

What It Will Take for Colorado to Compete with the Best Education Systems in the World



**A Presentation to the Joint Colorado
House and Senate Education Committees**

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PART 1



*WHERE WE STAND IN RELATION
TO THE REST OF THE WORLD*

NCEE Community College Research



- **2 1/2 years of research on what it takes to succeed in 1st year of typical Community College**
- **Looked at eight of the most popular CC programs, covering 80% of the programs of study**
- **Analyzed reading level of most popular textbooks and topics covered in 1st year math**
- **Talked with instructors**

NCEE Community College Research



- Reading level of texts at 12th grade level
- Typical high school text now at 7th-8th grade level
- “College Math” is Algebra I, and many cannot do it
- High school grads’ command of middle school math very shaky and instructors report their writing is weak
- ACT told us that predictions for college success pretty much the same for 4-year colleges as for 2-year colleges

The Truth About College Readiness

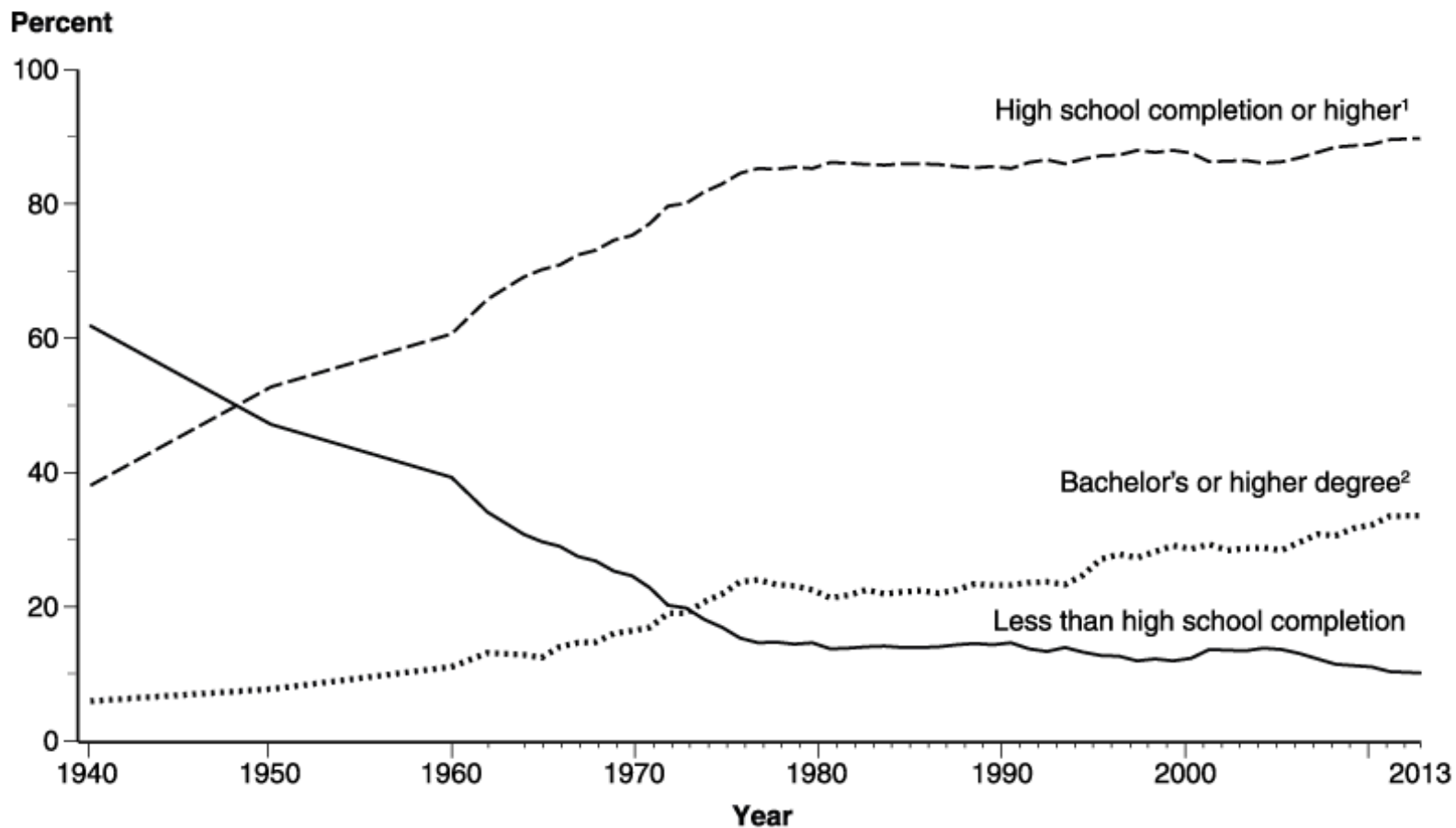


- Most college-bound high school grads are not going to college—they are enrolling in very expensive high schools
- A large fraction are not ready for that high school program
- Either way, they are not ready either for college or work
- HOW DID WE GET HERE?
- HOW DOES THAT PICTURE COMPARE TO OTHER COUNTRIES' SYSTEMS?

Attainment: The Last 70 Years



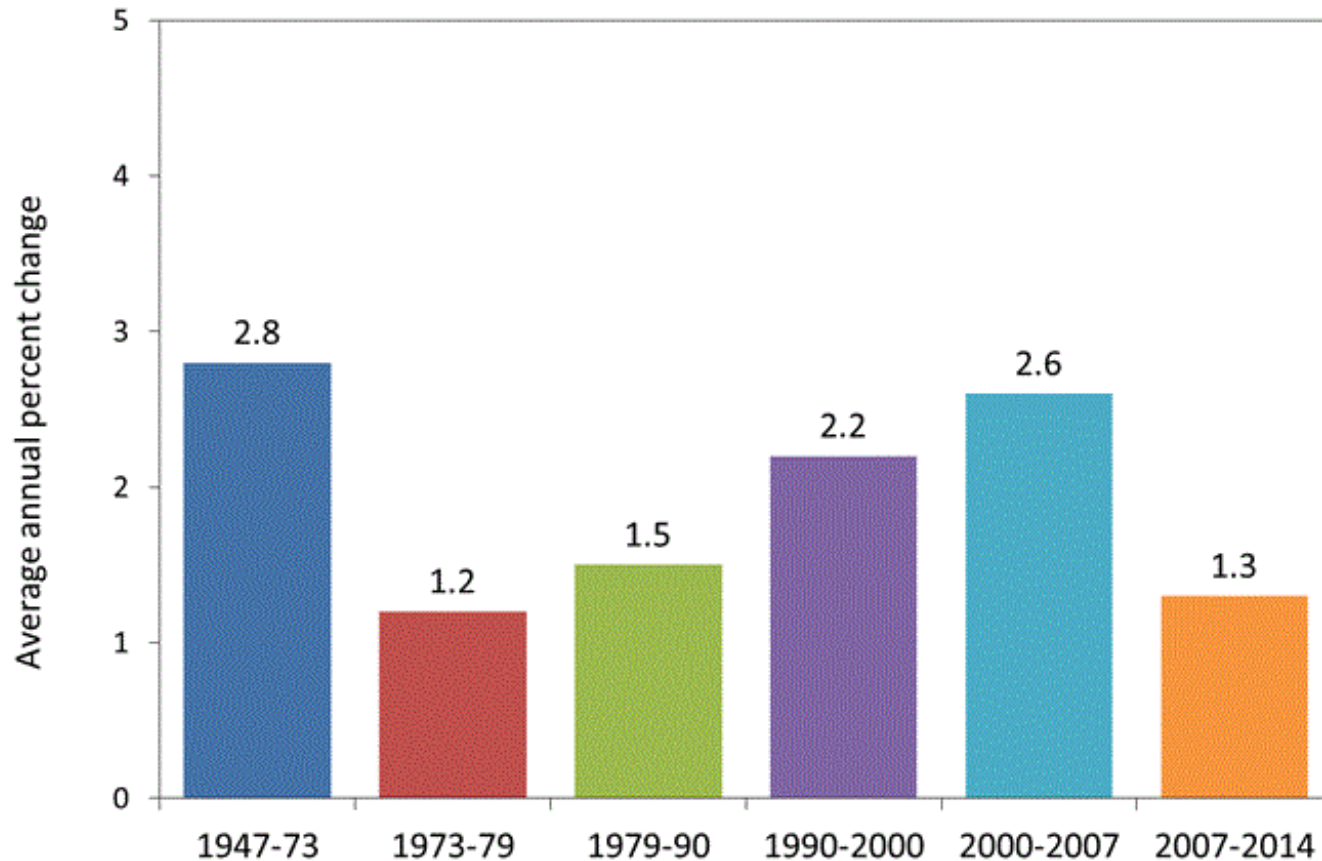
Figure 4. Percentage of persons 25 through 29 years old, by highest level of educational attainment: Selected years, 1940 through 2013



Labor Productivity: The Last 65 Years



Productivity change in the nonfarm business sector, 1947-2014

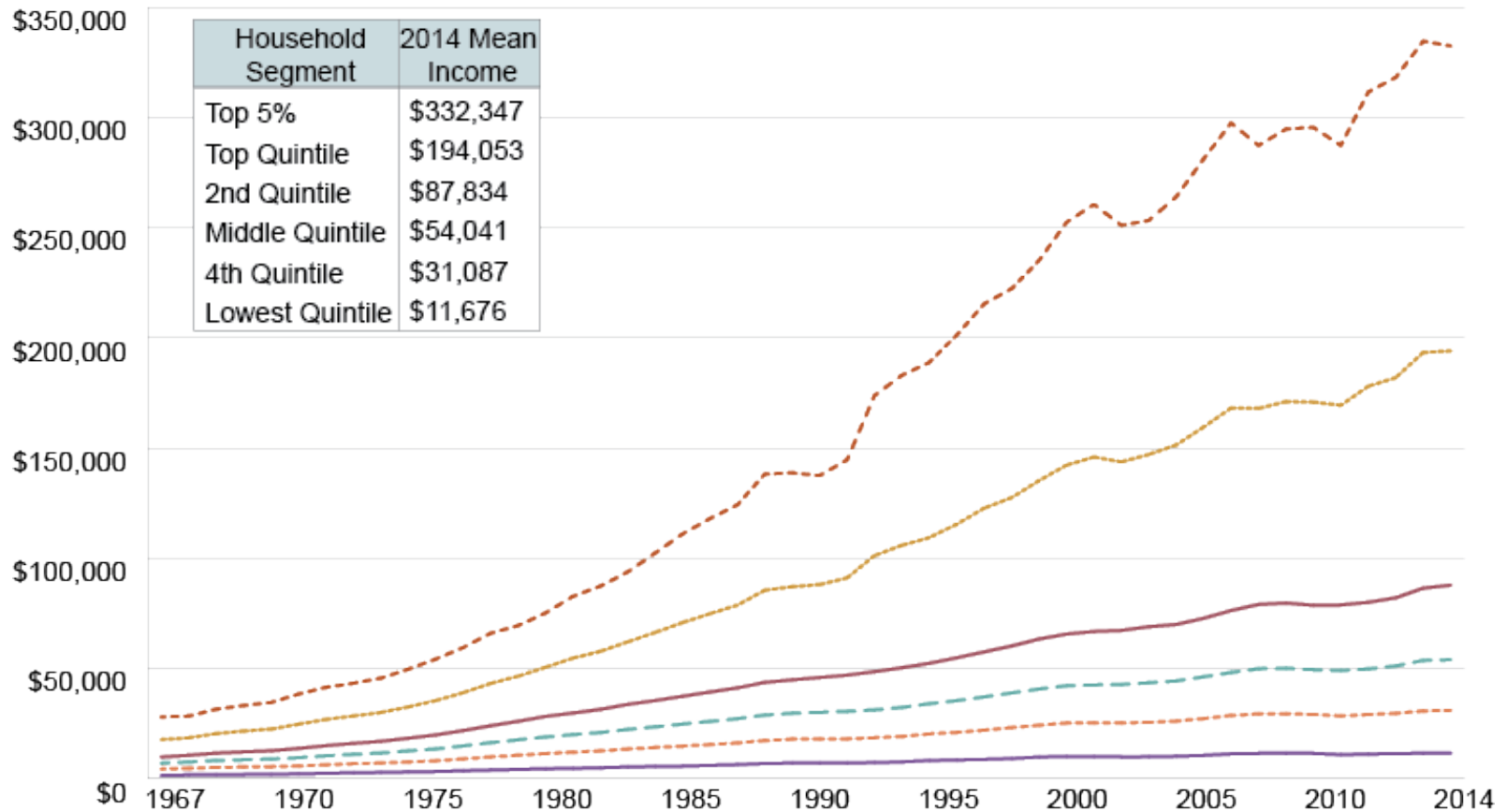


Source: U.S. Bureau of Labor Statistics

Income Distribution: The Last Half Century



Mean (Average) Household Income by Quintile and Top 5%



Source: Census Bureau

Race Between Education and Technology

Goldin and Katz



- From mid-19th Century, U.S. paces the rest of the world in attainment
 - 19th Century: universal primary school education
 - Early 20th Century: universal secondary school education
 - Mid-20th Century: access to postsecondary education
- Sustained growth of American economy; *most even* distribution of income in industrialized world
- Attainment growth *stops* in the 1970s
- Productivity growth *slows*, family income *flattens*, distribution of income becomes *least* equal

80's, 90's and 00's: Global Economic Change



- **Low wage competition**
 - Low skill
 - High skill
 - All skill levels
- **Automation of jobs involving routine work**
- **Vast extinction of low-skill, routine work jobs in high-wage countries**

How the US Responded — Reform Agenda Since 1970's

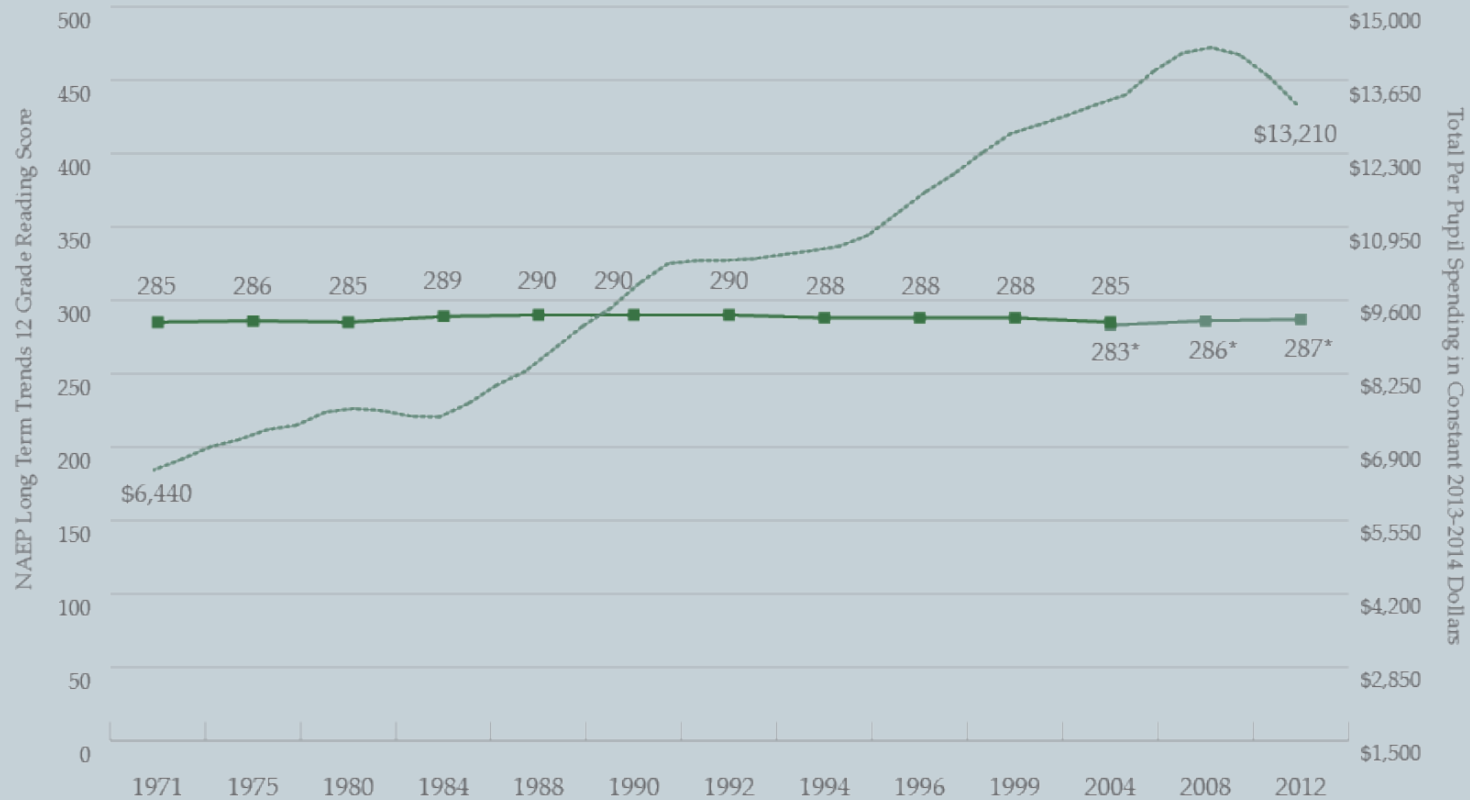


- More money (more than 250% growth in last 20 years)
- Lower class size
- School competition (charters and vouchers)
- Technology
- Tough test-based teacher-accountability systems

What We Spent; What We Got For It



Per Pupil Spending and NAEP 12 Grade Reading Scores, 1971 to 2012



*Revised assessment format

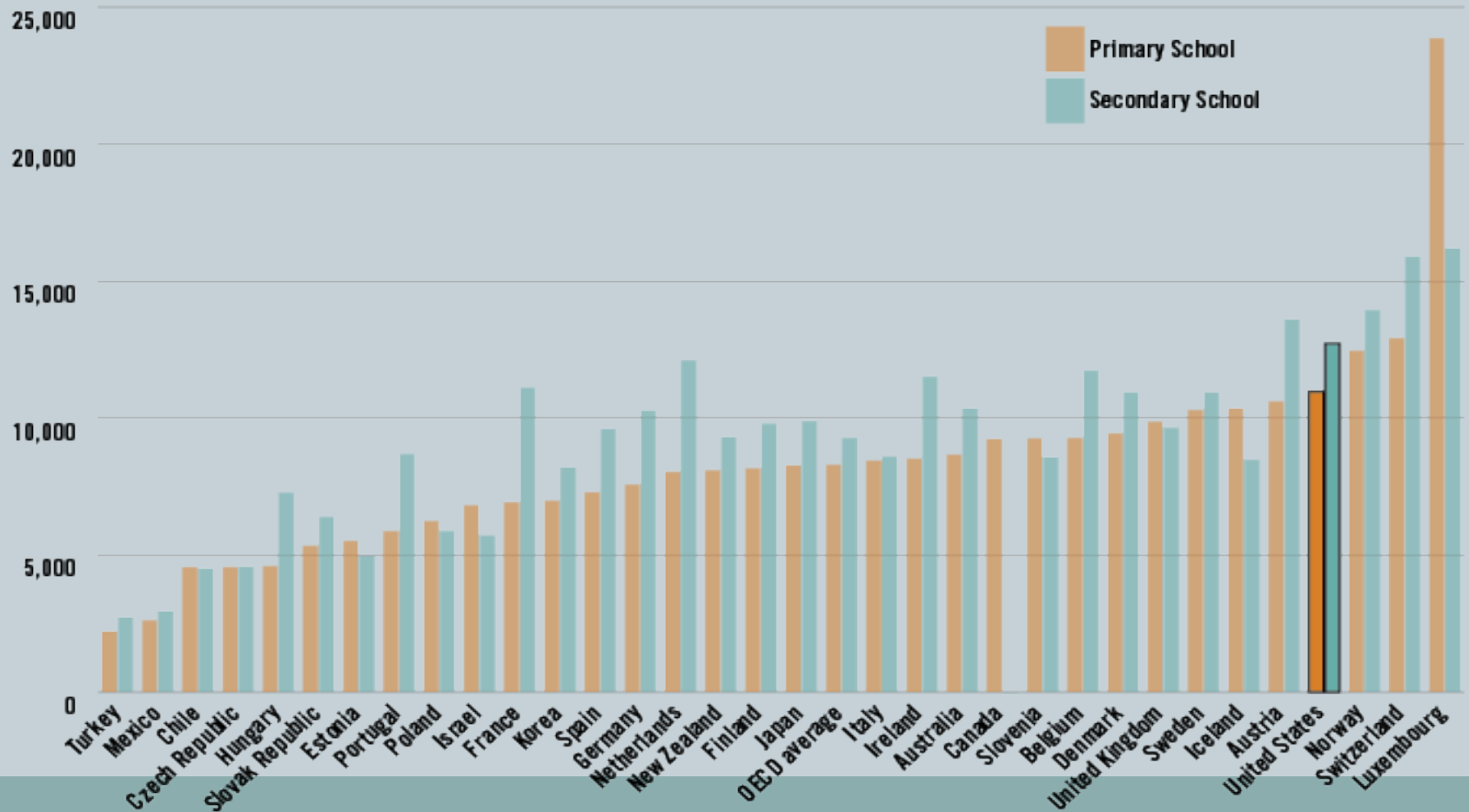
Sources: The Nation's Report Card "NAEP 2012 Long-Term Trends in Academic Progress"
NCES Digest of Education Statistics 2014

Spending Per Student



Per Pupil Expenditure by Country, 2011

Primary and secondary education, all services



Source: OECD Education At a Glance

Their Model vs. Our Model: The Results



US Rankings on PISA

	Reading	Mathematics	Science
2000 (32)	15	19	14
2003 (41)	18	28	22
2006 (57)	NR	34	28
2009 (65)	17	30	22
2012 (65)	24	36	28

U.S. Workforce Skills (PIAAC*)



- **OECD survey of the skills of all U.S. workers**
 - Reading: Average
 - Numeracy: Near the bottom with Ireland, Spain & Italy
 - Digital Problem Solving: Dead last
- **ETS analysis of 16 to 34-year-olds in survey**
 - At or near the bottom in reading, numeracy & problem solving
- **U.S. scores *declined* since last PIAAC survey**

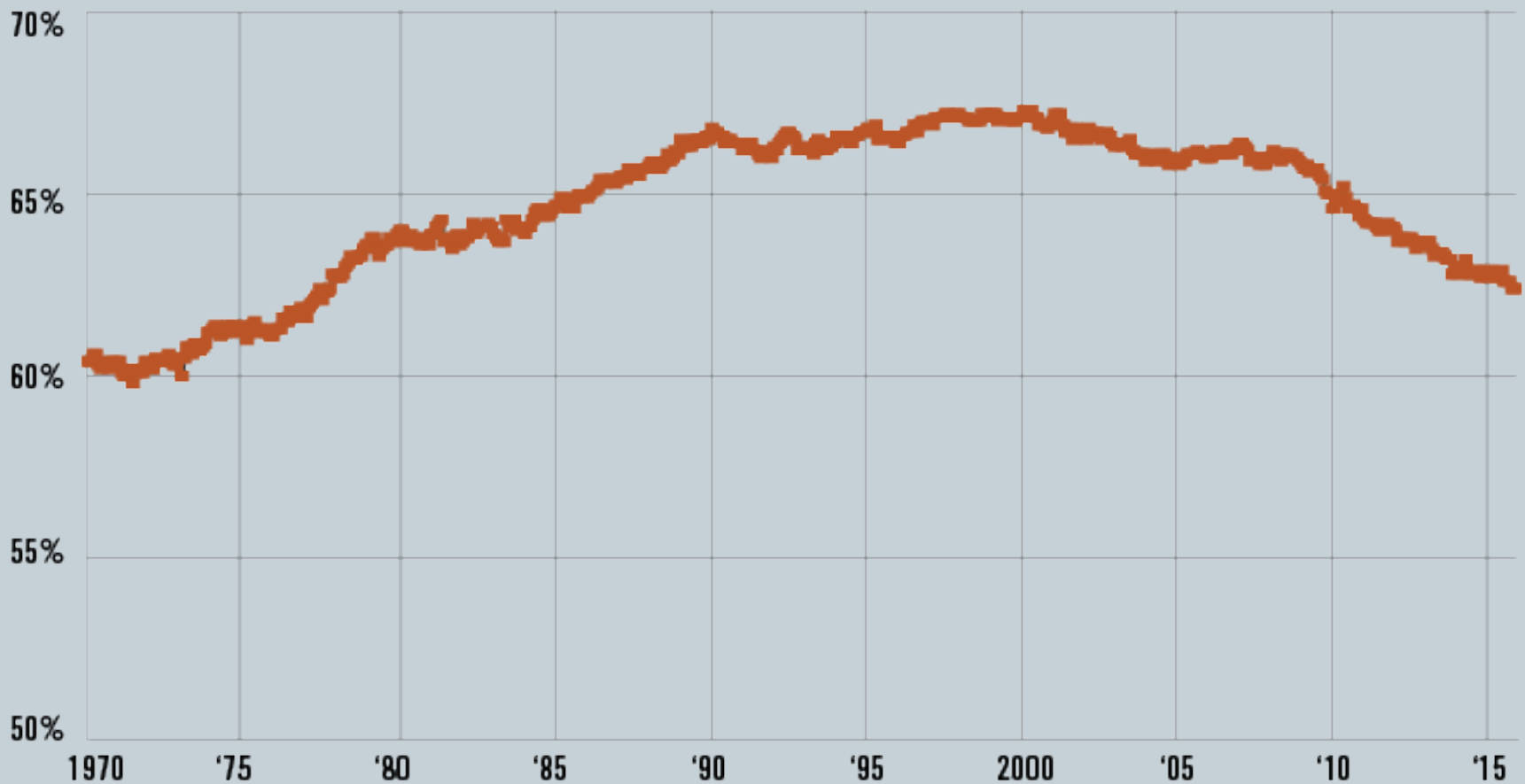
*Program for the International Assessment of Adult Competencies, OECD

Labor Participation: The Last 40 Years



Labor Force Participation Rate 1970-2015

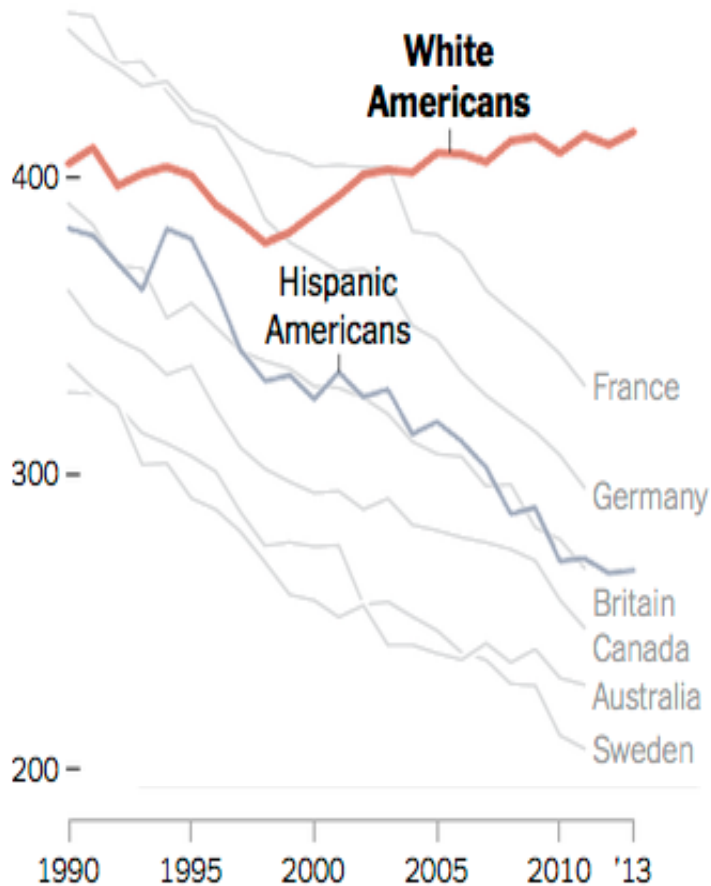
Ages 16 and over, seasonally adjusted



Source: Bureau of Labor Statistics

Mortality Rates in the U.S.

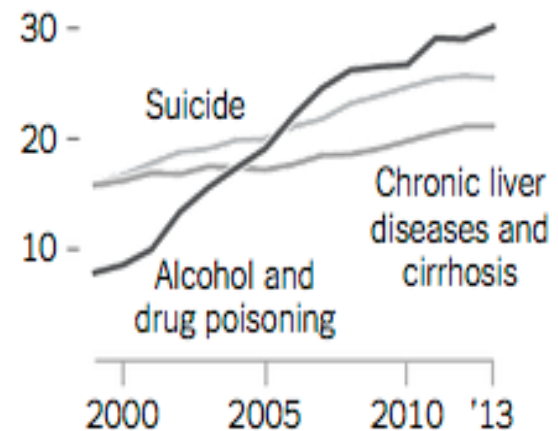
DEATHS per 100,000 people aged 45-54



Sources: Anne Case and Angus Deaton; PNAS

By The New York Times

INCREASING CAUSES OF DEATHS
Per 100,000 white Americans, 45-54



HOW THE TOP PERFORMERS GOT TO THE TOP



THE 9 BUILDING BLOCKS FOR A WORLD-CLASS STATE EDUCATION SYSTEM

Our Competitors Had a Different Analysis



- Did not double down on the old model (inexpensive teachers; low standards)
- That model designed to produce majority of graduates with little more than an 8th grade level of literacy
- Knew the jobs available to them would rapidly decline
- Needed to provide to virtually all a kind and quality of education until then available only to their elites—for no more money than the old model
- That required a whole new model

Education Reform Agenda of the Top-Performing Countries



- 1. Strong supports for children and their families**
- 2. More resources for harder to educate students**
- 3. World-class, highly coherent instructional systems**
- 4. Qualification systems with multiple no-dead-end pathways for students**
- 5. Abundant supply of highly qualified teachers**

Education Reform Agenda of the Top-Performing Countries



6. Schools organized and managed to attract high quality candidates into teaching and to enable them to do their best work
7. An effective system of career and technical education and training
8. Leadership development system that develops leaders who can manage such systems effectively
9. Coherent governance system capable of implementing effective systems at scale

WHAT'S AT STAKE FOR COLORADO



- Colorado has been moving from a natural resource-based economy not heavily dependent on high literacy and high skills to a modern digitally-based economy absolutely based on high skills
- The question is whether Colorado wants to be a top global competitor; if it does, it will have to match the educational achievements of its top global competitors
- If it does, it will have to recognize that it is far behind on teacher quality and its graduating high school students are even less college-ready than those of the nation as a whole

WHAT'S AT STAKE FOR COLORADO



- **The state wants to seize the brass ring on career and technical education but no nation can build a first-rate career and technical education system on a poor elementary and secondary system.**
- **There is no reason Colorado cannot catch up to the global leaders; it just needs to decide whether it wants to do what it will take**