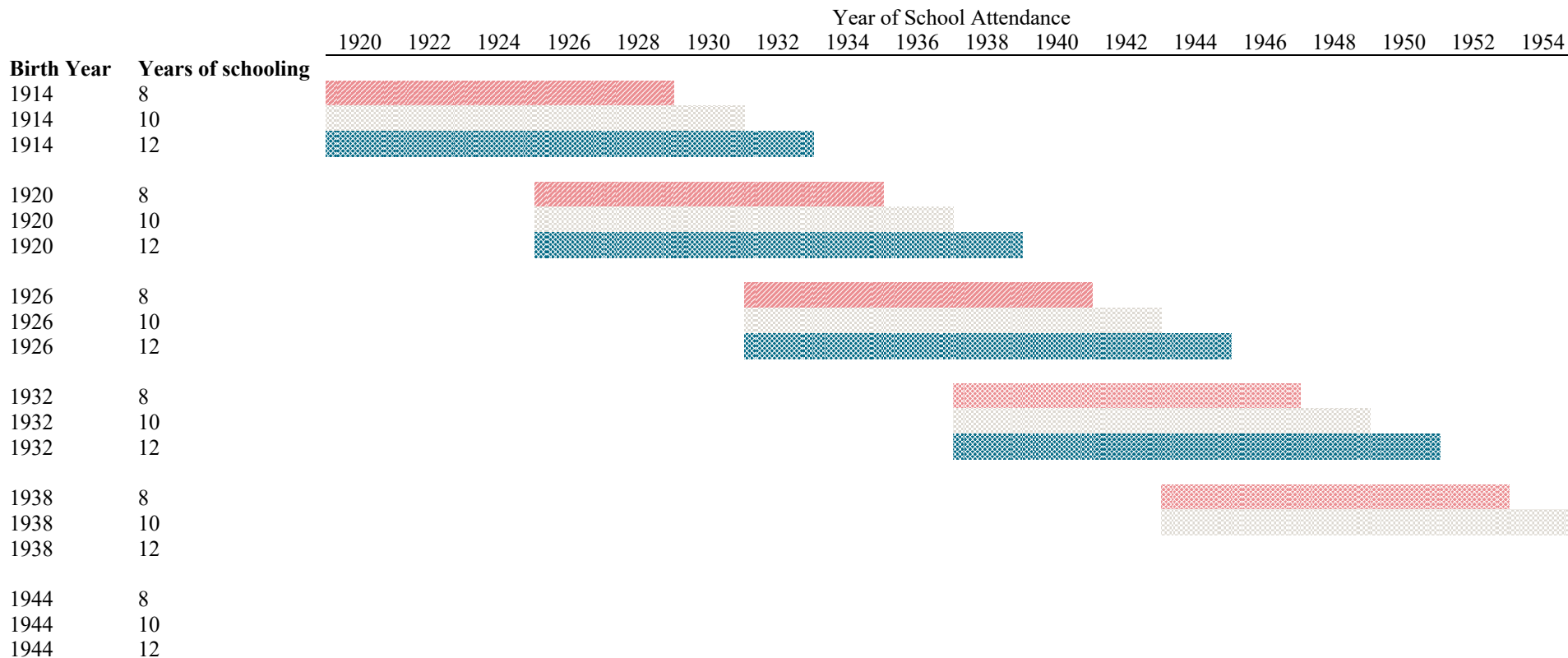**Supplemental Table S1. Examples of included and excluded birth years in our sample**

Selected examples of respondents who would be included or excluded from our sample based on birth year, years of school attendance, and our inclusion criteria that respondents began primary school in or after 1919 and completed primary/secondary schooling by 1954.

		Year of School Attendance
		1920 1922 1924 1926 1928 1930 1932 1934 1936 1938 1940 1942 1944 1946 1948 1950 1952 1954
Birth Year	**Years of schooling**	
1914	8	
1914	10	
1914	12	
1920	8	
1920	10	
1920	12	
1926	8	
1926	10	
1926	12	
1932	8	
1932	10	
1932	12	
1938	8	
1938	10	
1938	12	
1944	8	
1944	10	
1944	12	

Notes: Shaded years are the years that we assume respondents were attending school based on their birth year and self-reported years of schooling attended. We assumed that respondents began primary school at age 6. To be included in the sample, respondents would need to have BSE data on school attendance for all years they were in school. Thus, respondents born in 1938 who reported 8 years of schooling would be included in our sample, but respondents born in 1944 who completed 8 years of schooling would not because the BSE data is only available through 1954 and respondents born in 1944 who completed 8 years of schooling would need BSE data through 1958.

Supplemental Table S2. Estimates from models using non-top coded education measures
Estimates from linear mixed models predicting cognitive functioning, episodic memory, and working memory among Black and White older adults who resided in U.S. South during school using education measures that included post-secondary years, Health and Retirement Study (n=4,343)

	Model 1		Model 2		Model 3	
	At 73	Age	At 73	Age	At 73	Age
Cognitive Functioning						
Black	-3.44*	0.11	-2.37*	0.05	-1.97*	0.02
	(0.15)	(0.11)	(0.13)	(0.11)	(0.14)	(0.12)
Years of schooling			0.51*	-0.08*		
			(0.03)	(0.03)		
Duration in school					0.60*	-0.07
					(0.04)	(0.04)
Constant	12.44*	-1.27*	13.82*	-1.73*	15.27*	-1.84*
	(0.26)	(0.20)	(0.23)	(0.21)	(0.25)	(0.23)
Episodic Memory						
Black	-1.79*	0.26*	-1.20*	0.17	-0.98*	0.14
	(0.10)	(0.09)	(0.10)	(0.09)	(0.10)	(0.10)
Years of schooling			0.28*	-0.06*		
			(0.02)	(0.02)		
Duration in school					0.33*	-0.06
					(0.03)	(0.03)
Constant	7.75*	-1.16*	8.48*	-1.53*	9.29*	-1.65*
	(0.18)	(0.16)	(0.18)	(0.17)	(0.19)	(0.18)
Working Memory						
Black	-1.64*	-0.16*	-1.17*	-0.13*	-0.99*	-0.12*
	(0.07)	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)
Years of schooling			0.23*	-0.01		
			(0.01)	(0.01)		
Duration in school					0.26*	-0.01
					(0.02)	(0.01)
Constant	4.76*	-0.04	5.38*	-0.17*	6.01*	-0.17
	(0.11)	(0.08)	(0.10)	(0.08)	(0.11)	(0.09)

*$p<0.05$

Supplemental Table S3. Selected examples of duration in school formula using BSE data.
Estimates for calculating the duration in school measure using as examples hypothetical White or Black students born in 1914, who lived in Alabama or Maryland, and completed 8, 10, or 12 years of schooling. Estimates derived solely using BSE data.

s	r	t	c_i	$\Sigma\, b_{rst}$	$\Sigma\, z_t$	x_i
State	Student's race	Years attended school	Self-reported years of schooling	Total days attended	Total days of school based on maximum term length	Duration in school
Alabama	White	1920-1928	8	914.5	1676	4.4 years
	Black	1920-1928	8	720.5	1676	3.4 years
	White	1920-1930	10	1155.5	2052.5	5.6 years
	Black	1920-1930	10	912	2052.5	4.4 years
	White	1920-1932	12	1402.5	2430	6.9 years
	Black	1920-1932	12	1112	2430	5.5 years
Maryland	White	1920-1928	8	1361.5	1676	6.5 years
	Black	1920-1928	8	1095.5	1676	5.2 years
	White	1920-1930	10	1684.5	2052.5	8.2 years
	Black	1920-1930	10	1373.5	2052.5	6.7 years
	White	1920-1932	12	2013	2430	9.9 years
	Black	1920-1932	12	1664	2430	8.2 years

Notes:
$\Sigma\, z_t$ does not vary between White and Black segregated schools because it is the value of the total days of school attendance using the maximum term length in any state or school system each year.

Supplemental Figure 1. Length of school term White-segregated schools (A) and Black-segregated schools (B) in the U.S. South by state (n=17) by Census Division, Biennial Survey of Education, 1919/20 to 1953/54.
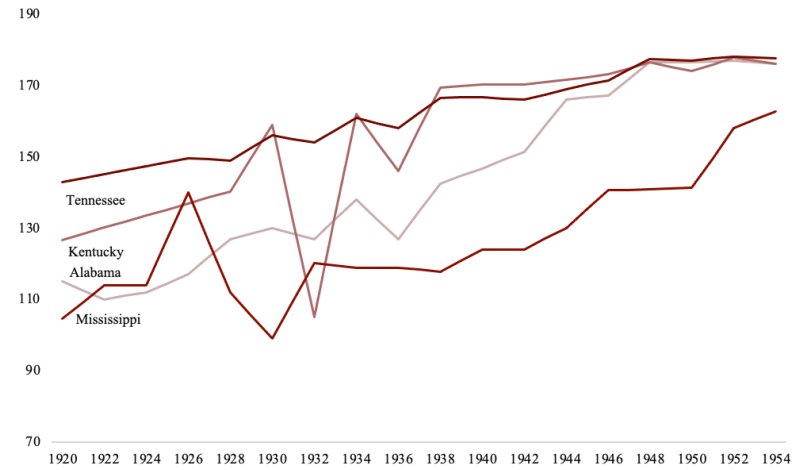
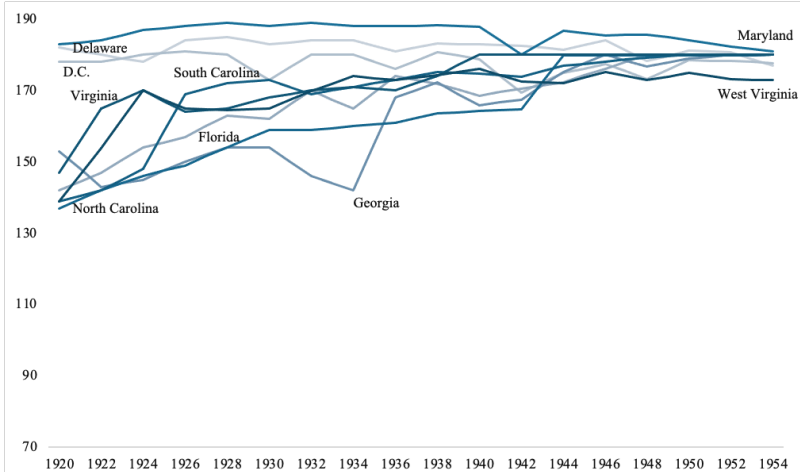**(A) White Segregated Schools**

East South Central Division
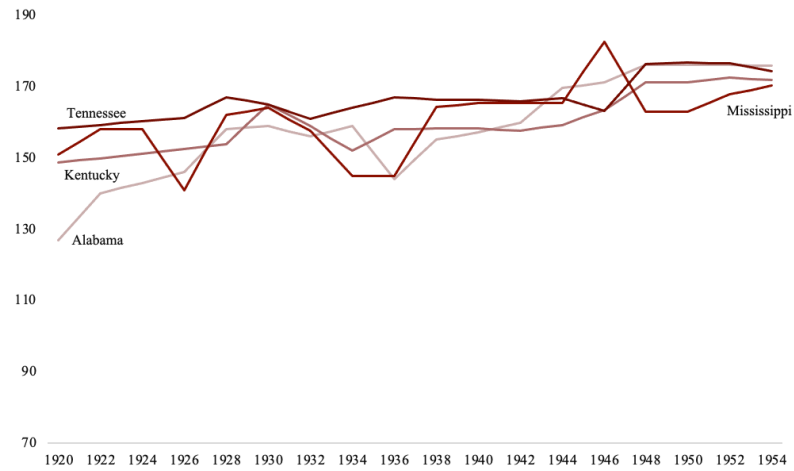
South Atlantic

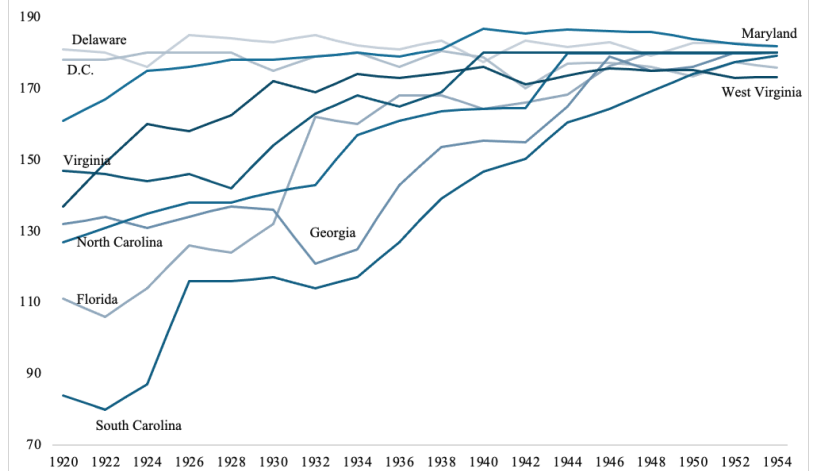**(B) Black Segregated School**

East South Central Division

South Atlantic

(A) White Segregated Schools

West South Central
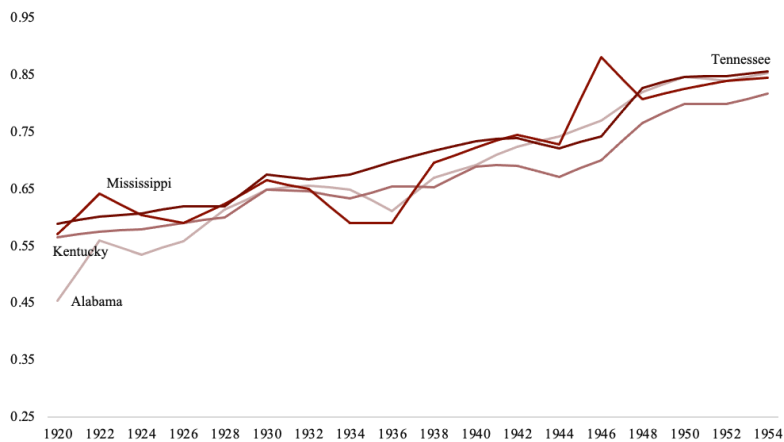

(B) Black Segregated Schools

West South Central

Supplemental Figure 2. Proportion of the maximum southern school term attended at White-segregated schools (A) and Black-segregated schools (B) in the U.S. South by state (n=17) by Census Division, Biennial Survey of Education, 1919/20 to 1953/54.
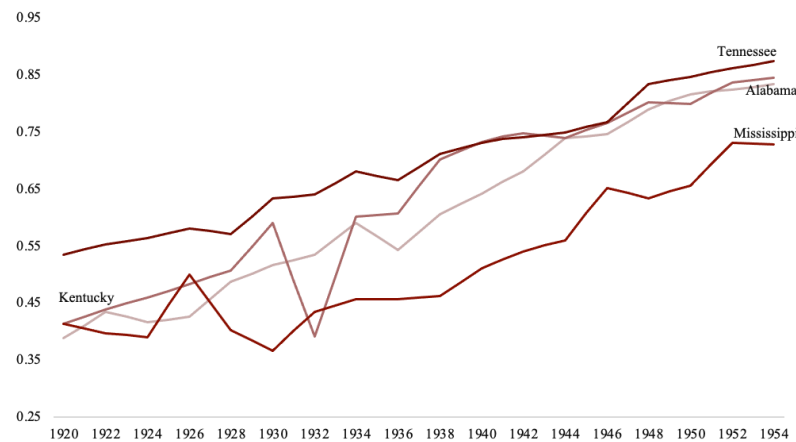
(A) White Segregated Schools

(B) Black Segregated Schools

East South Central Division

East South Central Division

South Atlantic

South Atlantic
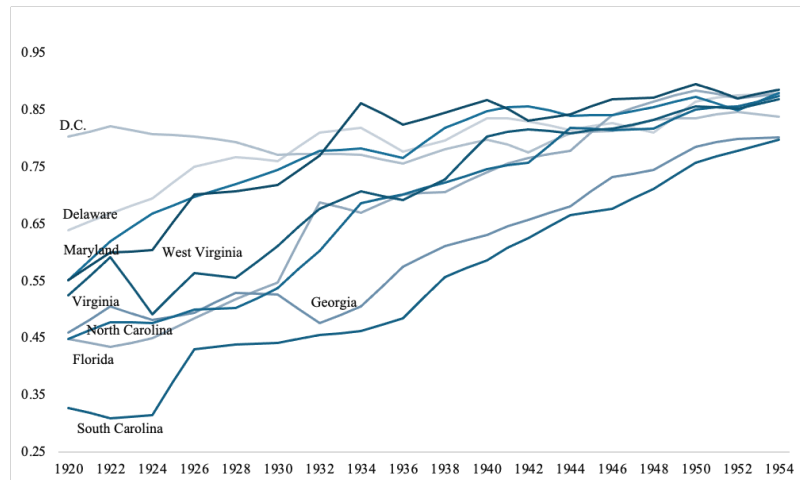
(A) White Segregated Schools

West South Central Division

(B) Black Segregated Schools

West South Central Division

Note. Proportion of the school term attended is calculated as the average number of days attended as reported by the state divided by the maximum school term length in the U.S. South in that year. The average number of days attended is reported separately for White-segregated and Black-segregated schools.

Supplemental Table S4: Comparing sample characteristics to assess differences between included vs excluded respondents.
Sample characteristics of Black and White HRS respondents who resided in U.S. South during school for those who provided a measure of cognitive function (n=4,343) versus those who did not (n=299)

	Analytic Sample		Excluded due to Item Non-Response	
	White **N=2,950**	**Black** **N=1,393**	**White** **N=186**	**Black** **N=113**
	Mean (SE) or %	Mean (SE) or %	Mean (SE) or %	Mean (SE) or %
Women [a, b]	57.3%	59.1%	26.7%	40.4%
Schooling Cohort [b]				
≤ 1939	33.2%	36.8%	34.3%	58.3%
1940 - 1948	36.9%	34.8%	34.5%	23.5%
1949 - 1954	29.9%	28.4%	31.1%	18.2%
Census Division				
South Atlantic	43.3%	52.7%	44.2%	53.5%
East South Central	25.5%	24.2%	28.7%	20.4%
West South Central	31.2%	23.1%	27.1%	26.1%
Parent's Schooling ≥ 8 years [a, b]	61.1%	41.3%	41.7%	30.3%
Years of Schooling				
Self-reported [a]	10.5 (0.05)	8.8 (0.10)	9.5 (0.24)	8.1 (0.38)
Duration in school [a, b]	7.9 (0.04)	5.8 (0.08)	7.1 (0.19)	4.9 (0.27)
Degree Attainment [a]				
No degree	35.6%	65.3%	47.6%	66.0%
GED	5.6%	3.8%	7.4%	5.0%
High school diploma	41.7%	23.6%	36.9%	24.5%
Some college	17.1%	7.2%	8.1%	4.4%

Notes
[a] p<0.05 comparing those who provided a measure of cognitive function to those who did not, White respondents.
[b] p<0.05 comparing those who provided a measure of cognitive function to those who did not, Black respondents.

Supplemental Table S5: Results from logistic regression models predicting item non-response on cognitive function regressed on time invariant characteristics stratified by respondent race. Sample includes Black and White HRS respondents who resided in U.S. South during school and provided a measure of cognitive function (n=4,343) compared to those who did not (n=299)

	White n=3,136		Black n=1,506	
	Model 1	**Model 2**	**Model 1**	**Model 2**
	OR	OR	OR	OR
	(95% CI)	(95% CI)	(95% CI)	(95% CI)
Women	0.26*	0.26*	0.47*	0.48*
	(0.18,0.37)	(0.18,0.37)	(0.30,0.72)	(0.31,0.74)
Schooling Cohort				
1940 - 1948	1.06	1.16	0.44*	0.50*
	(0.70,1.60)	(0.76,1.78)	(0.25,0.77)	(0.27,0.94)
1949 - 1954	1.21	1.44	0.41*	0.51
	(0.79,1.87)	(0.91,2.29)	(0.23,0.73)	(0.25,1.06)
Parent's Schooling ≥ 8 years	0.50*	0.51*	0.65	0.66
	(0.35,0.73)	(0.35,0.73)	(0.40,1.04)	(0.41,1.06)
Years of Schooling				
Self-reported	0.91*		0.99	
	(0.83,0.99)		(0.90,1.08)	
Duration in school		0.87*		0.92
		(0.78,0.98)		(0.79,1.08)
Degree Attainment				
No degree	0.72	0.71	0.56	0.48*
	(0.42,1.24)	(0.42,1.22)	(0.29,1.11)	(0.24,0.98)
GED	0.86	0.86	1.07	0.99
	(0.41,1.78)	(0.41,1.78)	(0.37,3.07)	(0.34,2.91)
Some college	0.47*	0.47*	0.74	0.75
	(0.25,0.88)	(0.25,0.87)	(0.28,1.93)	(0.29,1.95)
Intercept	0.60	0.56	0.36	0.47
	(0.18,2.03)	(0.19,1.70)	(0.12,1.08)	(0.16,1.37)

* p<0.05

Supplemental Table S6: Comparing sample characteristics to assess representativeness of analytic sample versus full sample. Sample characteristics of Black and White HRS respondents who resided in U.S. South during school for those who provided a measure of cognitive function (4,343) and for the full sample who also include those excluded due to item non-response on cognitive function (n=4,642).

	Analytic Sample (4,343)		Full Sample (4,642)	
	White	**Black**	**White**	**Black**
	Mean (SE) or %	Mean (SE) or %	Mean (SE) or %	Mean (SE) or %
Women	57.3%	59.1%	55.6%	57.8%
Schooling Cohort				
≤ 1939	33.2%	36.8%	33.3%	38.3%
1940 - 1948	36.9%	34.8%	36.8%	34.0%
1949 - 1954	29.9%	28.4%	29.9%	27.7%
Census Division				
South Atlantic	43.3%	52.7%	43.4%	52.7%
East South Central	25.5%	24.2%	25.7%	23.9%
West South Central	31.2%	23.1%	31.0%	23.3%
Parent's Schooling ≥ 8 years	61.1%	41.3%	60.0%	40.5%
Years of Schooling				
Self-reported	10.5 (0.05)	8.8 (0.10)	10.5 (0.05)	8.7 (0.10)
Duration in school	7.9 (0.04)	5.8 (0.08)	7.9 (0.04)	5.7 (0.08)
Degree Attainment				
No degree	35.6%	65.3%	36.2%	65.4%
GED	5.6%	3.8%	5.7%	3.9%
High school diploma	41.7%	23.6%	41.5%	23.7%
Some college	17.1%	7.2%	16.6%	7.0%

Notes: There were no statistically significant differences between the full sample and the analytic sample on any of the model variables, suggesting that the analytic sample is representative of the full sample.

Supplemental Table S7. **Estimates from models to assess possible bias due to attrition.**
Estimates from linear mixed models predicting cognitive functioning, episodic memory, and working memory among Black and White older adults who resided in U.S. South during school and provided 3 or more observations, Health and Retirement Study (n=3,412)

	Model 1		Model 2		Model 3	
	At 73	Age	At 73	Age	At 73	Age
Cognitive Functioning						
Black	-3.38*	0.10	-2.30*	0.06	-1.80*	0.07
	(0.16)	(0.12)	(0.14)	(0.12)	(0.16)	(0.13)
Years of schooling			0.57*	-0.07*		
			(0.04)	(0.03)		
Duration in school					0.71*	-0.03
					(0.06)	(0.05)
Constant	12.75*	-1.33*	13.17*	-1.69*	14.71*	-1.77*
	(0.28)	(0.21)	(0.25)	(0.23)	(0.25)	(0.23)
Episodic Memory						
Black	-1.78*	0.25*	-1.18*	0.17	-0.90*	0.17
	(0.11)	(0.09)	(0.10)	(0.09)	(0.12)	(0.10)
Years of schooling			0.32*	-0.06*		
			(0.03)	(0.03)		
Duration in school					0.40*	-0.04
					(0.05)	(0.04)
Constant	7.96*	-1.19*	8.17*	-1.48*	9.03*	-1.58*
	(0.20)	(0.16)	(0.19)	(0.18)	(0.19)	(0.18)
Working Memory						
Black	-1.59*	-0.17*	-1.12*	-0.12*	-0.91*	-0.10*
	(0.07)	(0.05)	(0.06)	(0.05)	(0.07)	(0.05)
Years of schooling			0.25*	-0.01		
			(0.02)	(0.01)		
Duration in school					0.31*	0.01
					(0.02)	(0.02)
Constant	4.83*	-0.07	5.02*	-0.19*	5.70*	-0.17*
	(0.12)	(0.08)	(0.11)	(0.08)	(0.11)	(0.08)

Notes: To assess the extent to which estimates are affected by the inclusion of respondents who left the study after only one or two observations, we re-estimated our models after restricting our sample to those who provided at least 3 observations. Estimates are similar to those we report, indicating that our findings are likely not driven by issues of attrition.
*p<0.05

Supplemental Table S8. Estimates from models to assess potential practice effects.
Estimates from linear mixed models predicting cognitive functioning, episodic memory, and working memory among Black and White older adults who resided in U.S. South during school after dropping their first observation from analysis, Health and Retirement Study (n=3,891)

	Model 1		Model 2		Model 3	
	At 73	Age	At 73	Age	At 73	Age
Cognitive Functioning						
Black	-3.45*	0.16	-2.38*	0.12	-1.89*	0.12
	(0.16)	(0.13)	(0.14)	(0.13)	(0.16)	(0.14)
Years of schooling			0.57*	-0.08*		
			(0.04)	(0.04)		
Duration in school					0.71*	-0.06
					(0.06)	(0.05)
Constant	12.49*	-1.33*	13.09*	-1.79*	14.60*	-1.92*
	(0.27)	(0.23)	(0.25)	(0.26)	(0.25)	(0.26)
Episodic Memory						
Black	-1.83*	0.30*	-1.23*	0.22*	-0.94*	0.21
	(0.11)	(0.10)	(0.11)	(0.10)	(0.12)	(0.11)
Years of schooling			0.32*	-0.07*		
			(0.03)	(0.03)		
Duration in school					0.40*	-0.05
					(0.05)	(0.04)
Constant	7.77*	-1.20*	8.06*	-1.56*	8.91*	-1.67*
	(0.19)	(0.18)	(0.19)	(0.20)	(0.19)	(0.20)
Working Memory						
Black	-1.61*	-0.15*	-1.16*	-0.1	-0.94*	-0.08
	(0.07)	(0.05)	(0.06)	(0.05)	(0.07)	(0.05)
Years of schooling			0.25*	-0.01		
			(0.02)	(0.01)		
Duration in school					0.31*	0
					(0.02)	(0.02)
Constant	4.80*	-0.06	5.06*	-0.22*	5.72*	-0.22*
	(0.12)	(0.09)	(0.11)	(0.09)	(0.11)	(0.09)

Notes: To assess potential practice effects from using the TICS, we excluded respondents' first observation from the analysis and re-estimated the models given prior findings that practice effects, if they occur, tend to occur between the first and second observation (c.f., Alley et al., 2007; Beglinger et al., 2005; Hultsch et al., 2000). Estimates and inferences from these models are substantively the same and do not alter our inferences.
*$p<0.05$

Supplemental Table S9. Estimates from models to test for moderated-mediation, Health and Retirement Study (n=4,343). [a, b]

	Model 1		Model 2		Model 3	
	At 73	**Age** [c]	**At 73**	**Age**	**At 73**	**Age**
Cognitive Function						
Black	-3.44*	0.11	-2.55*	-0.08	-2.09*	-0.16
	(0.15)	(0.11)	(0.22)	(0.20)	(0.29)	(0.24)
Years of schooling			0.55*	-0.07		
			(0.05)	(0.04)		
Black x Years of schooling			-0.10	-0.02		
			(0.06)	(0.05)		
Duration in school					0.60*	-0.06
					(0.06)	(0.05)
Black x Duration in school					-0.01	-0.02
					(0.07)	(0.06)
Constant	12.44*	-1.27*	13.81*	-1.71*	15.29*	-1.81*
	(0.26)	(0.20)	(0.23)	(0.22)	(0.26)	(0.24)
Episodic Memory						
Black	-1.79*	0.26*	-1.28*	0.10	-0.97*	0.02
	(0.10)	(0.09)	(0.16)	(0.16)	(0.21)	(0.20)
Years of schooling			0.30*	-0.06		
			(0.03)	(0.03)		
Black x Years of schooling			-0.05	-0.01		
			(0.04)	(0.04)		
Duration in school					0.33*	-0.05
					(0.04)	(0.04)
Black x Duration in school					0.01	-0.02
					(0.05)	(0.05)
Constant	7.75*	-1.16*	8.46*	-1.52*	9.28*	-1.62*
	(0.18)	(0.16)	(0.18)	(0.17)	(0.20)	(0.19)
Working Memory						
Black	-1.64*	-0.16*	-1.27*	-0.17*	-1.12*	-0.16
	(0.07)	(0.05)	(0.10)	(0.09)	(0.14)	(0.10)
Years of schooling			0.24*	-0.01		
			(0.02)	(0.02)		
Black x Years of schooling			-0.04	-0.01		
			(0.03)	(0.02)		
Duration in school					0.27*	-0.01
					(0.02)	(0.02)
Black x Duration in school					-0.02	0.01
					(0.03)	(0.02)
Constant	4.76*	-0.04	5.39*	-0.17*	6.04*	-0.17
	(0.11)	(0.08)	(0.10)	(0.08)	(0.11)	(0.09)

[a] All models adjust for gender, education cohort, state of childhood residence (dummies), parental education, and mode of interview. Models 2 and 3 adjust for degree attainment. [b] Number of person-period observations = 25,737. Mean number of observations = 5.9. [c] Age is divided 10

Notes: To determine if moderated-mediation was occurring, we re-estimated our models after including interactions between race and education (years of schooling, duration in school, degree attainment). We do not find support for moderated-mediation across cognitive domains or education measures in these models. None of the race x education interactions were statistically significant and all coefficients were close to zero.

References

Alley, D., Suthers, K., & Crimmins, E. (2007). Education and Cognitive Decline in Older Americans: Results from the AHEAD sample. *Research on Aging*, *29*(1), 73–97.

Beglinger, L. J., Gaydos, B., Tangphao-Daniels, O., Duff, K., Kareken, D. A., Crawford, J., Fastenau, P. S., & Siemers, E. R. (2005). Practice effects and the use of alternate forms in serial neuropsychological testing. *Archives of Clinical Neuropsychology*, *20*(4), 517–529. https://doi.org/10.1016/j.acn.2004.12.003

Hultsch, D. F., MacDonald, S. W., Hunter, M. A., Levy-Bencheton, J., & Strauss, E. (2000). Intraindividual variability in cognitive performance in older adults: Comparison of adults with mild dementia, adults with arthritis, and healthy adults. *Neuropsychology*, *14*(4), 588.