The Black-White Gap in Non-Cognitive Skills among Elementary School Children

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ONLINE APPENDIX

Appendix A: Data Construction and Description

Teacher Social Rating Scales:

As described in section II of the text, teachers completed Social Rating Scale measures in all survey waves of both ECLS-K:1999 and ECLS-K:2011. Respondents used four-point frequency scales to report how often a student demonstrates a particular behavior (such as getting into fights with peers), with a numerical value of 1 denoting "never", 2 denoting "sometimes", 3 "often", and 4 "very often". NCES aggregates the 24 teacher-reported scales into 5 composites: "approaches to learning" (measured by the variable *T1LEARN* in the fall 2010 survey of ECLS-K:2011), "externalizing problem behaviors" (*T1EXTERN*), "self-control" (*T1CONTRO*), "interpersonal skills" (*T1INTERP*), and "internalizing problem behaviors" (*T1INTERN*).

Importantly, NCES does not release the individual scales, even in restricted-use versions of the data – only the composite scales are available. As described in the ECLS-K Base Year User's Guide (NCES, 2012),

- *T1LEARN* measures six items that rate the child's attentiveness, task persistence, eagerness to learn, learning independence, flexibility, and organization.
- *T1CONTRO* has four items that rate whether the child respects the property rights of others, controls his or her temper, accepts peer ideas for group activities, and responds appropriately to peer pressure.
- *T1EXTERN* includes five items that rate the frequency with which a child argues, fights, gets angry, acts impulsively, and disturbs ongoing activities.
- *T1INTERP* has five items that rate the child's skill in forming and maintaining friendships, getting along with people who are different, comforting or helping other children, expressing feelings, ideas and opinions in positive ways, and showing sensitivity to the feelings of others.
- *T1INTERN* includes four items that rate the apparent presence of anxiety, loneliness, low self-esteem, and sadness.

Control Variables used in the Analyses:

Control variables in selected specifications include indicators for gender, race, ethnicity, family structure, the marital status of the child's primary caregiver, Census region, urbanicity, parental education, log family income, and family size.

- The gender, race, and ethnicity variables include indicators for whether a respondent is female, Asian, Hispanic, black, Native American, multiracial, or has missing information on race.

- Family structure variables include indicators for whether the child's mother and father both live with the child, the mother only, the father only, or if some other family member lives with the child. Indicators for the marital status of the child's parents include married, separated, divorced, never married, and not reported.

- There are four indicators for Census region (Northeast, Midwest, South, and West), three for urbanicity of the child's residence (urban, suburban, or rural), and one each for missing Census region and urbanicity, respectively.

- Maternal and paternal education levels are measured as continuous variables ranging from 8 to 18 years. Log family income is created using the midpoints of the ranges of the categorical family income variable provided by NCES. Family size is measured as a continuous variable. Parental education, family income, and family size are set equal to their respective sample means when missing, and new 0-1 indicators for missing values are created for each of the original variables. The SES composite index provided by NCES is based on parental education, parental occupation, and household income.

Table A1: Racial Gaps in Math and Reading IRT Test Scores, 2011 ECLS-K Cohort

	Mathematics				Reading			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Kindergarten	-0.706	-0.582	-0.376	-0.419	-0.441	-0.372	-0.139	-0.203
	(0.026)	(0.040)	(0.028)	(0.040)	(0.026)	(0.039)	(0.028)	(0.039)
Grade 1	-0.918	-0.720	-0.588	-0.559	-0.561	-0.387	-0.218	-0.209
	(0.030)	(0.047)	(0.032)	(0.047)	(0.030)	(0.047)	(0.032)	(0.047)
Grade 2	-1.037	-0.739	-0.685	-0.563	-0.661	-0.358	-0.283	-0.167
	(0.032)	(0.052)	(0.034)	(0.052)	(0.032)	(0.053)	(0.034)	(0.052)
Grade 3	-1.150	-0.809	-0.805	-0.626	-0.823	-0.489	-0.426	-0.267
	(0.034)	(0.057)	(0.036)	(0.056)	(0.035)	(0.058)	(0.036)	(0.057)
Home Environment Controls			X	X			X	X
School Fixed Effects		X		X		X		X

Notes:
Each entry in the table corresponds to an estimate from a separate regression of IRT test scores (either mathematics or reading) on an indicator that equals 1 for black children and 0 for white children.

Table A2: Estimates of Racial Gaps in Latent Non-Cognitive Skills, ECLS-K:2011 - Kindergarten

	(1)	(2)	(3)	(4)
Panel A: Approaches to Learning				
Raw Gaps	-0.331	-0.755	-0.528	-0.911
	(0.026)	(0.031)	(0.026)	(0.023)
Including Controls	-0.109	-0.457	-0.257	…
	(0.028)	(0.033)	(0.028)	…
Panel B: Externalizing Problem Behaviors				
Raw Gaps	-0.398	-0.795	-0.585	-1.031
	(0.027)	(0.032)	(0.027)	(0.024)
Including Controls	-0.172	-0.494	-0.313	…
	(0.029)	(0.034)	(0.029)	…
Panel C: Self-Control				
Raw Gaps	-0.399	-0.789	-0.587	-1.005
	(0.027)	(0.032)	(0.027)	(0.023)
Including Controls	-0.197	-0.507	-0.337	…
	(0.030)	(0.035)	(0.029)	…
Panel D: Interpersonal Skills				
Raw Gaps	-0.301	-0.761	-0.504	-0.981
	(0.027)	(0.032)	(0.027)	(0.023)
Including Controls	-0.120	-0.484	-0.271	…
	(0.029)	(0.034)	(0.029)	…
Panel E: Internalizing Problem Behaviors				
Raw Gaps	-0.086	-0.672	-0.298	-0.986
	(0.027)	(0.032)	(0.027)	(0.023)
Including Controls	0.070	-0.417	-0.089	…
	(0.030)	(0.035)	(0.030)	…
Baseline Estimates	X			
Adjustment via Method 1		X		
Adjustment via Method 2			X	
Adjustment via Method 3				X

Table A3: Estimates of Racial Gaps in Latent Non-Cognitive Skills, ECLS-K:2011 - First Grade

	(1)	(2)	(3)	(4)
	Panel A: Approaches to Learning			
Raw Gaps	-0.416	-0.809	-0.703	-0.946
	(0.030)	(0.033)	(0.030)	(0.025)
Including Controls	-0.158	-0.479	-0.392	…
	(0.032)	(0.035)	(0.031)	…
	Panel B: Externalizing Problem Behaviors			
Raw Gaps	-0.432	-0.813	-0.716	-1.076
	(0.031)	(0.034)	(0.031)	(0.026)
Including Controls	-0.197	-0.504	-0.427	…
	(0.034)	(0.036)	(0.033)	…
	Panel C: Self-Control			
Raw Gaps	-0.452	-0.816	-0.730	-1.064
	(0.031)	(0.034)	(0.031)	(0.026)
Including Controls	-0.223	-0.507	-0.447	…
	(0.034)	(0.037)	(0.033)	…
	Panel D: Interpersonal Skills			
Raw Gaps	-0.389	-0.803	-0.682	-1.025
	(0.031)	(0.034)	(0.031)	(0.026)
Including Controls	-0.172	-0.478	-0.410	…
	(0.034)	(0.036)	(0.033)	…
	Panel E: Internalizing Problem Behaviors			
Raw Gaps	-0.114	-0.679	-0.425	-0.947
	(0.031)	(0.034)	(0.031)	(0.026)
Including Controls	0.042	-0.425	-0.208	…
	(0.035)	(0.038)	(0.034)	…
Baseline Estimates	X			
Adjustment via Method 1		X		
Adjustment via Method 2			X	
Adjustment via Method 3				X

Table A4: Estimates of Racial Gaps in Latent Non-Cognitive Skills, ECLS-K:2011 - Second Grade

	(1)	(2)	(3)	(4)
Panel A: Approaches to Learning				
Raw Gaps	-0.431	-0.782	-0.705	-0.937
	(0.032)	(0.033)	(0.032)	(0.026)
Including Controls	-0.129	-0.431	-0.353	…
	(0.034)	(0.034)	(0.033)	…
Panel B: Externalizing Problem Behaviors				
Raw Gaps	-0.475	-0.809	-0.748	-0.988
	(0.033)	(0.034)	(0.033)	(0.027)
Including Controls	-0.231	-0.490	-0.448	…
	(0.036)	(0.036)	(0.035)	…
Panel C: Self-Control				
Raw Gaps	-0.492	-0.791	-0.761	-1.016
	(0.034)	(0.034)	(0.033)	(0.027)
Including Controls	-0.242	-0.478	-0.456	…
	(0.037)	(0.037)	(0.036)	…
Panel D: Interpersonal Skills				
Raw Gaps	-0.433	-0.800	-0.707	-1.034
	(0.034)	(0.034)	(0.033)	(0.027)
Including Controls	-0.185	-0.486	-0.404	…
	(0.036)	(0.036)	(0.035)	…
Panel E: Internalizing Problem Behaviors				
Raw Gaps	-0.116	-0.675	-0.423	-0.899
	(0.033)	(0.034)	(0.033)	(0.027)
Including Controls	0.066	-0.404	-0.177	…
	(0.037)	(0.037)	(0.036)	…
Baseline Estimates	X			
Adjustment via Method 1		X		
Adjustment via Method 2			X	
Adjustment via Method 3				X