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Contemporary homeschooling arrangements:

An analysis of three waves of nationally representative data

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Abstract

Homeschooling has increased dramatically in recent decades. During this period of expansion, scholars have reported on growing diversity in the ways that homeschool families educate their children. However, research tends to treat homeschooled children as a uniform group without accounting for differing homeschool arrangements. In this study, we examine the prevalence of four types of homeschool arrangements reported in prior literature as follows: (1) home education supplemented by the use of a private tutor or a homeschool cooperative, (2) home education supplemented by the use of online learning, (3) home education supplemented by part-time enrollment in a brick-and-mortar school, and (4) fully parent-delivered home education. For the analyses, three cross-sectional waves of nationally representative data on homeschool families (n = 1,468) from the National Household Education Survey (NHES: 2012, 2016, 2019) are examined. Results indicate that the four types of homeschool arrangements tested in this study are widespread and that the majority of homeschool families supplement home education with cooperatives and tutors, brick-and-mortar schools, and online education. Homeschool families who continue to perform conventional homeschooling without additional supplements are more likely to be white and less educated with elementary-aged children in the South region of the United States. Homeschool families whose children attend brick-and-mortar schools part-time are less likely to be white and more likely to have secondary school-aged children in urban areas. Use of online education is also higher at the secondary school level.

Key Words. Homeschooling; Home education; National Household Education Survey; Typology of homeschooling

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American families are increasingly seeking to customize their children's educational experiences (Jolly & Mattews, 2017; Morse & Bell, 2018; Riley, 2020). Growing use of private tutors, learning pods, after-school enrichment programs, personalized curricula, and online tools creates differentiated educational opportunities both inside and outside of the regular school day (Horn, 2021; Park et al., 2016; Zhang et al., 2020). Schools that specialize in the arts, science, math, and career and technical education have become commonplace in response to demands for greater customization (Gottfried & Plasman, 2018; Merrit et al., 2004). Some US states have even adopted Education Savings Account programs that allocate funds to families to use for educational services and programs of their choosing (Burke & Bedrick, 2018).

In the midst of this trend toward greater customization, the practice of homeschooling has risen rapidly. The number of homeschooled children increased from approximately fifteen thousand children in the 1980s to an estimated two million children prior to the COVID-19 pandemic in 2019 (McQuiggan, Megra, & Grady 2017; Renzulli, Werum, & Krongber, 2020). Homeschooling has also come to represent one of the most highly diverse segments of K-12 education. Once considered a fringe practice restricted to conservative Christian households and progressive unschoolers, researchers have chronicled how homeschooling has evolved to encompass a range of educational approaches, goals, and sociodemographic groups (Jolly et al., 2020; Kunzman & Gaither, 2020; Mazama & Lundy, 2015; Murphy, 2014). Evidence further indicates that the mode of instructional delivery for home education has diversified considerably over the past two decades (Murphy, 2012; Wearne, 2019).

Although conventional homeschooling in which parents provide all instruction at home remains prominent, approaches to homeschooling that combine parent-delivered instruction with digital learning, private tutors, homeschool cooperatives, university coursework, and part-time attendance at brick-and-mortar public and private schools seem to be increasing in popularity among homeschool families (Kunzman & Gaither, 2020; Phillips, 2010; Saiger, 2016; Wearne, 2016). Varying approaches to home

education raise important questions for empirical research. For example, analyses that treat homeschooling families uniformly may mask key heterogeneity in outcomes within the homeschooling population. There may be substantive differences among children receiving traditional home education and those who receive parent instruction in tandem with other educational services, programs, and part-time attendance at brick-and-mortar schools. Systematically describing different homeschool arrangements is needed to understand the effects of the practice and its ongoing evolution. Nevertheless, little empirical research has sought to develop a systematic understanding of varying arrangements that homeschool families use.

In this study, we examine three cross-sectional waves of nationally representative data from the National Household Education Survey (NHES: 2012, 2016, 2019), administered by the US Department of Education. By pooling these three survey waves, we are able to analyze a relatively large sample of homeschooling families (n = 1,468) that is uncommon in scholarly analyses of home education. The NHES queries families on their educational activities and approaches to homeschooling, allowing for an investigation of differing homeschool instructional arrangements. This study thus has the potential to deepen conceptual knowledge of homeschool arrangements that is befitting of how the practice has evolved. Clearer conceptual distinctions can also improve the methodological sophistication of homeschooling research by testing for variation in outcomes according to how families provide home education.

Methodological Challenges to Researching Homeschooling

Research on homeschooling presents significant challenges that has left the literature in an inchoate state (Kunzman & Gaither, 2020). One of the barriers to scholarly analysis of home education is that homeschool families can be difficult to identify for analysis (Murphy, 2014). The United States is one of the least restrictive nations in the developed world when it comes to regulating homeschooling. Eleven states do not require parents to notify authorities that they are homeschooling (Dwyer, 2019). A number of states that do require families to notify states or local school districts of their intent to homeschool have few other formal regulations in place (Carlson, 2020). Along with the challenge of

locating homeschooling families, scholars may struggle to elicit participation from homeschool families who feel that being observed by researchers threatens privacy and independence from oversight (Dwyer, 2019; Kunzman & Gaither, 2020).

The difficulty of sampling homeschool households is evident in the literature. Many empirical studies on homeschooling rely on small samples (Kunzman & Gaither, 2020). Research has not addressed the issue of selection bias when comparing homeschooled children to other children attending brick-and-mortar schools. A small number of studies use comparatively large national samples (Hamlin, 2019; Smith & Sikkink, 1999), but this work tends to treat homeschooling arrangements uniformly without distinguishing among different modes of delivering home education. Given how approaches to homeschooling have changed, it is plausible that heterogeneity in outcomes exists within the homeschooling population (McShane, 2021).

Conceptualizing homeschool arrangements

Diversity in the style and delivery of home education have made it difficult to define and conceptualize the practice. Ray (2013) describes homeschooling as "a form of private education that is parent-led and home-based" (p. 324). The U.S. Department of Education has a more expansive view of homeschooling as it does not consider the role of parents and counts children as being homeschooled if they receive most or all of their education at home instead of at a public or private school (Cui & Hanson, 2019). Murphy (2012) builds on these definitions of homeschooling by identifying four components of homeschooling: (a) setting, (b) funding, (c) provision, and (d) control. In describing these concepts, the *setting* for homeschooling is centered on the child's home as opposed to a district-run, charter, or private school that approximately 97 percent of all school-aged children attend (US Department of Education, 2020). Unlike children enrolled in district-run or charter schools, *funding* for homeschooling typically does not come from government sources but from families themselves, and parents, rather than state- or privately-funded employees, tend to be the primary *providers* of home education. Homeschooling parents are also thought to retain direct *control* over their children's education, including over pedagogy and curriculum (Neumann & Guterman, 2017).

Murphy's (2012) core components of homeschooling have been widened as families supplement parent-delivered home education with an array of programs, services, and schools (Dwyer, 2019; Wearne, 2020). One longstanding example of supplementary education is through participation in homeschool cooperatives where homeschool families pool expertise and resources to deliver classes to small groups of homeschooled children (Anthony, 2015; Addo, 2003; Phillips, 2010). The hiring of private tutors is another way that homeschool families attempt to enhance home education with expertise from outside of the family unit. The proportion of homeschooling families in the United States who hire private tutors or belong to homeschooling groups or cooperatives has proliferated in tandem with the emergence of homeschooling in the late 1980s (Coleman & McCracken, 2020; Gaither, 2017; Murphy, 2012). Scholarship on homeschooling suggests that homeschool families are increasingly supplementing their children's education with online tools, resources, and coursework (Mann, 2021; Saiger, 2016). Participation in these activities potentially forces a degree of compromise and loss of control among individual families since they must partially agree to the educational methods of a cooperative or online resource (Anthony, 2015). Families who rely on formal curricular materials or college courses to teach their children must, in part, submit to the content and pedagogical approaches of these resources (Hanna, 2012; Loveland, 2017). In these ways, the degree of parental control can differ across varying approaches to home education.

State policies have also increased part-time access to educational resources for homeschooled children (Jolly & Matthews, 2020). Private school choice programs, education savings accounts, charter schools, and virtual education have created opportunities for homeschool families to combine parent-delivered instruction with other traditional and non-traditional modes of instruction. In eight states, education savings accounts allow families to withdraw their child from their assigned district-run public school and receive a portion of per-pupil funding to spend on state-approved educational services, including private school tuition, curricular materials, online courses, tutoring, and educational therapy (Burke & Bedrick, 2018). In addition to these trends, homeschooled children attend brick-and-mortar school settings on a part time basis (Wearne, 2019, 2020). These homeschool families supplement home

educational activities with educational and extracurricular activities in virtual, private, and charter schools (Huerta et al., 2009). Homeschooled children from these families may spend part of their day in schools to receive formal instruction in specific content areas or to participate in sports and other extracurricular activities (Johnson, 2013). A number of so-called *hybrid homeschoolers* have been found to attend brick-and-mortar charter or private schools for 2 to 3 days a week and are educated at home on the other days (McShane, 2021; Wearne, 2016; 2019). Even though there is debate about whether homeschooled children who also attend brick-and-mortar schools should be considered homeschoolers, these families self-identify as homeschoolers (Coleman & McCracken, 2020; Wearne 2016; 2019). Other children rely on curricular materials provided by traditional public schools but administered by their parents because these children are unable to attend school for medical reasons or happen to live in remote areas that make regularly attending school extremely difficult, such as for children living in remote areas of Alaska (Wilkens & Kalenda, 2019). This practice has been called correspondence homeschooling (Coleman & McCracken, 2020; Murphy 2012).

Taken together, the literature points to different homeschooling arrangements that signify variability in the way that children experience homeschooling. Nonetheless, research has not provided a systematic breakdown of ways that children are homeschooled, and consequently, has generally not accounted for different arrangements in analyses of outcomes for homeschooled children. Research on homeschool outcomes may then conceal insightful heterogeneity within the homeschooling population.

The Current Study

In this study, we explore both the prevalence of and sociodemographic factors associated with four types of homeschool arrangements frequently identified in the literature (Coleman & McCracken, 2020; Gaither, 2017; Mann, 2021; Wearne, 2019). This existing scholarship indicates the possibility of four common types of homeschool arrangements. The first type represents homeschooled children who use private tutors or homeschool cooperatives to complement parent-led home education. In a second type, homeschooling families supplement their children's education at home with online learning and coursework. The third type describes children who are homeschooled but also attend brick-and-mortar

private and public schools part time. The fourth type is traditional homeschooling where families directly provide all instruction at home without making use of formal supplemental services, programs, or schools. While studies have offered accounts of different types of approaches to home education, the actual prevalence of homeschoolers who use online instruction, a brick-and-mortar schools for part of the week, or specific educational services is uncertain. Whether certain homeschooling practices are sufficiently widespread to warrant distinctions in statistical analysis remains an empirical question. As part of testing the four types of homeschool arrangements, we designate a child as being homeschooled when the majority of a child's education is directed by a parent. This definition includes children whose families combine home education with online learning, cooperatives, tutors, college enrollment, and part-time attendance at a brick-and-mortar schools, but it excludes children who are full-time virtual school students. This designation aligns with that of the US Department of Education, which classifies children who spend the majority of their instructional time outside of public or private school as homeschooled (US Department of Education, 2020).

In the first phase of analysis, we evaluate the prevalence of four different kinds of homeschooling practices by asking the following question:

Research question 1. *How prevalent are four types of homeschool arrangements?*

After evaluating the prevalence of four homeschool arrangements, associations among these four types of arrangements and sociodemographic factors are explored. To investigate these associations, the following question is asked:

Research question 2. *Are different sociodemographic background factors associated with different homeschool arrangements?*

In the next section we describe our data and empirical strategy for answering these questions in greater detail.

Methods

Data

To estimate the proportion of homeschooled children who (a) are taught by a private tutor or belong to a homeschooling cooperative, (b) receive online instruction, (c) attend a brick-and-mortar school, or (d) use none of the aforementioned educational supplements, we pool three of the most recent waves of data from the National Household Education Survey (NHES: 2012; 2016; 2019). The U.S. Department of Education administers the NHES to nationally representative samples of households with children in kindergarten through grade 12 who attend public and private schools as well as those who homeschool. By combining data from three cross-sectional waves of the NHES, the total pooled sample size is 1,468 homeschool families. Pooling the three survey waves strengthens statistical power and the representativeness of analytical sample (Levy and Lemeshow 2008).

For each of the three NHES waves, the survey was conducted in two phases. In the first phase, a household screener was used to select households for the survey, including the identification of current homeschool households. The U.S. Department of Education identifies children as homeschooled if they do not attend public or private school for most of their education. In the second phase, eligible individuals identified from the initial screener were surveyed. Parents or guardians whose children were homeschooled were provided with a survey that queried them about aspects of homeschooling. The survey contains extensive data on the educational practices of homeschooling families. Respondents who homeschooled their children were asked about their decisions to homeschool, levels of parental involvement, and family and extracurricular activities, amount of time spent on homeschooling, subject areas covered, resources used for homeschooling, and other schooling arrangements used in tandem with parent-delivered home education. All respondents reported on their ethnic background, income, family structure, household size, and educational level.

Table 1 presents summary statistics for the sample of homeschoolers in the NHES for each of the three survey waves. Sampling weights are applied for all analyses presented in this study. Across all three survey waves, nearly half of homeschooled children were male. The ethnic composition of homeschooling families is also similar across the waves with the exception of a considerably high proportion of Hispanic respondents in 2016 together with a relatively low proportion of non-Hispanic

white respondents. The proportion of high-income homeschooling families increased from 2012 to 2019. About one-fifth of homeschooling families reported household incomes of greater than $100,000 in 2012 and 2016. The proportion of families in this income bracket is about one-third in 2019.

Table 1. Summary statistics of three waves of the National Household Education Survey

	Percent by Year		
	2012	2016	2019
Male Child	0.49	0.48	0.52
Child's Grade			
Kindergarten	0.06	0.06	0.07
First	0.03	0.04	0.08
Second	0.03	0.07	0.07
Third	0.06	0.05	0.06
Fourth	0.04	0.06	0.08
Fifth	0.07	0.07	0.07
Sixth	0.07	0.09	0.08
Seventh	0.08	0.05	0.07
Eighth	0.10	0.07	0.09
Ninth	0.10	0.07	0.08
Tenth	0.10	0.13	0.08
Eleventh	0.14	0.11	0.08
Twelfth	0.12	0.12	0.09
Child's Race/Ethnicity			
White (Non-Hispanic)	0.77	0.59	0.71
Black	0.05	0.06	0.05
Hispanic	0.10	0.25	0.15
Other/Mixed Race	0.08	0.09	0.08
Parent's Highest Education Level			
Less than High School	0.03	0.10	0.06
High School (or equivalent)	0.14	0.14	0.10
Some College	0.36	0.32	0.29
Bachelor's Degree	0.20	0.26	0.29
More than Bachelor's Degree	0.27	0.19	0.27
Household Income ($)			
10,000 or less	0.04	0.08	0.04
10,001 to 20,000	0.08	0.10	0.05
20,001 to 30,000	0.11	0.11	0.09
30,001 to 40,000	0.10	0.09	0.08
40,001 to 50,000	0.11	0.10	0.08
50,001 to 60,000	0.09	0.09	0.08
60,001 to 75,000	0.13	0.11	0.10
75,001 to 100,000	0.16	0.16	0.16
100,001 to 150,000	0.11	0.12	0.20
More than 150,000	0.08	0.06	0.13
Region			
Northeast	0.09	0.10	0.11
South	0.47	0.45	0.46
Midwest	0.19	0.17	0.20
West	0.25	0.27	0.24

Locale			
Urban	0.28	0.29	0.26
Suburb	0.29	0.37	0.36
Town	0.09	0.10	0.10
Rural	0.34	0.24	0.28
Sample Size	397	552	519

Note: Sampling weights are applied.

Information on how many years children have been homeschooled is listed in Table 2 by grade level. The average sixth-grade homeschooled child in the full sample has been homeschooled for 4.2 years of their K-12 education. The average twelfth grade homeschooled student has been homeschooled for nearly 5 years. These grade-by-grade trends are consistent with other evidence that most homeschooled children are not homeschooled for the entire duration of their K-12 education. The average number of years spent being homeschooled across the three survey waves is largely stable, excepting a decrease in the number of years homeschooled for the average high school student in 2016, which may be a product of sampling error.

Table 2. Average number of years homeschooled by grade level

	Number of Years Homeschooled For Full Sample and By Year			
	Full Sample	2012	2016	2019
Kindergarten	1.0	1.0	1.0	1.0
First	1.7	1.7	1.6	1.7
Second	2.4	2.8	2.3	2.4
Third	2.7	2.3	2.7	3.0
Fourth	3.4	3.8	3.2	3.4
Fifth	3.2	4.0	3.9	2.9
Sixth	4.2	5.0	3.8	4.1
Seventh	4.3	4.6	3.8	4.5
Eighth	4.4	4.2	3.7	5.2
Ninth	5.2	5.1	4.8	5.7
Tenth	3.7	5.2	2.2	5.0
Eleventh	4.4	5.4	2.6	5.8
Twelfth	4.8	6.1	3.4	5.5

Note. Sampling weights are applied.

Empirical Strategy

To answer the first research question, the percentage of homeschooling families who belong to each one of the four types of homeschooling arrangements is reported. Items on the NHES questionnaire for each year ask parents about whether they rely on a private tutor, belong to a cooperative, use online

education, or spend time in a brick-and-mortar school. The data are coded to identify respondents who report using any of these services. Data are reported for the proportion of respondents who do so for the overall sample and separately by survey wave.

To answer the second research question, a series of logistic regression models are used to estimate associations between the four types of homeschooling arrangements and sociodemographic background factors. Specifically, we estimate the following model:

$$Y_i = \beta_0 + \beta_1 Male_i + \beta_2 Elementary_i + \beta_3 White_i + \beta_4 Bachelors_i + \beta_5 Median\_income_i + \beta_6 Urban_i + \beta_7 Northeast_i + \beta_8 Midwest_i + \beta_9 West_i, \quad (1)$$

where Y_i is one of four respective binary variables equaling 1 if respondent *i* (a) uses a private tutor or belongs to a homeschooling cooperative, (b) uses online instruction, (c) enrolls their child in a brick-and-mortar school part-time, or (d) uses none of the aforementioned educational resources. The remainder of the independent variables are also binary, indicating whether the homeschooled child of the respondent is male, white, has a parent who has at least a bachelor's degree, has a household income above the national median, and lives in an urban area. We include indicators for the region of the United States where the respondent *i* lives, omitting an indicator for respondents who live in the South region so that the coefficients on census region are interpreted as differences between respondents living in a specific region relative to respondents living in the South. The results of these analyses are reported as odds ratios. Coefficients with values close to one indicate that the corresponding demographic characteristic is not a substantively significant predictor of whether a family belongs to a particular group of homeschoolers. By contrast, coefficients greater (less) than one indicate that families with the corresponding demographic characteristic are more (less) likely to belong to a particular group.

Results

Prevalence of Four Types of Homeschooling Arrangements

Table 3 presents the proportion of homeschooling families by survey year who (1) used a private tutor or belong to a homeschooling cooperative, (2) used some form of online instruction, (3) enrolled their child in a brick-and-mortar school for part of the regular school week, and (4) did not use any of the

three types of aforementioned educational supplements. In Table 3, nearly half of homeschooling families reported using a private tutor or belonging to a cooperative in 2012. There appears to be a slight increase in this approach to homeschooling in 2019 when 52 percent of homeschooled families reported using such services compared to 47 percent in 2012 and 45 percent in 2016. The proportion of homeschool families who availed themselves of online instruction appears to have increased over the past decade as well. These patterns are consistent with the contemporaneous rise in the availability of online educational resources (Tlili et al., 2020). In 2012 and 2016, approximately one-third of homeschool families used these resources. In 2019, approximately 40 percent of homeschooling families did so. We further disaggregated families who used online instruction into those who also used a private tutor or belonged to a homeschooling cooperative and those who did not. There seems to be an equal split between these two types of families who used online instruction. For instance, in 2012, 14 percent of homeschool families used online instruction but did not use a private tutor or belong to a cooperative. Eighteen percent of families, on the other hand, relied on online instruction as well as private tutoring or homeschool cooperatives for their child's education. In 2019, 19% of homeschool families used online instruction, but did not use a private tutor or belong to a cooperative, whereas 21% used online instruction in tandem with a private tutor or homeschool cooperative.

Among homeschooling families who sent their children to brick-and-mortar schools for part of the school week, 26% of homeschooling families did so in 2012. The use of this type of homeschool arrangement increased to about one-third in 2016 but declined to 28 percent in 2019. These families were disaggregated according to the number of hours their homeschooled child spent at a brick-and-mortar school. Homeschooled children who also attended brick-and-mortar schools spent a growing amount of time in these settings. In 2012 and 2016, a little over half of homeschooled children who attended a brick-and-mortar school part time spent up to 10 hours a week in school. This percentage decreased to 36 percent in 2019. Patterns suggest upward shifts in the proportion of homeschooled children spending 10 to 24 hours or over 24 hours per week in brick-and-mortar schools. In 2019, 26 percent of families reported sending their homeschooled child to brick-and-mortar schools for 10 to 24 hours per week. The

proportion of families who reported sending their homeschooled children to brick-and-mortar schools for over 24 hours per week also increased from 25 to 38 percent between 2012 and 2019. Overall, the prevalence of conventional homeschooling families, or those who used no supplements, decreased over time. In 2012, 32% of homeschooling families fell into this category. The proportion of these families dropped to 24% in 2016 and to about 22% in 2019.

Table 3. Prevalence of four types of homeschooling arrangements

	Percent by Year		
	2012	2016	2019
Type 1: Uses private tutor or belongs to homeschool cooperative	0.47	0.45	0.52
Type 2: Uses online instruction	0.32	0.33	0.40
Does not use private tutor or belong to cooperative	0.14	0.17	0.19
Also uses private tutor or belongs to cooperative	0.18	0.16	0.21
Type 3: Enrolled in a brick-and-mortar K-12 school	0.26	0.32	0.28
Average time spent per week in formal school (hours)			
Less than 10	0.54	0.53	0.36
Between 10 to 24 hours	0.21	0.11	0.26
Over 24 hours	0.25	0.36	0.38
Type 4: Uses no educational supplements	0.32	0.24	0.22

Note. Sampling weights are applied.

Factors Associated with Four Types of Homeschool Arrangements

Table 4 presents coefficient estimates from logistic regression models as odds ratios. In Model 1, respondents who are white ($p < .05$) and who have bachelor's degree ($p < .01$) were associated with a higher likelihood of using a private tutor or belonging to a homeschool cooperative. For example, white families were approximately 1.4 times more likely to use a private tutor or belong to a homeschool cooperative relative to other families in the sample. Parents with a bachelor's degree were 1.5 times more likely to use a private tutor or belong to a homeschool cooperative. Both the Northeast ($p < .05$) and West ($p < .05$) regions were related to a higher likelihood of using a private tutor or belonging to a homeschool cooperative relative to the South region.

In Model 2, having a primary school child was associated with lower use of online instruction ($p < .01$). Respondents with a primary school-aged child were 2.6 times less likely to report using online instruction relative to those with secondary school children. The Midwest region was also associated with greater use of online instruction relative to the South region. In Model 3, respondents who were white ($p < .01$), bachelor's degree holders ($p < .05$), and had primary school-aged children ($p < .05$) were less likely enroll their homeschooled child in a brick-and-mortar school part time. Respondents with primary school-aged children were 1.4 times less likely to report that their children attended a brick-and-mortar school, 2.7 times less likely to be white, and 1.4 times less likely to hold a bachelor's degree. They were also more likely to be living in urban areas ($p < .05$) and in the West Region ($p < .01$). In Model 4, respondents who report not using any of the aforementioned educational supplements were associated with a higher likelihood of having primary school-aged children ($p < .01$), being white ($p < .05$), and living in the South region ($p < .01$). They were 1.5 times more likely to have primary school-aged children and 1.4 times more likely to be white. They were also less likely to report having a bachelor's degree ($p < .05$), being 1.4 times less likely report having a bachelor's degree.

Table 4. Background factors predicting homeschooling arrangements (n = 1,468)

	(1) Uses a Private Tutor or Belongs to Cooperative	(2) Uses Online Instruction	(3) Attends Any Brick-and-Mortar K-12 School	(4) Uses No Educational Supplements
Male Child	0.947	0.916	0.843	1.111
	(0.101)	(0.103)	(0.103)	(0.136)
Primary-School Aged	1.082	0.382***	0.739**	1.562***
	(0.121)	(0.048)	(0.097)	(0.198)
White	1.347**	1.000	0.370***	1.362**
	(0.163)	(0.129)	(0.048)	(0.196)
Parent has bachelor's degree	1.535***	0.823	0.721**	0.722**
	(0.182)	(0.104)	(0.096)	(0.100)
Household income above $60,000	0.960	1.194	0.920	0.953
	(0.115)	(0.151)	(0.121)	(0.132)
Urban Residence	1.124	1.059	1.326**	0.847
	(0.136)	(0.138)	(0.176)	(0.121)

Census Region				
Northeast	1.595**	0.800	0.840	0.816
	(0.292)	(0.163)	(0.183)	(0.173)
Midwest	1.218	1.409**	1.180	0.800
	(0.178)	(0.217)	(0.205)	(0.133)
West	1.329**	1.174	1.868***	0.642***
	(0.177)	(0.163)	(0.272)	(0.102)
Constant	0.491***	0.580***	0.777	0.448***
	(0.083)	(0.103)	(0.146)	(0.086)

Notes. Odds ratios are presented. Sampling weights are applied. The pooled sample size is 1,468. Models also control for the survey year. *** p<0.01, ** p<0.05, * p<0.1

Discussion

The practice of homeschooling has grown dramatically in recent decades. During this period of expansion, scholars have reported increasing diversity in the ways that families homeschool their children (Gaither, 2017; Fields-Smith & Kisura, 2013; Loveland, 2017; Wearne, 2020). The actual prevalence of different homeschool arrangements, however, has largely been uncertain because observations in previous research have been derived from case studies and small samples rather than representative data. This study uses a large nationally representative sample to examine four types of homeschool arrangements: (1) use of a private tutor or a homeschool cooperative, (2) use of online instruction or coursework, (3) part-time enrollment in a brick-and-mortar school, and (4) fully parent-delivered home education. Results indicate that the four types of homeschool arrangements tested in this study are commonplace within the homeschool population. The majority of homeschool households combine home education with use of homeschool cooperatives, private tutors, brick-and-mortar schools, and online education. Those who continue to practice homeschooling without these supplements are more likely to be white and less educated with elementary-aged children in the South region of the United States. By contrast, those who use brick-and-mortar schools part-time are less likely to be white and more likely to have secondary school-aged children in urban areas. Use of virtual learning is more common at the secondary school level.

The results of this study underscore diversity in the delivery of home education that can be classified into a four-point typology of homeschool arrangements. Although prior research has documented various pedagogical approaches and motivations behind decisions to homeschool, it has not tested varying homeschool arrangements with sufficient data (Green & Hoover-Dempsey, 2007; Neuman & Guterman, 2017). Prior work on homeschooling outcomes that treat homeschooled children uniformly possibly conceal key heterogeneity within the homeschool. Future research might consider distinguishing between the four types of homeschool arrangements presented in this study. Outcomes related to academics, socialization, and employment that are of particular interest to homeschool researchers could differ across these four types of arrangements (Jeynes, 2016). For instance, children who participate in cooperatives may have wider access to academic content that children who are homeschooled by their parents alone do not have. The social outcomes and extracurricular opportunities of those who attend brick-and-mortar schools part-time could also be different from those who rely on online instruction to supplement home education.

This study contributes to the literature by providing an empirically-derived approach to describing the practice of homeschooling. Both scholars and government agencies have advanced varying perspectives on what qualifies as homeschooling (Carlson, 2020; Isenberg, 2007; US Department of Education, 2019; US Census Bureau, 2020; Wearne, 2019). Our four-point typology of homeschooling covers homeschool arrangements from a large representative sample of homeschool families. This typology of homeschooling requires that parents direct the majority of a child's education so it excludes children who attend virtual schools full time. This criterion for exclusion is significant because families with children attending full-time virtual schools, in some cases, identify themselves as homeschoolers on national surveys (US Census Bureau, 2020). It may be important for future work to avoid classifying full-time virtual school students as being homeschooled. The analyses in this study have several limitations. Even though a nationally representative sample of homeschool families is analyzed across three survey waves, this sample may be missing homeschool families who wish not to be identified. It is conceivable that these families are more likely to be those who perform conventional homeschooling without availing

themselves of supplemental services, programs, and schools. The prevalence of conventional homeschooling could then be higher than what is estimated in this study. Bias from survey nonresponse and hard-to-reach subpopulations are a constant threat to the representativeness of any survey. While NHES data were carefully gathered by the US Department of Education to build a nationally representative sample of homeschool families, this issue remains a limitation, and how our results would change if the sample is systematically missing certain types of families is unclear.

Together with these limitations, there might be variation in educational experiences among homeschooled children within the four-point typology of homeschool arrangements. As one example, conventional homeschoolers who do not use supplements deliver both structured and unstructured (e.g. unschooling) forms of homeschooling that have major differences between them (Neumann & Guterman, 2017). The effectiveness of online coursework might vary based on the level of live interactions that are elicited and the quality of content that is offered in online formats. Moreover, other unique homeschool arrangements could be overlooked in this study's analysis. Additional scholarship may seek to test variation both within and beyond the four types of homeschool arrangements presented in this study. Nevertheless, the four-point typology of homeschool arrangements that we highlight covers a very large portion of the homeschool population.

Despite these caveats, this study offers conceptual clarity on homeschooling that is grounded in empirical analysis. An ability to conceptualize homeschooling accurately is critical since homeschool families who hire private tutors, belong to cooperatives, use online education, or attend brick-and-mortar schools part time seem to have substantively different experiences than those who do traditional homeschooling without such educational supplements. Educational and later-life life outcomes across the four groups of homeschoolers we identified might be different but cannot be probed without an adequate typology of homeschooling arrangements. To build on this four-point typology, what may be needed is formal language that differentiates among types of homeschoolers based on the nature of their practice. Language, such as the term *unschooler*, exists to make these kinds of distinctions.

In addition, conceptual clarity is needed because of fierce scholarly debates over how to regulate homeschooling (Dwyer & Peters, 2019). Some scholars contend that homeschooling is socially isolating and has negative ramifications for children and broader society (Bartholet, 2020). While the wellbeing of homeschooled children is a critical end to pursue in the context of homeschooling, accurate understanding of the prevalence of such isolation and other harmful effects is a precondition for sound policymaking. Scholarly discussions tend to be dominated by broad generalizations about homeschool families as a whole. Yet, NHES data that we analyze demonstrates that about one-third of homeschooled children enroll part-time in a brick-and-mortar school. Half of sampled families report belonging to a cooperative or using a private tutor. The proportion of homeschoolers who do not use any educational supplements outside of the home is on the decline, but it is this group of homeschooled children who tend to be used to make generalizations about whether homeschooling is a beneficial or harmful practice and whether states should adopt new regulations on homeschooling. To improve the substance of these debates, they may need take into account the proliferation of different forms of homeschooling. For future scholarship, keeping pace with the evolution of homeschooling will also be essential to developing a firm empirical understanding the practice.

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