
Transport, security, paper costs:		Inexpensive
Bottom Line: Priceless		



E-Learning

- “The use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere.”
- New learning modes
 - Hybrid/blended, asynchronous, synchronous
- New organizational models
 - Virtual Schools, Cybercharter, Distance Learning



E-Learning

- Expands access to educational courses, programs, and learning opportunities
- Brings world experts & community into the classroom
- Offers additional access to tutoring and supplemental programs
- Enables individualized instruction for students
- Offers choices to parents, teachers, students
- Support teacher professional development



Benefits

- Enhanced communication between students and teachers and leveling of playing field
- Accommodation of different learning styles
- Frequent assessment and immediate feedback
- Increasing supply of teachers



The way technology is funded

Traditional Funding Approach

- Targets dedicated funds to specific projects
- May be disconnected from educational goal
- Misses 'multiplier effect' from coordinated spending

**Funding
Programs**

**Educational
Goal/Need**

**Prof. Development
& Tech Support**

**Content,
Instructional Software
Applications**

**Infrastructure &
Devices**

**No One
LEFT BEHIND**

Systemic Funding Approach

- Focus on educational goal
- Determine appropriate software and hardware to support that goal
- Include professional development, technical support and ongoing maintenance
- Pool funding from multiple sources to support particular aspects of the overall project
- Achieve 'multiplier effect' from coordinated spending

Educational Goal/Need

**Content, Instructional
Software, Applications**

**Infrastructure &
Devices**

**Prof. Development
& Tech Support**

Funding Programs



Systemic Funding Example

Improve 3rd grade literacy

Cognitive Reading Tutoring Software

Laptops, Handhelds, Internet

**Professional development
and maintenance**

Reading First

Title I

E-rate

Enhancing Ed. Through Tech.

Educational Goal/Need

**Content, Instructional
Software, Applications**

**Infrastructure &
Devices**

**Prof. Development
& Tech Support**

Funding Programs



Educational Technology

- **Every NCLB program is an opportunity for technology funding.**

- Technology is “integrated” into the “curriculum” programs.
- Increased flexibility empowers states and schools to transfer funds to where they’re needed most.



From Good to Great

- The quality of the leadership
- The quality of the people engaged in the enterprise
 - Teacher Professional Development
 - E-learning
 - Online assessments
 - Using Data to Personalize Instruction
- Using data to drive decisions
 - Integrated Data Systems



From Good to Great

- Recognizing and focusing on your core business
 - Aligning environments with educational goals
 - Creative budgeting and financing
- Creating a culture of discipline
 - Innovation and invention
- Using technology to accelerate momentum not create it
 - E-Learning and virtual schools
 - Digital Content
 - Broadband Access



Conclusions

- America's students need the knowledge and competence to compete in an increasingly technology-driven world economy.
- This need demands new models of education facilitated by educational technology.
- Some of the most promising new educational approaches are being developed through e-learning and virtual schools.
- This is an exciting, creative and transforming era for students, teachers, administrators, policymakers and parents.



Thank You!
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