

# Pathways or Pipelines

**David Stern**

Graduate School of Education  
University of California, Berkeley

Prepared for presentation to the National Academy of Sciences  
Symposium on the Supply Chain for Middle-Skill Jobs: Education,  
Training, and Certification Pathways  
Washington, D.C.  
June 24, 2015

# Overview

- Evolution of high school vocational education to CTE
- Dilemma for high schools: gap between student aspirations and attainment of bachelor's degrees
- College-and-career pathways: keeping students' future options open

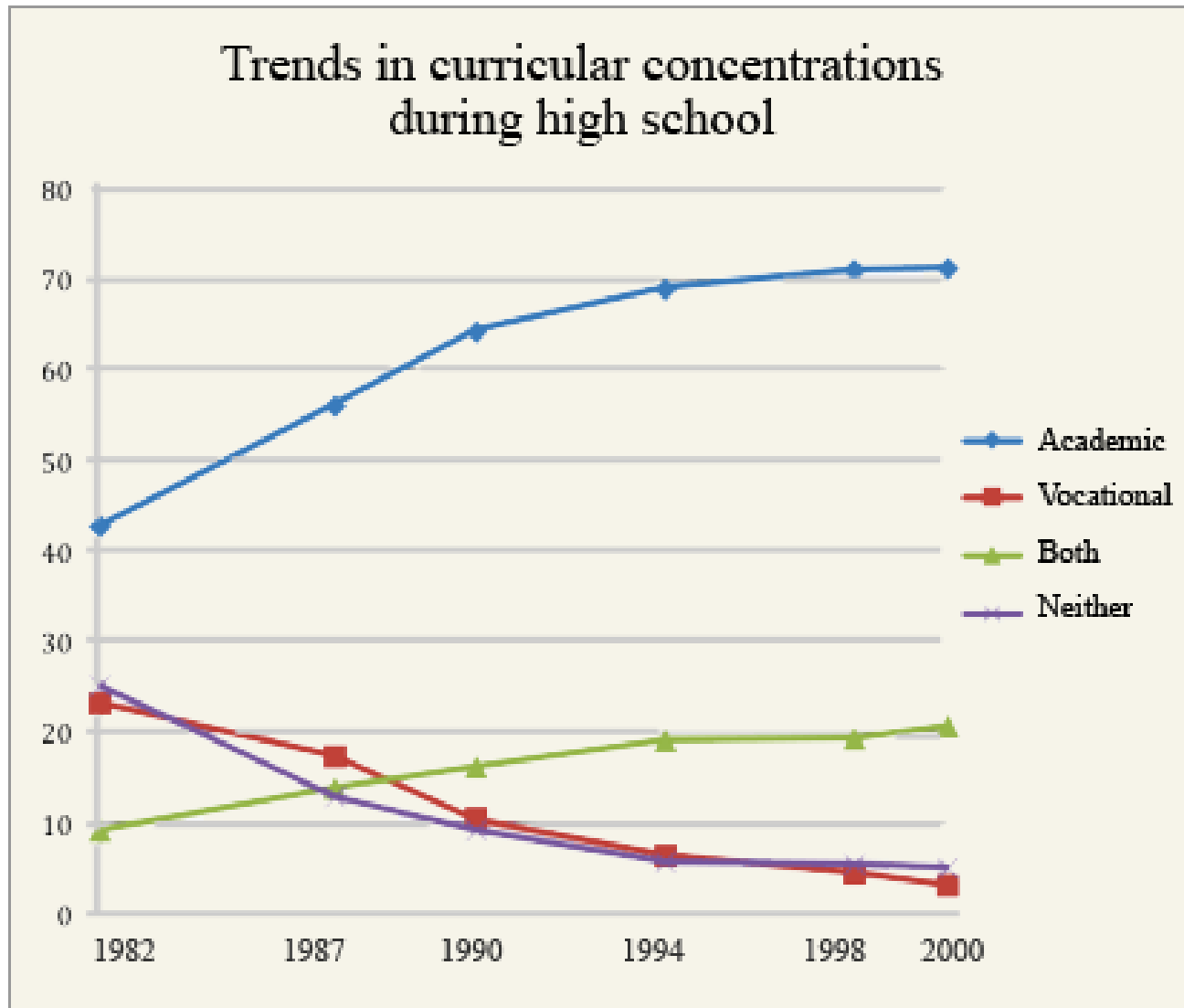
# Percentage of high school graduates taking voc ed or CTE

	1982	1990	2000	2005	2009
Took at least one CTE credit	95	88	89	87	85
Took 3 or more CTE credits in the same occupational area (“concentrators”)	33	24	23	21	19

# Evolution of vocational to career-technical education

- 1917 Smith-Hughes Act
- 1984 NAS Panel publishes *High Schools and the Changing Workplace, the Employers' View*
- 1984 California starts funding career academies
- 1987 SREB launches *High Schools That Work*
- 1990 Perkins Act requires “integration” of academic and vocational education
- 2006 Perkins Act renames voc ed as CTE and removes non-baccalaureate definition
- 2014 OVAE renamed OCTAE

# Non-college track disappearing



# But gaps still remain

- 2009 National High School Transcript Study found 45 percent of graduates who completed 4 or more CTE courses also completed the coursework deemed necessary to qualify for a 4-year college, compared to 74 percent of graduates who took no CTE at all
- 2014 NACTE panel: “exemplary CTE programs are seen as exceptions to mainstream options. CTE is still perceived by many as an alternative to rigorous academics—a separate track for students who are not college bound.”

# And CTE still enrolls a larger share of non-affluent students

Percent of CTE concentrators among:	1982	1992	2004
Lowest socioeconomic quartile	40	31	21
Middle 2 socioeconomic quartiles	32	22	19
Highest socioeconomic quartile	15	10	12
Black	31	17	18
Hispanic	34	16	13
White	29	21	19

# Dilemma for high schools

- Large majority of students expect to earn a bachelor's or advanced degree, and high schools want to respect those aspirations.
- But only about one-third of students actually will earn bachelor's degrees, and high schools want to prepare all students to make a living.

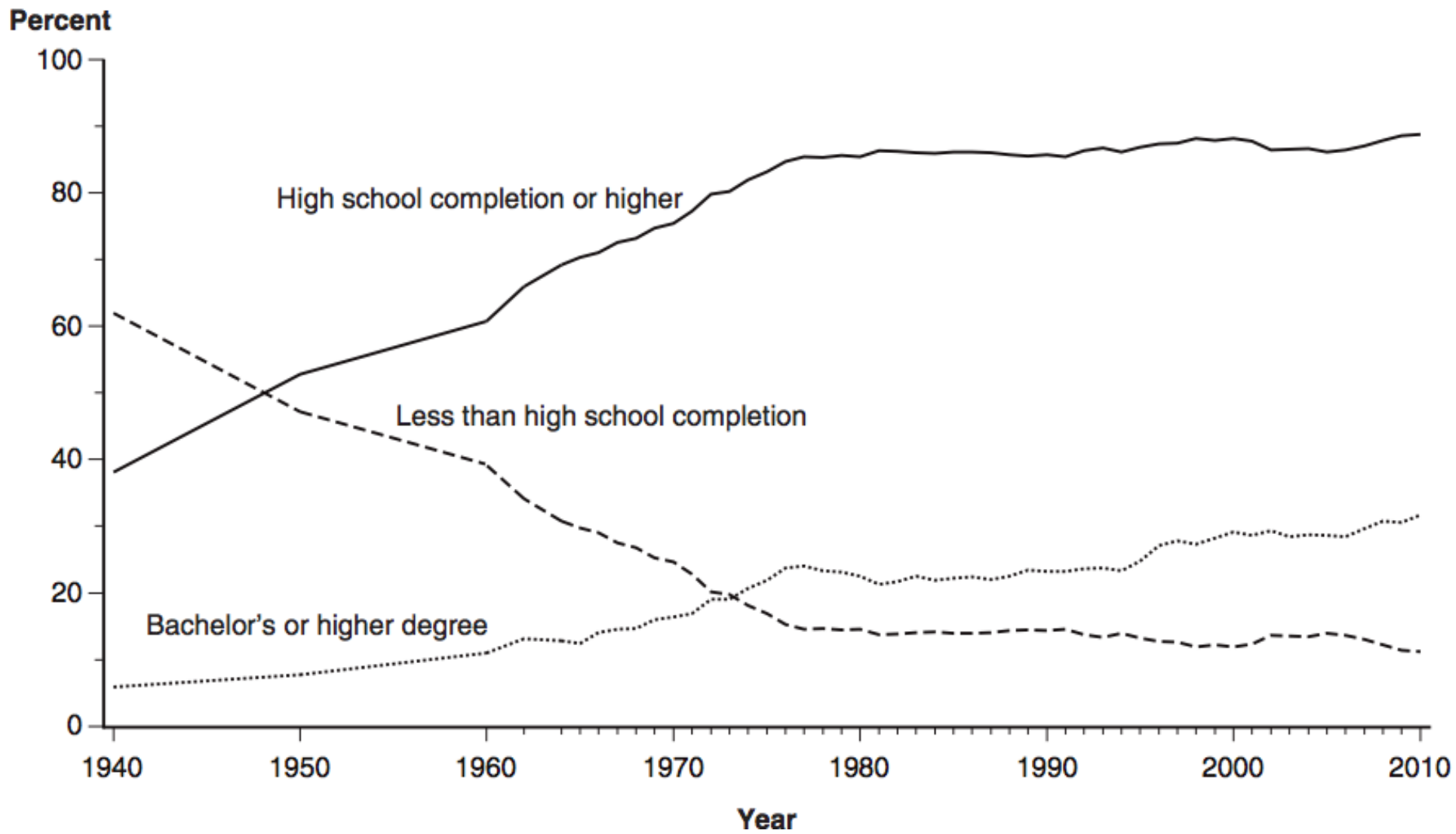


# Percent of high school seniors expecting to earn degrees

	1982	1992	2004
CTE nonparticipants			
High school or less	8	1	3
Some college	25	15	13
Bachelor's degree	34	38	34
Graduate or professional degree	34	41	45
Don't know	—	5	5
CTE concentrators			
High school or less	29	10	8
Some college	50	41	28
Bachelor's degree	14	28	30
Graduate or professional degree	8	15	24
Don't know	—	7	9



**Figure 4. Percentage of persons 25 through 29 years old, by highest level of educational attainment: Selected years, 1940 through 2010**



# Two solutions to dilemma

1. Pipelines from high school into middle-skill jobs not requiring bachelor's degrees.
2. Career-themed pathways to a whole range of postsecondary educational options. Probably preferable because:
  - Only 1 out of 7 CTE concentrators now stay in same field after high school.
  - High school students will need to adapt to unpredictable change in technologies and work.
  - Trying to keep all options open makes pathways attractive to students who want bachelor's degrees.

# College-and career pathways

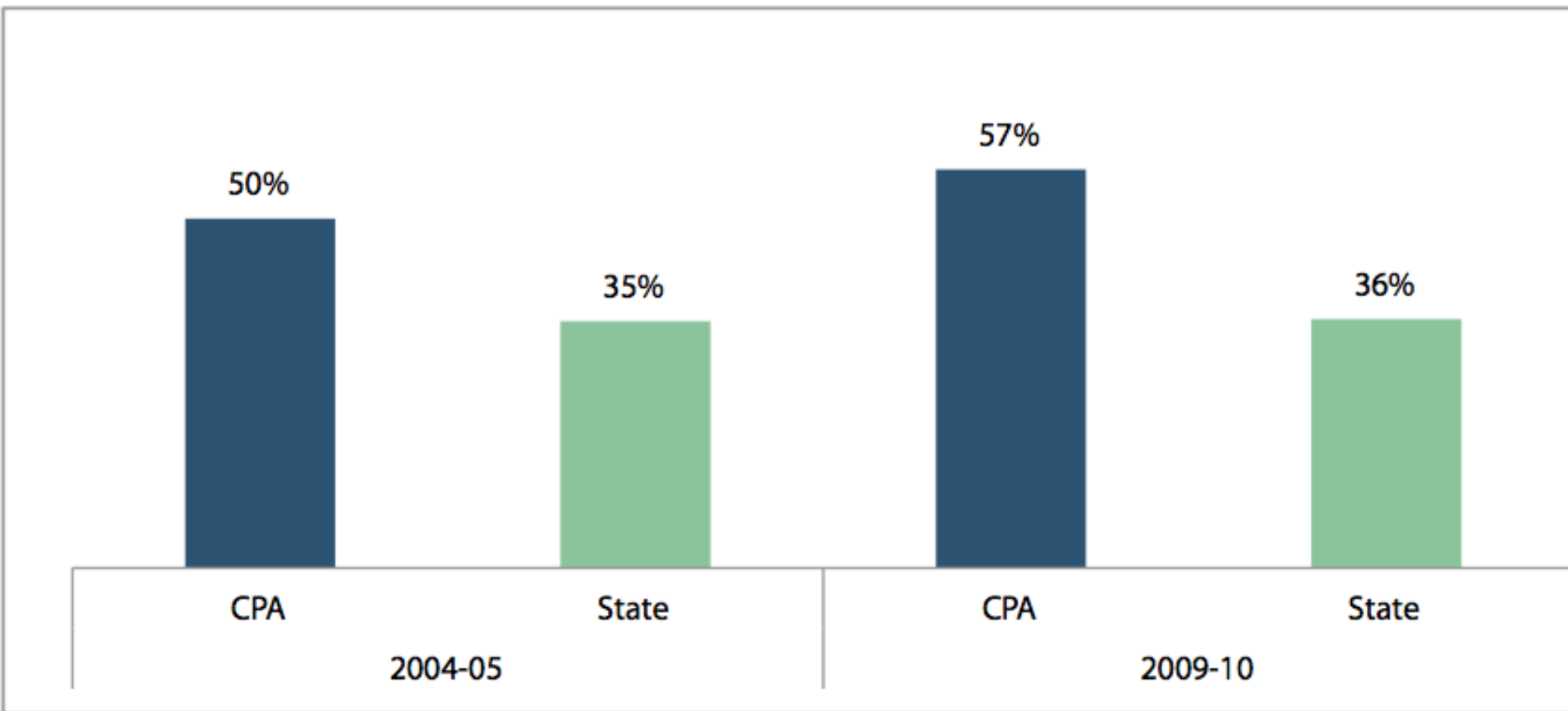
- Expand options for students: combine college **and** career preparation!
- Multi-year sequence of college-prep and CTE courses, combined with work-based learning.
- Students receive personal support.
- Cohort scheduling helps with integrating curriculum and with student support.

**Pathways that combine these features have been found to improve high school students' preparation for both**

- **employment**  
**and**
- **postsecondary education**

**Eight years after high school, MDRC found students assigned to career academies earned 11 percent more than non-academy students. For males, the difference was 17 percent — nearly \$30,000 over eight years.**

# California Partnership Academy graduates exceed state average completion of courses for UC or CSU



# Conclusions

- Graduates of college-and-career pathways can fill middle-skill jobs, as long-term careers or while continuing their education toward a bachelor's or advance degree.
- Building pipelines that constrain students' future options is unnecessary and possibly counterproductive.
- Next Perkins Act could allow baccalaureate institutions to receive funds as part of state or regional consortia.