Reasons for Homeschooling and the Correlates of Home-Educated Students' Academic Achievement: A New U.S. Nationwide Study

Brian D. Ray, Ph.D.

National Home Education Research Institute, U.S.A.
bray@nheri.org

Braden Hoelzle, Ph.D.

National Home Education Research Institute and Frisco Independent School District, Frisco, Texas, U.S.A.

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While some movers and shakers want to ban parent-directed home-based education . . .

e.g., Elizabeth Bartholet, 2020,

"This Article calls for a radical transformation in the homeschooling regime and a related rethinking of child rights. It recommends **a presumptive ban on homeschooling** [emphasis added], with the burden on parents to demonstrate justification for permission to homeschool."

Homeschooling has continued to grow in the USA.
Is this growth good or bad for children and communities?
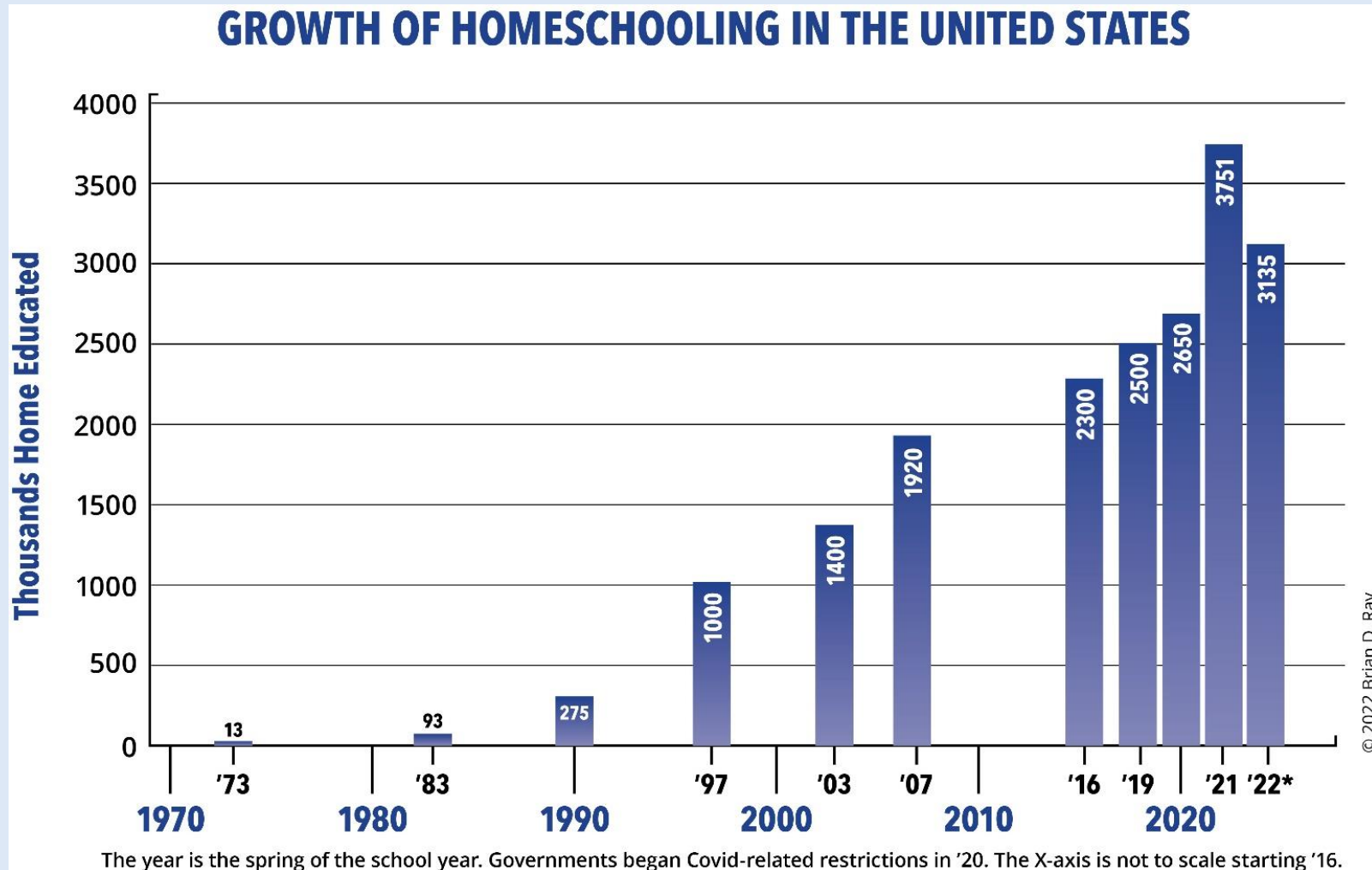
Purpose and Methods

Questions:

1. How are K-12 homeschool students performing on standardized academic achievement tests?

2. What are the correlates of their achievement?

3. What are the reasons why parents are homeschooling today?

Methods continued

- Used past studies and theory to inform this project
- Many independent variables of interest, e.g.:
  - Family demographics, student demographics
  - Teacher certification status
  - Age formal instruction began, structured time per day, percent of school years homeschooled
- Participation routes: an association of homeschool associations, various state organizations, a social media influencer, snowballing, other lists
- Test scores: three major testing services and homeschool families

Family Demographics, Data from 45 states

US family households median income
-- $86,372 (2020, census.gov),

https://www.census.gov/content/dam/Census/library/publications/2021/demo/p60-273.pdf

Family Location

Location	n	percent	valid_percent
Rural	252	29.27%	29.40%
Urban (50,000+)	368	42.74%	42.94%
Urban Clusters (2,500 - 49,999)	237	27.53%	27.65%
	4	0.46%	-
Total	861	-	-

Which category best fits the total income of all persons in your household over the past 12 months? Include your own income. Include money from jobs or other earnings, pensions, interest, rent, Social Security payments, and so on.

Income	n	percent	valid_percent
$55K or Below	75	8.71%	9.05%
$55K - $74,999K	117	13.59%	14.11%
$75K - $124,999K	339	39.37%	40.89%
$125K - 174,999K	136	15.80%	16.41%
$175K or Above	162	18.82%	19.54%
	32	3.72%	-
Total	861	-	-

Family Demographics

United States in 2022

What was the student's father's highest academic attainment as of the date of testing?

fathed2	n	percent
Did Not Finish HS	21	2.44%
HS Grad Or Some College	188	21.84%
Associates	72	8.36%
Bachelors	325	37.75%
Masters or Above	255	29.62%
Total	861	-

What was the student's mother's highest academic attainment as of the date of testing?

mothed2	n	percent
Did Not Finish HS	1	0.12%
HS Grad Or Some College	155	18.00%
Associates	84	9.76%
Bachelors	397	46.11%
Masters or Above	224	26.02%
Total	861	-

	Men	Women
High school diploma or GED is highest	30.1%	27%
Bachelor's degree or more	36.2%	39.0%

Student-level frequencies

What is the biological sex of this child?			
sex	**n**	**percent**	**valid_percent**
Male	717	52.37%	52.60%
Female	646	47.19%	47.40%
	6	0.44%	-
Total	1,369	-	-

Child's Ethnicity

childeth	n	percent	valid_percent
Asian	34	2.48%	2.72%
Black or African American	25	1.83%	2.00%
Hispanic	95	6.94%	7.59%
Other	61	4.46%	4.88%
White	1,036	75.68%	82.81%
	118	8.62%	-
Total	1,369	-	-

Homeschool Students, 2016
Student's race/ethnicity (percent) (Table 1):
Asian or Pacific Islander, non-Hispanic, 3.
Black, non-Hispanic, 8.
Hispanic, 26.
Other, non-Hispanic, 4.
White, non-Hispanic, 59.
https://nces.ed.gov/pubs2020/2020001.pdf

U.S K-12 students, 2021:
Asian, 4.9%
Black, 12.8%
Hispanic, 25.7%
White, 48.1%
Census.gov
www.census.gov/content/dam/Census/library/publications/2023/acs/acs-55.pdf

Years Homeschooled

yearsHomeSchooled	n	percent
0	16	1.17%
1	85	6.21%
2	132	9.64%
3	187	13.66%
4	204	14.90%
5	129	9.42%
6	115	8.40%
7	119	8.69%
8	100	7.30%
9	85	6.21%
10	79	5.77%
11	44	3.21%
12	28	2.05%
13	46	3.36%
Total	1,369	-

Descriptive Statistics - Family Variables

variable	Median	Mean	n	miss	SD	Min	Max
numchild	2	2.69	859	2	1.30	1	10
numadult	2	2.19	851	10	0.57	1	5

Descriptive Statistics - Student Variables

variable	Median	Mean	n	miss	SD	Min	Max
age	8.00	8.45	1,359	10	2.98	1.00	16.00
yearsHomeSchooled	5.00	5.60	1,369	0	3.21	0.00	13.00
percHomeSchooled	1.00	0.83	1,368	1	0.26	0.00	1.00
formage	5.00	4.61	1,361	8	1.22	1.00	14.00
structime	4.00	3.93	1,361	8	1.49	1.00	10.00
reading	87.00	79.57	1,357	12	21.68	1.00	99.00
language	85.00	75.93	1,316	53	23.91	1.00	99.00
math	83.00	75.41	1,360	9	23.71	1.00	99.00
socialstud	84.00	75.96	981	388	24.02	1.00	99.00
science	85.00	77.71	1,010	359	23.27	1.00	99.00
readingZ	1.13	1.09	1,357	12	0.88	-2.33	2.33
languageZ	1.04	0.97	1,316	53	0.94	-2.33	2.33
mathZ	0.95	0.93	1,360	9	0.92	-2.33	2.33
socialstudZ	0.99	0.91	981	388	0.98	-2.33	2.33
scienceZ	1.04	0.97	1,010	359	0.95	-2.33	2.33

Reasons for Homeschooling

value	concernenv	covexposure	covinability	covpolicies	customized	dissinstruct	familylife	moral	religious	specialneed
	A. Concern about the school environment such as safety, drugs, or negative peer pressure	H. Concern about your child(ren) being exposed to COVID-19	J. Inability to regularly attend school due to COVID exposures/policies.	I. Concern about the school□s COVID-19 policies (e.g., masks, vaccines)	F. You want to provide customized educational experiences	B. Dissatisfaction with the academic instruction at schools	G. You want to emphasize family life together	D. You prefer to teach at home so that you can provide moral instruction	C. You prefer to teach at home so that you can provide religious instruction	E. Because the child has special needs (e.g., physical or mental health) that the schools canb□t or wonb□t address
Not at all important	0.58% (5)	76.66% (660)	68.99% (594)	34.73% (299)	0.46% (4)	1.05% (9)	0.81% (7)	0.35% (3)	6.74% (58)	50.17% (432)
A little important	4.07% (35)	12.43% (107)	7.55% (65)	11.5% (99)	2.79% (24)	3.72% (32)	2.79% (24)	4.41% (38)	8.36% (72)	14.05% (121)
Somewhat important	11.61% (100)	6.62% (57)	9.52% (82)	13.59% (117)	13.01% (112)	10.34% (89)	7.08% (61)	8.36% (72)	12.54% (108)	15.21% (131)
Quite important	29.27% (252)	1.63% (14)	5.92% (51)	14.17% (122)	29.04% (250)	32.06% (276)	25.44% (219)	25.67% (221)	20.67% (178)	10.34% (89)
Extremely important	54.47% (469)	2.21% (19)	7.67% (66)	25.9% (223)	54.47% (469)	52.85% (455)	63.76% (549)	61.21% (527)	51.68% (445)	9.41% (81)
		0.46% (4)	0.35% (3)	0.12% (1)	0.23% (2)		0.12% (1)			0.81% (7)

Correlations, selected variables

Correlation Matrix of Select Variables

Variables	age	yearsHomeSchooled	percHomeSchooled	formage	structime	readingZ	languageZ	mathZ	socialstudZ	scienceZ
age	1.000									
yearsHomeSchooled	0.701***	1.000								
percHomeSchooled	-0.118***	0.475***	1.000							
formage	0.062*	0.072**	0.101***	1.000						
structime	0.487***	0.314***	-0.100***	-0.013	1.000					
readingZ	0.029	0.065*	0.035	-0.101***	0.059*	1.000				
languageZ	0.090**	0.099***	0.009	-0.136***	0.113***	0.744***	1.000			
mathZ	-0.084**	-0.056*	0.010	-0.104***	0.038	0.610***	0.599***	1.000		
socialstudZ	0.072*	0.086**	0.040	-0.055	0.094**	0.553***	0.502***	0.444***	1.000	
scienceZ	-0.008	0.062	0.094**	-0.059	0.038	0.492***	0.430***	0.454***	0.768***	1.000

Full model, explanatory notes

- Some variables are centered at the median for that variable, and these are indicated by "Cent" at the end of the variable name.

- 0.5 was subtracted from each of the coefficients after they were transformed to percentile form.

- 0.5 was not subtracted from the intercept because it is not showing the change in z-score based on a 1 unit change in the independent variable. It is showing the baseline percentile rank to which all other variable coefficients are added/subtracted.

The intercept reflects the median performance of students for each continuous variable when:

- fathed = " No HS Diploma"
- mothed = "No HS Diploma"
- income = "<$55k"
- maincert = "No"
- childeth = "White"
- percHomeSchooled = 0%
- formage = 0
- sex = "Female"
- structime = 0
- numchild = 0
- yearsHomeSchooled = 0
- age = 0
- scoreseen = "No"
- reglevel = "No Notice - Lowest Regulation"

	Dependent variable:				
	readingZ	languageZ	mathZ	socialstudZ	scienceZ
	(1)	(2)	(3)	(4)	(5)
fathed2HS Grad Or Some College	0.258	0.479**	0.339*	-0.182	-0.087
	(0.191)	(0.210)	(0.194)	(0.237)	(0.228)
fathed2Associates	0.280	0.481**	0.490**	-0.196	0.006
	(0.205)	(0.225)	(0.209)	(0.258)	(0.248)
fathed2Bachelors	0.171	0.311	0.350*	-0.179	0.038
	(0.190)	(0.210)	(0.193)	(0.238)	(0.228)
fathed2Masters or Above	0.144	0.387*	0.382*	-0.237	0.068
	(0.192)	(0.212)	(0.195)	(0.241)	(0.231)
mothed2HS Grad Or Some College	0.772	-0.717	0.312	-1.111	-0.733
	(0.876)	(0.927)	(0.892)	(0.988)	(0.972)
mothed2Associates	0.695	-0.825	0.443	-1.234	-0.902
	(0.878)	(0.928)	(0.894)	(0.992)	(0.975)
mothed2Bachelors	0.809	-0.598	0.445	-1.077	-0.784
	(0.875)	(0.925)	(0.891)	(0.986)	(0.971)
mothed2Masters or Above	0.967	-0.429	0.568	-0.917	-0.672
	(0.875)	(0.926)	(0.891)	(0.987)	(0.971)
income55K - 74,999K	0.040	0.046	0.030	-0.243*	-0.092
	(0.108)	(0.115)	(0.110)	(0.144)	(0.142)
income75K - 124,999K	0.096	0.101	0.056	0.094	0.191
	(0.095)	(0.101)	(0.097)	(0.123)	(0.122)
income125K - 174,999K	0.102	0.010	0.042	0.194	0.239*
	(0.107)	(0.114)	(0.109)	(0.137)	(0.135)
income175K or Above	0.193*	0.060	0.146	0.093	0.196
	(0.108)	(0.115)	(0.110)	(0.140)	(0.137)
maincertYes	-0.108	-0.130*	-0.120*	-0.061	0.016
	(0.071)	(0.076)	(0.072)	(0.093)	(0.090)
childethAsian	0.209	0.369**	0.388**	0.273	0.153
	(0.158)	(0.169)	(0.160)	(0.194)	(0.191)
childethBlack or African American	-0.160	-0.045	-0.520***	-0.170	-0.370
	(0.188)	(0.208)	(0.192)	(0.273)	(0.269)
childethHispanic	-0.052	0.087	0.122	-0.194	-0.227*
	(0.099)	(0.107)	(0.101)	(0.134)	(0.132)

	(0.099)	(0.107)	(0.101)	(0.134)	(0.132)
childethOther	-0.111	0.166	0.021	-0.044	-0.150
	(0.118)	(0.126)	(0.120)	(0.155)	(0.152)
percHomeSchooledCent	0.088	-0.046	0.105	0.254	0.380*
	(0.179)	(0.191)	(0.182)	(0.227)	(0.223)
formageCent	-0.068***	-0.098***	-0.064***	-0.040	-0.036
	(0.021)	(0.023)	(0.022)	(0.028)	(0.027)
sexMale	-0.079	-0.171***	0.169***	0.023	0.069
	(0.051)	(0.054)	(0.052)	(0.068)	(0.066)
structimeCent	0.031	0.052**	0.059***	0.041	0.018
	(0.020)	(0.022)	(0.020)	(0.026)	(0.026)
numchildCent	-0.018	-0.008	-0.032	-0.060**	-0.077***
	(0.020)	(0.022)	(0.021)	(0.028)	(0.027)
yearsHomeSchooledCent	0.011	0.016	-0.011	0.008	0.008
	(0.019)	(0.020)	(0.019)	(0.024)	(0.023)
ageCent	-0.013	0.00003	-0.036*	0.007	-0.018
	(0.019)	(0.020)	(0.019)	(0.024)	(0.024)
scoreseenYes	0.230***	0.254***	0.348***	-0.082	-0.039
	(0.052)	(0.056)	(0.053)	(0.071)	(0.069)
reglevelCategoryLow Regulation	-0.091	-0.160	-0.227**	-0.383***	-0.228**
	(0.092)	(0.098)	(0.094)	(0.116)	(0.113)
reglevelCategoryModerate Regulation	0.035	-0.052	0.033	-0.378***	-0.291**
	(0.092)	(0.098)	(0.094)	(0.119)	(0.115)
reglevelCategoryHigh Regulation	0.099	0.005	0.178	-0.424***	-0.401***
	(0.115)	(0.122)	(0.117)	(0.154)	(0.151)
Constant	-0.091	1.097	-0.142	2.466**	1.821*
	(0.900)	(0.953)	(0.916)	(1.021)	(1.003)
Observations	1,170	1,142	1,172	832	857
R^2	0.063	0.087	0.129	0.081	0.080
Adjusted R^2	0.040	0.064	0.108	0.049	0.049
Residual Std. Error	0.859 (df = 1141)	0.908 (df = 1113)	0.875 (df = 1143)	0.962 (df = 803)	0.947 (df = 828)
F Statistic	2.753*** (df = 28; 1141)	3.803*** (df = 28; 1113)	6.070*** (df = 28; 1143)	2.527*** (df = 28; 803)	2.583*** (df = 28; 828)

Note: *p<0.1; **p<0.05; ***p<0.01

Full model, summary lines calcu r for each ????

	Reading	Language	Math	Social Studies	Science
Observations	1,170	1,142	1,172	832	857
R^2	0.063	0.087	0.129	0.081	0.080
Adjusted R^2	0.040	0.064	0.108	0.049	0.049
Residual Std. Error	0.859 (df = 1141)	0.908 (df = 1113)	0.875 (df = 1143)	0.962 (df = 803)	0.947 (df = 828)
F Statistic	2.753*** (df = 28; 1141)	3.803*** (df = 28; 1113)	6.070*** (df = 28; 1143)	2.527*** (df = 28; 803)	2.583*** (df = 28; 828)
Note:					*p<0.1; **p<0.05; ***p<0.01

What to notice:

- Independent variable explains 2 of 5 subject areas, .05 or .01 – blue

- Independent variable explains 3 or more of 5 subject areas – red

- For 1 unit change in IV, z-score change in DV (percentile change near center; e.g., formageCent, -0.027 means 2.7 percentile points lower)

Regression Results

	rowname	reading	language	math	socialstud	science
1	(Intercept)	-0.091 (0.464)	1.097 (0.864)	-0.142 (0.444)	2.466 (0.993) **	1.821 (0.966) *
2	fathed2HS Grad Or Some College	0.258 (0.102)	0.479 (0.184) **	0.339 (0.133) *	-0.182 (-0.072)	-0.087 (-0.035)
3	fathed2Associates	0.28 (0.11)	0.481 (0.185) **	0.49 (0.188) **	-0.196 (-0.078)	0.006 (0.003)
4	fathed2Bachelors	0.171 (0.068)	0.311 (0.122)	0.35 (0.137) *	-0.179 (-0.071)	0.038 (0.015)
5	fathed2Masters or Above	0.144 (0.057)	0.387 (0.151) *	0.382 (0.149) *	-0.237 (-0.094)	0.068 (0.027)
6	mothed2HS Grad Or Some College	0.772 (0.28)	-0.717 (-0.263)	0.312 (0.123)	-1.111 (-0.367)	-0.733 (-0.268)
7	mothed2Associates	0.695 (0.257)	-0.825 (-0.295)	0.443 (0.171)	-1.234 (-0.391)	-0.902 (-0.317)
8	mothed2Bachelors	0.809 (0.291)	-0.598 (-0.225)	0.445 (0.172)	-1.077 (-0.359)	-0.784 (-0.283)
9	mothed2Masters or Above	0.967 (0.333)	-0.429 (-0.166)	0.568 (0.215)	-0.917 (-0.32)	-0.672 (-0.249)
10	income2$55K - $74,999K	0.04 (0.016)	0.046 (0.018)	0.03 (0.012)	-0.243 (-0.096) *	-0.092 (-0.037)
11	income2$75K - $124,999K	0.096 (0.038)	0.101 (0.04)	0.056 (0.022)	0.094 (0.037)	0.191 (0.076)
12	income2$125K - 174,999K	0.102 (0.04)	0.01 (0.004)	0.042 (0.017)	0.194 (0.077)	0.239 (0.094) *
13	income2$175K or Above	0.193 (0.076) *	0.06 (0.024)	0.146 (0.058)	0.093 (0.037)	0.196 (0.078)
14	maincertYes	-0.108 (-0.043)	-0.13 (-0.052) *	-0.12 (-0.048) *	-0.061 (-0.024)	0.016 (0.006)
15	childethAsian	0.209 (0.083)	0.369 (0.144) **	0.388 (0.151) **	0.273 (0.108)	0.153 (0.061)
16	childethBlack or African American	-0.16 (-0.064)	-0.045 (-0.018)	-0.52 (-0.198) ***	-0.17 (-0.068)	-0.37 (-0.144)
17	childethHispanic	-0.052 (-0.021)	0.087 (0.034)	0.122 (0.048)	-0.194 (-0.077)	-0.227 (-0.09) *
18	childethOther	-0.111 (-0.044)	0.166 (0.066)	0.021 (0.008)	-0.044 (-0.017)	-0.15 (-0.059)
19	percHomeSchooledCent	0.088 (0.035)	-0.046 (-0.018)	0.105 (0.042)	0.254 (0.1)	0.38 (0.148) *
20	formageCent	-0.068 (-0.027) ***	-0.098 (-0.039) ***	-0.064 (-0.025) ***	-0.04 (-0.016)	-0.036 (-0.015)
21	sexMale	-0.079 (-0.032)	-0.171 (-0.068) ***	0.169 (0.067) ***	0.023 (0.009)	0.069 (0.027)
22	structimeCent	0.031 (0.012)	0.052 (0.021) **	0.059 (0.024) ***	0.041 (0.016)	0.018 (0.007)
23	numchildCent	-0.018 (-0.007)	-0.008 (-0.003)	-0.032 (-0.013)	-0.06 (-0.024) **	-0.077 (-0.031) ***
24	yearsHomeSchooledCent	0.011 (0.004)	0.016 (0.007)	-0.011 (-0.005)	0.008 (0.003)	0.008 (0.003)
25	ageCent	-0.013 (-0.005)	0 (0)	-0.036 (-0.014) *	0.007 (0.003)	-0.018 (-0.007)
26	scoreseenYes	0.23 (0.091) ***	0.254 (0.1) ***	0.348 (0.136) ***	-0.082 (-0.033)	-0.039 (-0.016)
27	reglevelCategoryLow Regulation	-0.091 (-0.036)	-0.16 (-0.064)	-0.227 (-0.09) **	-0.383 (-0.149) ***	-0.228 (-0.09) **
28	reglevelCategoryModerate Regulation	0.035 (0.014)	-0.052 (-0.021)	0.033 (0.013)	-0.378 (-0.147) ***	-0.291 (-0.115) **
29	reglevelCategoryHigh Regulation	0.099 (0.04)	0.005 (0.002)	0.178 (0.071)	-0.424 (-0.164) ***	-0.401 (-0.156) ***

Regression Results – first half

rowname	reading	language	math	socialstud	science
1(Intercept)	-0.091 (0.464)	1.097 (0.864)	-0.142 (0.444)	2.466 (0.993) **	1.821 (0.966) *
2fathed2HS Grad Or Some College	0.258 (0.102)	0.479 (0.184) **	0.339 (0.133) *	-0.182 (-0.072)	-0.087 (-0.035)
3fathed2Associates	0.28 (0.11)	0.481 (0.185) **	0.49 (0.188) **	-0.196 (-0.078)	0.006 (0.003)
4fathed2Bachelors	0.171 (0.068)	0.311 (0.122)	0.35 (0.137) *	-0.179 (-0.071)	0.038 (0.015)
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6mothed2HS Grad Or Some College	0.772 (0.28)	-0.717 (-0.263)	0.312 (0.123)	-1.111 (-0.367)	-0.733 (-0.268)
7mothed2Associates	0.695 (0.257)	-0.825 (-0.295)	0.443 (0.171)	-1.234 (-0.391)	-0.902 (-0.317)
8mothed2Bachelors	0.809 (0.291)	-0.598 (-0.225)	0.445 (0.172)	-1.077 (-0.359)	-0.784 (-0.283)
9mothed2Masters or Above	0.967 (0.333)	-0.429 (-0.166)	0.568 (0.215)	-0.917 (-0.32)	-0.672 (-0.249)
10income2$55K - $74,999K	0.04 (0.016)	0.046 (0.018)	0.03 (0.012)	-0.243 (-0.096) *	-0.092 (-0.037)
11income2$75K - $124,999K	0.096 (0.038)	0.101 (0.04)	0.056 (0.022)	0.094 (0.037)	0.191 (0.076)
12income2$125K - 174,999K	0.102 (0.04)	0.01 (0.004)	0.042 (0.017)	0.194 (0.077)	0.239 (0.094) *
13income2$175K or Above	0.193 (0.076) *	0.06 (0.024)	0.146 (0.058)	0.093 (0.037)	0.196 (0.078)
14maincertYes	-0.108 (-0.043)	-0.13 (-0.052) *	-0.12 (-0.048) *	-0.061 (-0.024)	0.016 (0.006)

Regression Results – second half

15	childethAsian	0.209 (0.083)	0.369 (0.144) **	0.388 (0.151) **	0.273 (0.108)	0.153 (0.061)
16	childethBlack or African American	-0.16 (-0.064)	-0.045 (-0.018)	-0.52 (-0.198) ***	-0.17 (-0.068)	-0.37 (-0.144)
17	childethHispanic	-0.052 (-0.021)	0.087 (0.034)	0.122 (0.048)	-0.194 (-0.077)	-0.227 (-0.09) *
18	childethOther	-0.111 (-0.044)	0.166 (0.066)	0.021 (0.008)	-0.044 (-0.017)	-0.15 (-0.059)
19	percHomeSchooledCent	0.088 (0.035)	-0.046 (-0.018)	0.105 (0.042)	0.254 (0.1)	0.38 (0.148) *
20	formageCent	-0.068 (-0.027) ***	-0.098 (-0.039) ***	-0.064 (-0.025) ***	-0.04 (-0.016)	-0.036 (-0.015)
21	sexMale	-0.079 (-0.032)	-0.171 (-0.068) ***	0.169 (0.067) ***	0.023 (0.009)	0.069 (0.027)
22	structimeCent	0.031 (0.012)	0.052 (0.021) **	0.059 (0.024) ***	0.041 (0.016)	0.018 (0.007)
23	numchildCent	-0.018 (-0.007)	-0.008 (-0.003)	-0.032 (-0.013)	-0.06 (-0.024) **	-0.077 (-0.031) ***
24	yearsHomeSchooledCent	0.011 (0.004)	0.016 (0.007)	-0.011 (-0.005)	0.008 (0.003)	0.008 (0.003)
25	ageCent	-0.013 (-0.005)	0 (0)	-0.036 (-0.014) *	0.007 (0.003)	-0.018 (-0.007)
26	scoreseenYes	0.23 (0.091) ***	0.254 (0.10) ***	0.348 (0.136) ***	-0.082 (-0.033)	-0.039 (-0.016)
27	reglevelCategoryLow Regulation	-0.091 (-0.036)	-0.16 (-0.064)	-0.227 (-0.09) **	-0.383 (-0.149) ***	-0.228 (-0.09) **
28	reglevelCategoryModerate Regulation	0.035 (0.014)	-0.052 (-0.021)	0.033 (0.013)	-0.378 (-0.147) ***	-0.291 (-0.115) **
29	reglevelCategoryHigh Regulation	0.099 (0.04)	0.005 (0.002)	0.178 (0.071)	-0.424 (-0.164) ***	-0.401 (-0.156) ***

Variables that predict 3 or more of 5 subject areas

Only Three:

- Age at which formal instruction began – reading (3 percentiles), language (4), and math (2); each year begin younger, percentiles higher

- Scores seen before participated – if seen, scores higher for reading (9 percentiles), language (10), and math (14)

- No regulation/least regulation states had higher scores than low regulation states (but not medium and high regulation states) in math (9 percentiles), social studies (15), and science (9)

Future Work on this Study and Limitations

- Good for intra-sector (homeschooling) analysis
- Although we got a good variety of families and children – greater diversity than preceding studies – cannot sample is representative
- Working to get data that will allow us to do inter-sector comparison with the public schooled (e.g., Stanford Education Data Archives (SEDA); open to suggestions)
- Always looking for collaborators to do comparative studies

Key Points To Date in this Study

- Significantly updates findings on academic achievement (13 years)
- For those who homeschool and participated in this study, achievement test scores are well above average
- Very few demographic or other variables we include notably predict test scores within this educational sector
- Perhaps homeschooling is an ameliorator of the negative correlates of achievement in institutional public schooling (Murphy, ; Ray, 1997, 2000)
- Both of the above findings are consistent with past research across three decades

The End