EARLY EDUCATIONAL EXPERIENCES AND TRAJECTORIES OF COGNITIVE FUNCTIONING AMONG MID-LIFE AND OLDER U.S. ADULTS

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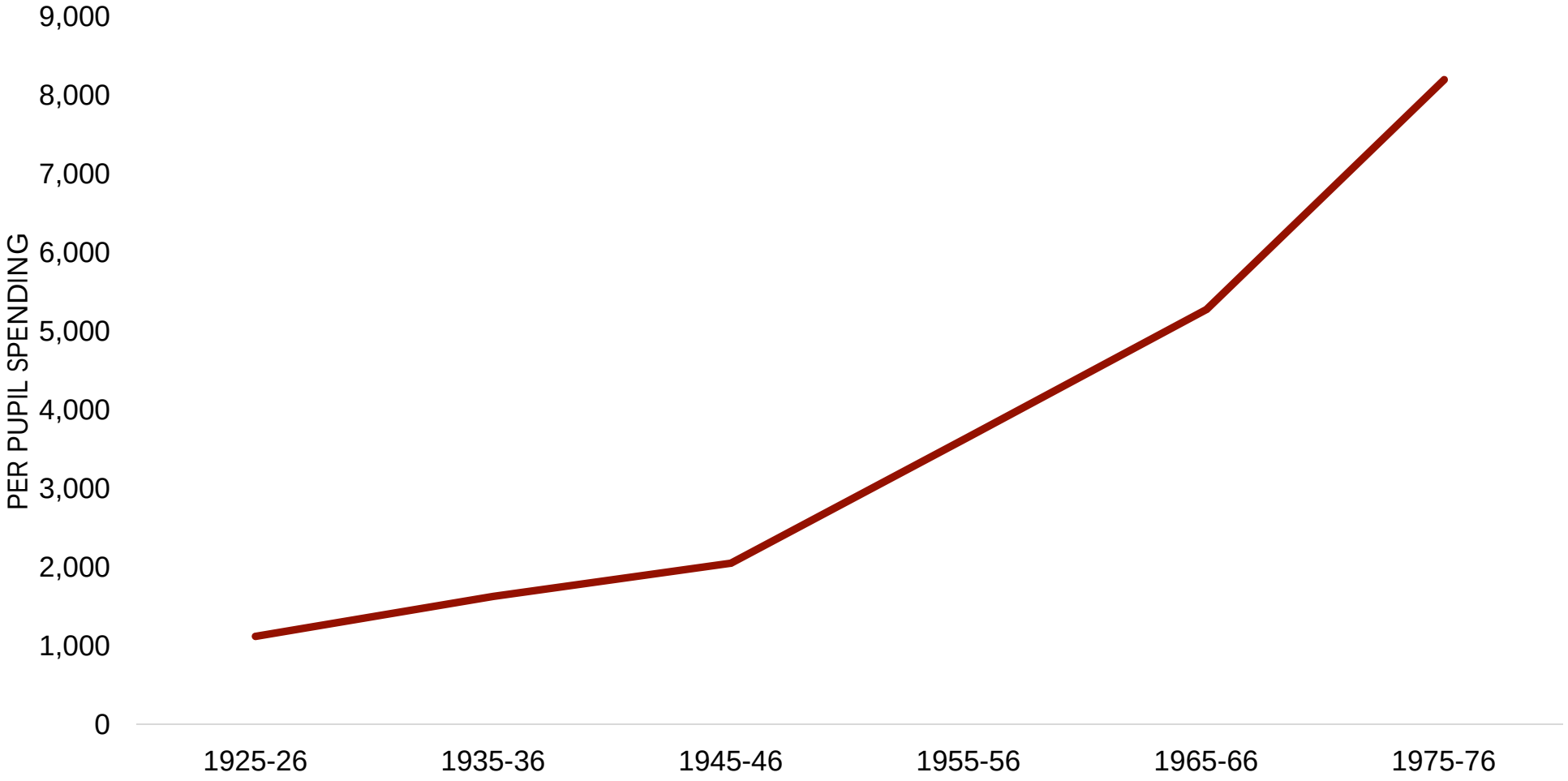
ATTAINMENT AND ADRD

- 1 in 10 U.S. adults age 65 and older with Alzheimer's Disease or Related Dementia (ADRD)
- Educational attainment most important protective factor
- Related to cognitive functioning but not rate of cognitive decline

ATTAINMENT IS INSUFFICIENT

- Only captures quantity of education
- Other aspects of education left unexamined
  - School context
  - Educational content
  - Academic ability

Per Pupil Spending in Average Daily Attendance, United States, 1925 - 1976 (2019 Dollars)

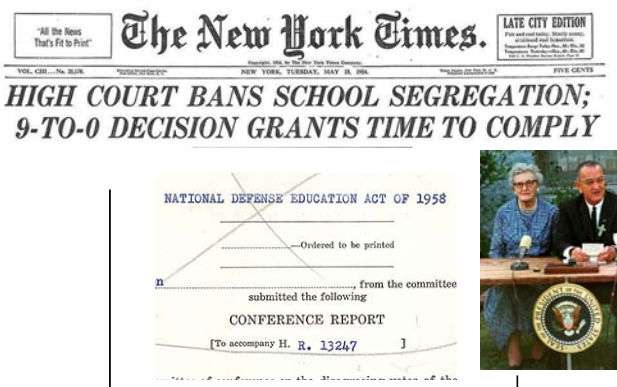


Source: Table 22 Total and current expenditures and expenditure per pupil in public elementary and secondary schools, by purpose: 1869-80 to 1989-90; 120 Years of American Education: A Statistical Portrait, National Center for Education Statistics

1st compulsory school law, 1857; last 1917

Pierce v Society of Sisters, 1925; Children cannot be compelled to attend public instead of private school

School lunch act of 1946



Elementary and Secondary School Act, 1965 to educate poor children

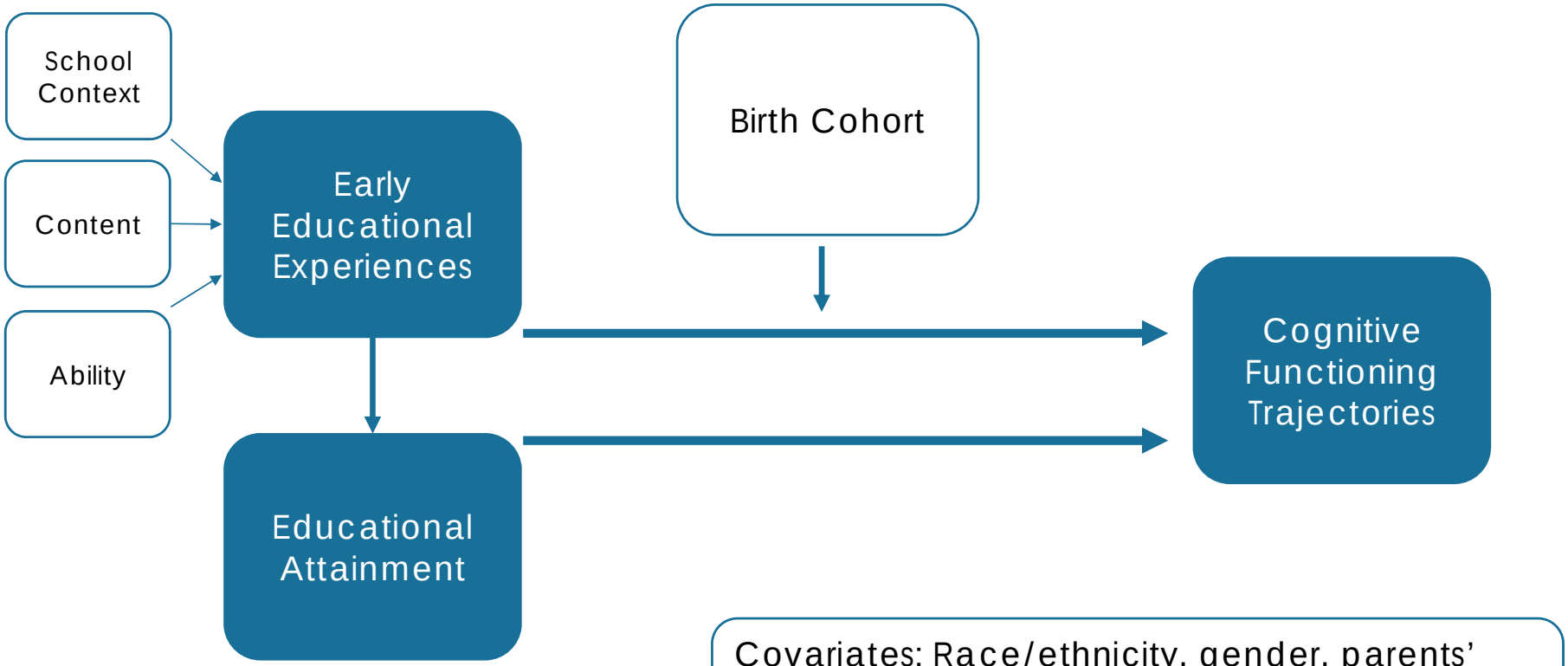
Title IX, 1972

Bilingual Education Act, 1968

1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980

Timeline of Important Educational Policies and Supreme Court Decisions in the United States, 1925 -1980

CONCEPTUAL FRAMEWORK



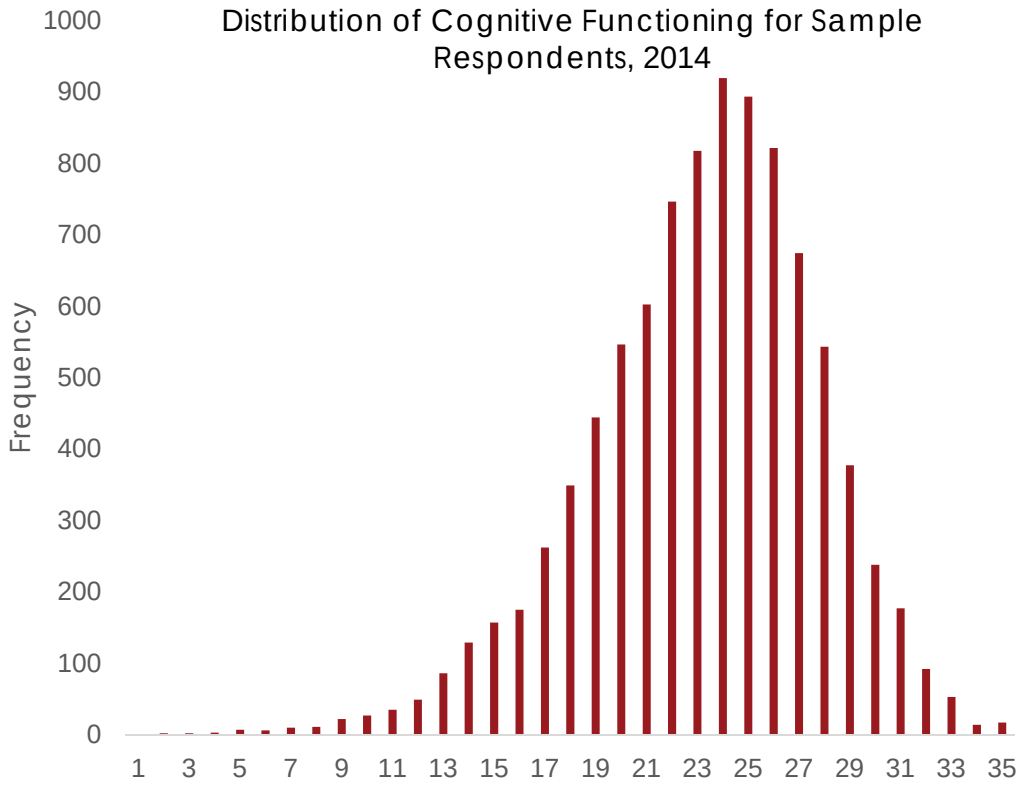
Covariates: Race/ethnicity, gender, parents' education, # of books in childhood home, self-rated health in childhood, proxy LHMS interview

DATA AND SAMPLE

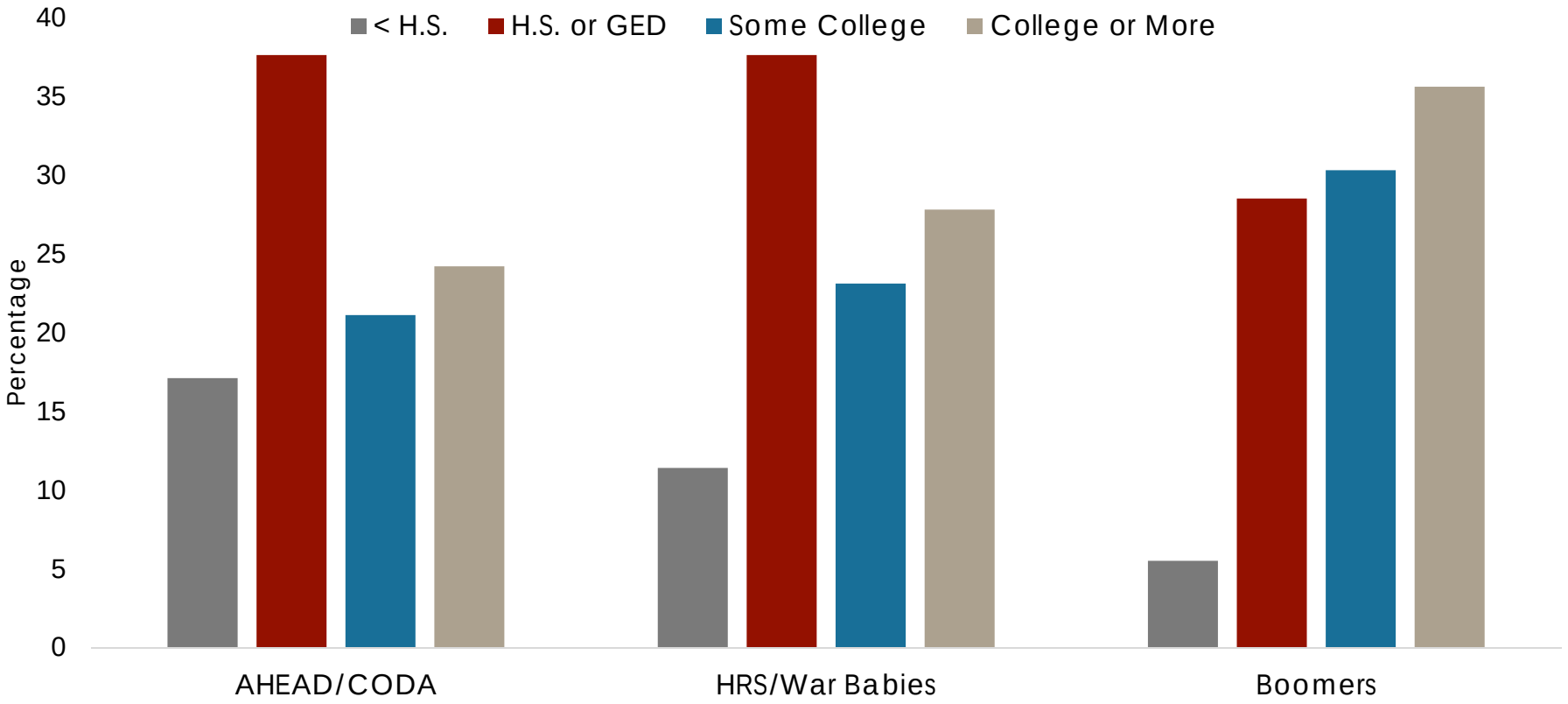
- Health and Retirement Study (HRS)
  - Life History Mail Survey (LHMS; 2015, 2017; n=10,325)
  - Age-eligible HRS respondents who completed LHMS
  - Provided cognitive functioning at least once (1998-2014)
  - Attended at least primary school
  - N=9,565 respondents
  - 62,037 person-period observations

COGNITIVE FUNCTIONING

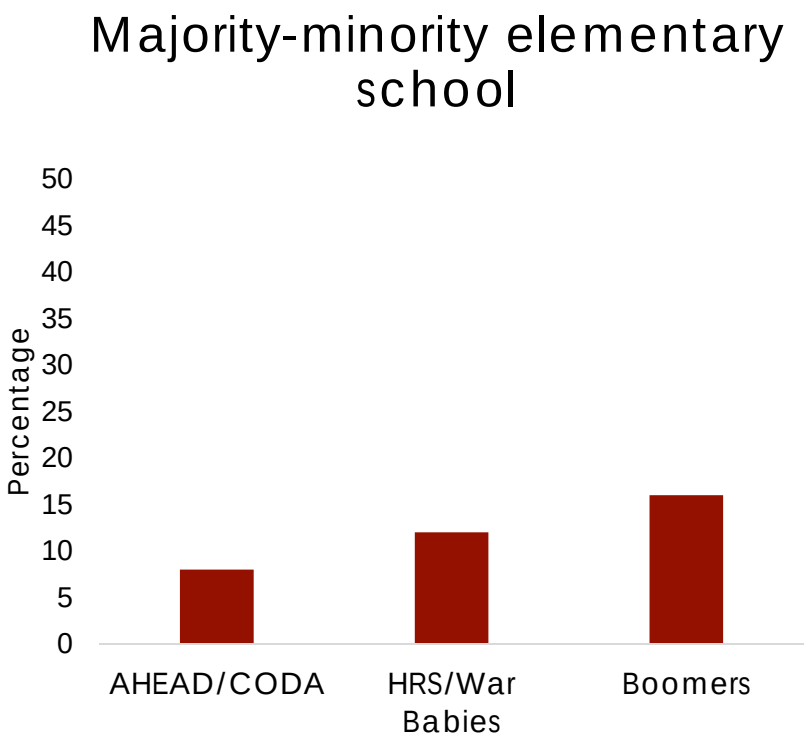
- Modified TICS scale
  - Immediate word recall test
  - Delayed recall test
  - Serial 7's
  - Backwards counting
  - Naming (day, date, president, vice-president, two objects)
  - Range: 0 – 35

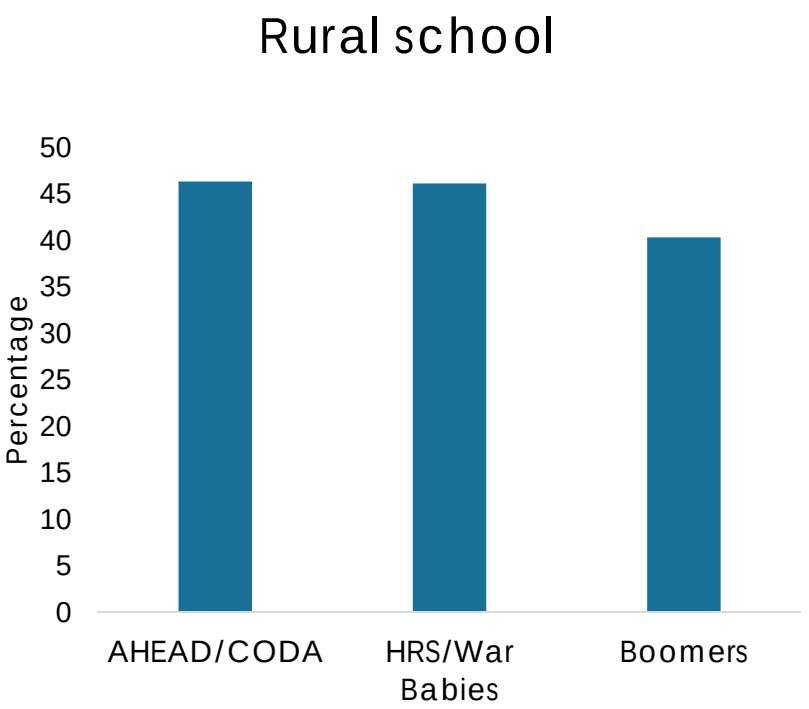


EDUCATIONAL ATTAINMENT

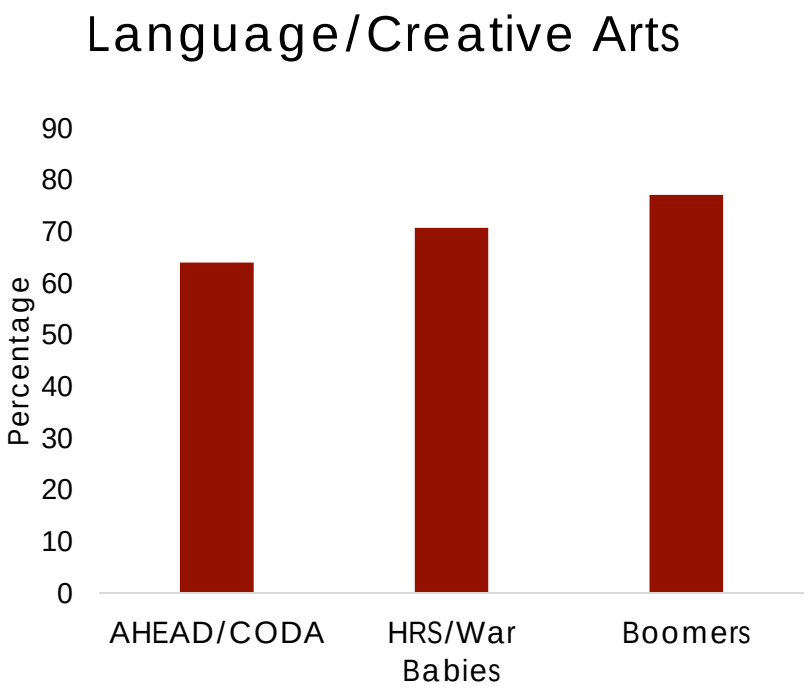


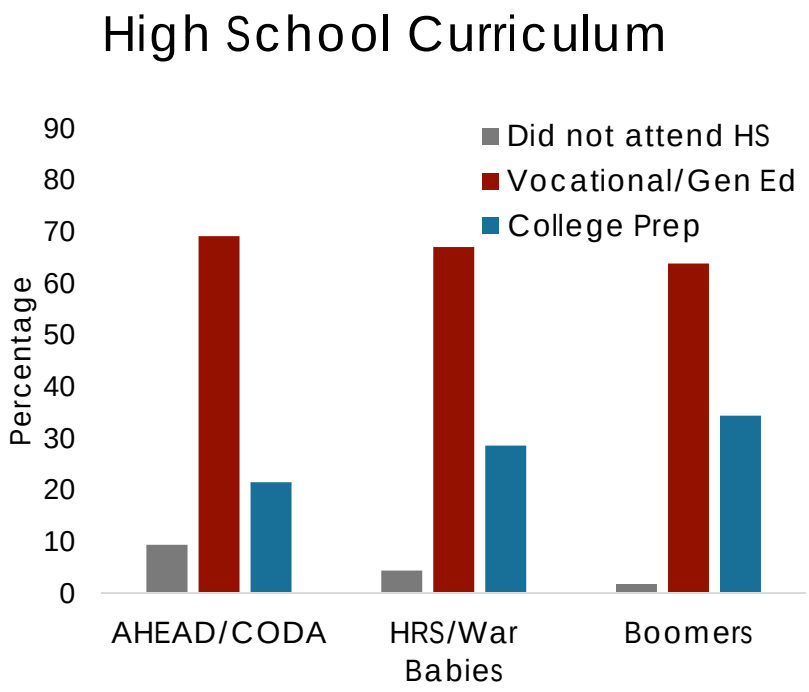
SCHOOL CONTEXT



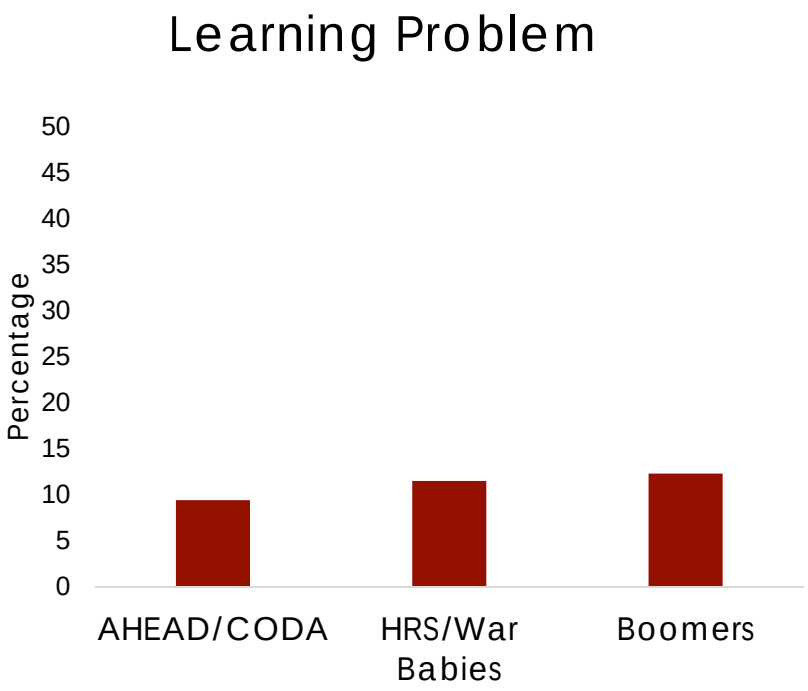


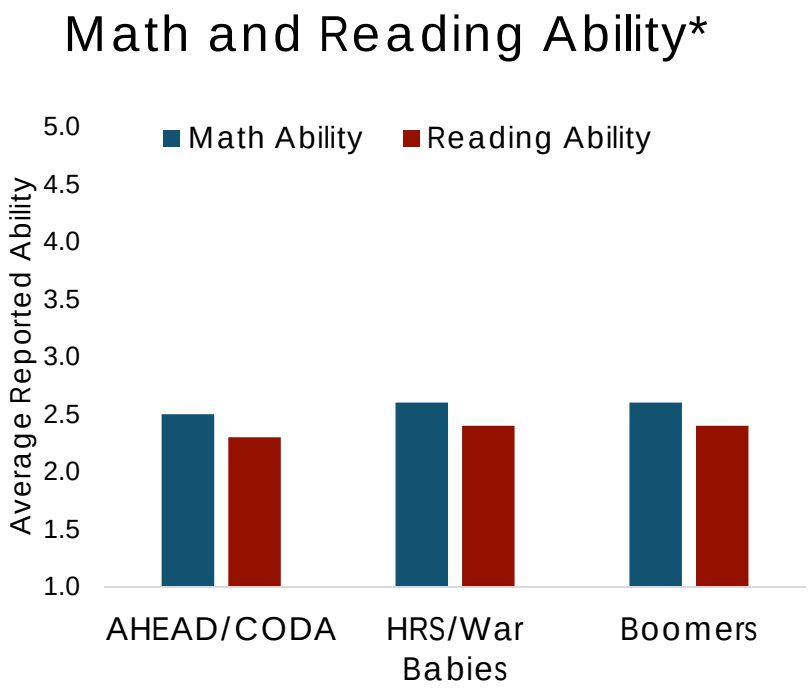
EDUCATIONAL CONTENT





ACADEMIC ABILITY





*Scale for ability: 1=much better than peers; 5=much worse than peers

LINEAR MIXED MODELS

	Without Attainment	Adjusted for Attainment
At age 65		
Majority-minority elem. sch	-0.43*	-0.45*
Rural school	-0.45*	-0.34*
Language/creative arts	0.71*	0.36*
H.S. curriculum		
Never attended H.S.	-2.04*	-0.92*
Vocational/general ed.	-0.56*	-0.25*
Learning problem	-0.88*	-0.80*
Reading ability	-0.28*	-0.18*
Math ability	-0.47*	-0.42*
Age	-0.15*	-0.15*

Notes: Adjusted for race/ethnicity, gender, parents' education, # of books in childhood home, childhood health, proxy IW, and cohort. All models interact early educational experiences, attainment, and controls with age, but educational experiences and attainment unrelated to slope. *p<0.05

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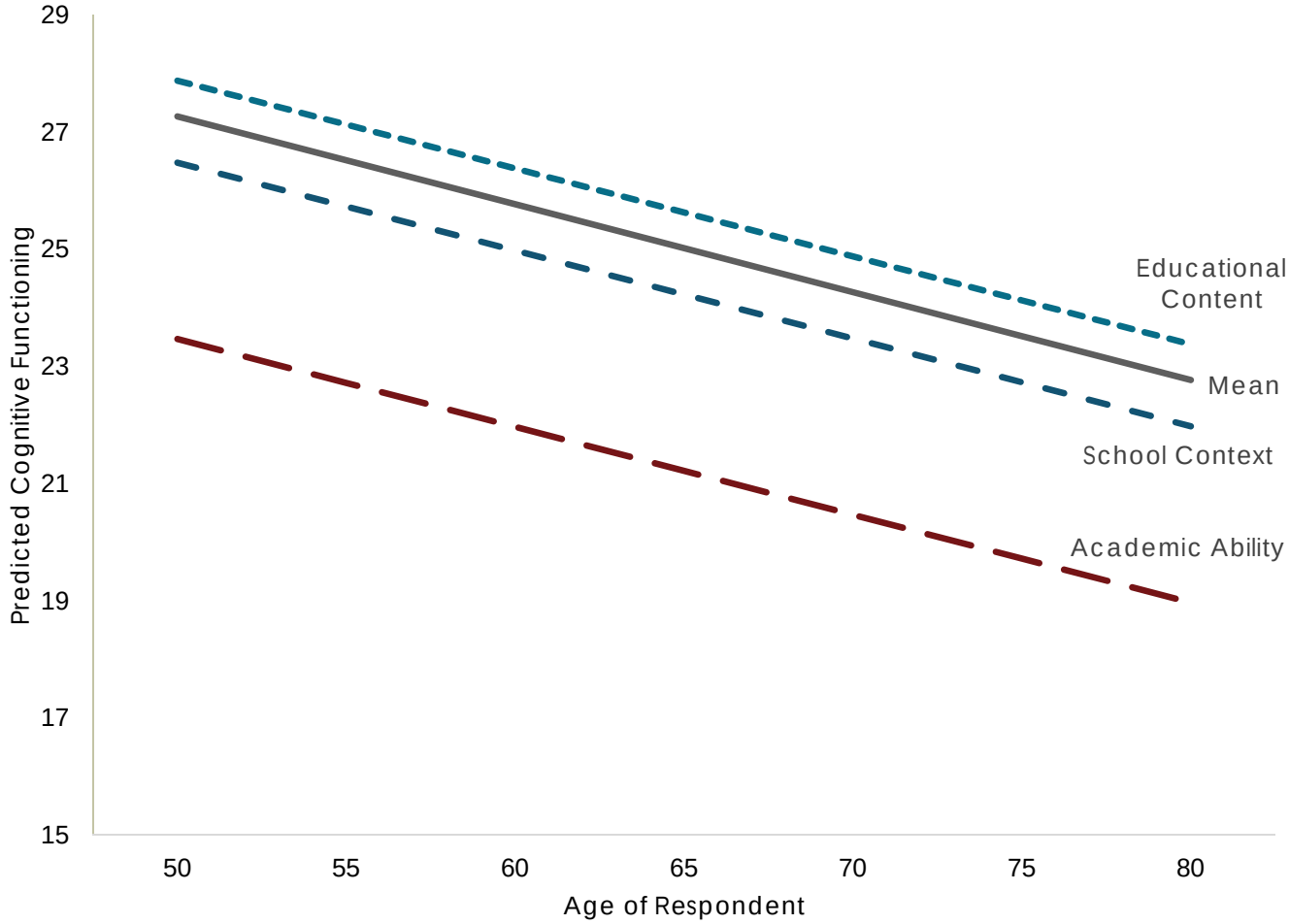
Predicted Cognitive Functioning by Educational Content, School Context, and Academic Ability after Adjustment for Educational Attainment and Childhood SES, HRS-LHMS, n=9,565



	b
<H.S.	-3.16
H.S./GED	-1.50
Some College	-0.81

Notes: Mean represents trajectory for non-Hispanic White men in HRS/War Babies cohort with high school diploma; Educational Content represents difference from mean trajectory when respondents were involved in language/creative arts and in college preparatory curriculum; School Context represents difference from mean trajectory when respondents attended a majority-minority school in a rural area.

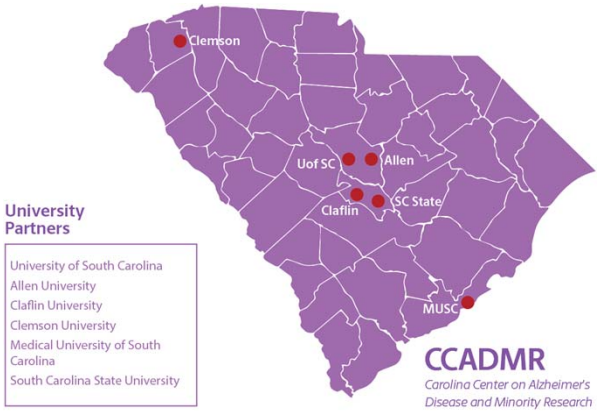
STRATIFIED BY COHORT

	AHEAD/CODA	HRS/War Babies	Boomers
At mean age of cohort			
Majority-minority elem. sch	0.23	-0.36	-0.64*
Rural school	-0.44	-0.38*	-0.26*
Language/creative arts	0.24	0.39*	0.31*
H.S. curriculum (ref=college prep)			
Never attended H.S.	-0.83*	-1.20*	-0.58
Vocational/general ed.	-0.12	-0.25*	-0.31*
Learning problem	-0.83*	-0.80*	-0.64*
Reading ability	-0.26	-0.18*	-0.16*
Math ability	-0.28*	-0.50*	-0.39*
Age	-0.25*	-0.15*	-0.02*

Notes: Adjusted for race/ethnicity, gender, parents' education, # of books in childhood home, childhood health, proxy IW. All models include age as measure of time, but do not interact indicators with time. *p<0.05

IMPLICATIONS

- Context, content, and ability related to cognitive functioning, not decline
- Cohort differences may reflect socio-historical changes
- Early educational experiences have lasting impact
- Broaden our conceptualization and measurement of education in ADRD research



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