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ARTICLE



Contemporary Homeschooling, Persistent Debates, and the Need for a New Generation of Research

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ABSTRACT

Homeschooling has grown into a large and highly diverse segment of American education. However, empirical studies of homeschooling have remained methodologically underdeveloped. The purpose of this article is to chart an agenda for a new generation of research on homeschooling. A narrative review of quantitative research published since 2000 is undertaken to identify gaps in the current evidence base. This review indicated that prior work is generally limited by small samples, uniform operationalizing of homeschool practice, and cross-sectional data sources. This article then concludes by describing strategies that researchers can use to address the limitations of previous studies.

KEYWORDS

Homeschooling; home education; narrative review; homeschooling research

Introduction

Homeschooling has expanded to become a significant segment of American education. In 2019, estimates from the U.S. Department of Education placed the US homeschool population at approximately two million students, which was 3% of all K-12 students (National Household Education Survey [NHES], 2019). Amid the COVID-19 pandemic in 2021, data from the US Census Bureau's Household Pulse Survey raised the estimated percentage of homeschooled students to 5.4% (Duvall, 2021). Even though official post-pandemic projections are needed to determine precisely how much homeschooling has grown, unofficial estimates suggest that the practice is on the rise (Musaddiq et al., 2022).

Homeschooling is not only growing but also undergoing a transformation (Hamlin & Peterson, 2022). It is increasingly characterized by socio-demographic diversity among its practitioners, different philosophical approaches to education, and various modes of instructional delivery. The traditional conception of homeschooling as education delivered exclusively at home by parents describes less than one-quarter of all homeschooled students today (Hamlin & Cheng, 2022). Home education is instead more frequently used in tandem with private tutors, cooperative classes, online classes, part-

time post-secondary education (e.g., concurrent enrollment), and part-time attendance at brick-and-mortar public or private schools (i.e., hybrid homeschooling) (Wearne, 2021). Unlike their predecessors, contemporary homeschool families now have the option to teach subjects that they are confident in, and then, choose from numerous online schools, post-secondary institutions, and homeschool cooperatives to supplement their children's education in areas where they feel their content expertise is inadequate (Tilhou, 2020).

As homeschooling families customize their children's educational experiences, movement in and out of home education has also become commonplace. Recent descriptive trends indicate that only a small percentage of children are homeschooled for their entire K-12 education (Hamlin & Cheng, 2022). A homeschooled student's K-12 education is likely to include both years of homeschooling as well as significant time spent attending brick-and-mortar schools. Contemporary homeschooling arrangements raise challenging methodological questions about how to identify the effects of home education. Even traditional homeschooling practice without educational supplements has been notoriously difficult to study, so the customized nature of contemporary forms of homeschooling arguably makes it even more challenging to conduct research leading to reliable claims about current practice (Kunzman & Gaither, 2020). Previous empirical studies are often derived from modest descriptive analyses, small nonrandom samples, and uniform operationalizations of homeschooling practice that treat homeschooled children as a homogenous group (Kunzman & Gaither, 2020). Very few quantitative studies test for variation in outcomes based on different forms of homeschooling or the number of years a child is homeschooled (Valiente et al., 2022).

While gaps in the literature are evident, homeschooling also inspires among the most contentious debates in education. Critics of the practice contend that it stunts academic performance, healthy socialization, and preparation for adulthood (Dwyer & Peters, 2019). Prominent opponents have routinely called for regulating homeschooling (Kunzman, 2009), and some observers have proposed outright bans on the practice, stressing high-profile cases of child abuse, educational neglect, and social isolation among children whose parents claimed to be homeschooling when authorities became aware of abuse in the home (Bartholet, 2020; Coalition for Responsible Homeschool, 2023). Homeschool supporters counter that cases of abuse and neglect are rare and not representative of families who truly homeschool their children (Ray, 2018). Advocates view homeschooling as superior when it comes to realizing families' distinct educational preferences that can range from serving gifted learners to educating children with severe disabilities (Davies & Aurini, 2003; Donnelly, 2016; Jolly & Matthews, 2018). Proponents stress that homeschooling is not at all isolating, but instead, supports healthy socialization by strengthening parent-child and sibling bonds (Merry & Howell, 2009). To evaluate competing claims,

researchers have performed studies of homeschooling in the areas of academic performance, socialization, child welfare, and postsecondary and life preparation (Kunzman & Gaither, 2020). However, methodological limitations in this literature have prevented strong conclusions about the effects of home education. Research syntheses tend to be comprehensive, but as such, include many poorly designed studies. Compounding existing methodological concerns, homeschool research has typically not been responsive to changes in the practice that have occurred in recent years.

Determining the effects of homeschooling has arguably never been a more important research endeavor considering the evolution of homeschooling and the passionate debates that the practice provokes. Therefore, the purpose of this article is to chart an agenda for a new generation of research on homeschooling. It first presents a narrative review of the best available quantitative studies of homeschooling outcomes published since 2000 in the key areas of socialization, child welfare, academic performance, postsecondary education, and outcomes in adulthood. For this review, studies were identified from references listed in three comprehensive scholarly syntheses of research on home education (Kunzman & Gaither, 2020; Medlin, 2013; Valiente, Spinrad, Ray, Eisenberg, & Ruof, 2022) as well as from direct searches of prominent homeschool researchers' Google Scholar accounts and of scholarly journals (e.g., *Journal of School Choice*, *Other Education*) that frequently publish empirical homeschool research. As part of locating studies, search terms were "homeschooling," "home education," and "hybrid homeschooling." This article defines homeschooling as parent-directed education that is mostly provided by parent/caregivers. Studies of full-time virtual school and micro school students were excluded (Valiente et al., 2022). For the review, only quasi-experimental and correlational studies using statistical controls were analyzed. Following the review of empirical research, this article then describes methodological strategies that researchers can use to produce reliable evidence with a focus on addressing methodological limitations in existing work and being responsive to contemporary homeschool practice.

Quantitative research on the outcomes of homeschooling

Academic performance (K-12)

One critique of homeschooling is that parents will be poor instructors of their children because they lack formal teaching credentials and content expertise (Wilkens et al., 2015). This problem is expected to amplify as children progress to complex academic subjects, such as high school mathematics (Bartholet, 2020). In the empirical literature, research offers a more positive outlook than a negative one when it comes to the academic performance of homeschooled students. However, there are substantial

gaps in the designs of these studies that do not permit strong conclusions one way or the other. The most fundamental problem is that of selection bias. To estimate truly causal effects of an educational intervention, researchers must randomly assign students to treatment and control conditions, or they must find a way to leverage naturally occurring experiments (e.g., charter school admissions lotteries). With homeschooling, there is no conceivable method for randomizing students to a homeschooling treatment and others to business-as-usual control group. Researchers have yet to find a naturally occurring experiment in the context of homeschooling that could be leveraged to generate credibly causal effects. Furthermore, selection effects, both in a positive and negative direction, are likely to be highly salient among homeschool families given the demands that homeschooling places on families. The choice to homeschool itself could be emblematic of high levels of parental motivation and commitment that potentially yield benefits whether a child is homeschooled or not (Davies & Aurini, 2003).

The National Home Education Research Institute's Brian Ray has produced the most studies on the academic outcomes of homeschooled students (e.g., Ray, 1997, 2010). In these studies, homeschooled students have tended to score in the 80th percentile or higher on academic assessments. Similarly, Rudner (1999) analyzed a large sample of over 20,000 homeschooled children and found that they achieved between the 70th and 80th percentiles when compared to national norms. Even though these early descriptive studies produced consistent patterns, they relied on self-reported test scores from convenience samples, which has drawn much criticism (Kunzman & Gaither, 2020; McCracken, 2014).

Since 2000, few quantitative analyses using statistical controls have been done. Table 1 presents this limited evidence on the academic performance of homeschooled students. Belfield (2004) arguably provides the most compelling analysis because of his study's large sample size of 6,000 homeschool students and its comprehensive set of individual and contextual control variables. His results show that when compared to public school students, homeschooled students record higher SAT scores overall and in math and reading. By contrast, Quaqish (2007) found that homeschooled students scored about two test questions below public school students on the ACT mathematics section although this study relied on a smaller sample (i.e., $n = 2,954$ with 1,477 homeschooled students) and fewer statistical controls than Belfield (2004)'s study did. By drawing on several waves of the National Survey of Drug Use and Health, more than 1,000 homeschooled adolescents were two to three times more likely to report being behind grade level than public school peers reported (Green-Hennessy, 2014). While this study uses statistical controls, it is difficult to know how accurate such self-assessments of grade-level academic proficiency are despite this study having a large sample of

Table 1. Quantitative studies of homeschooling and student achievement.

Authors	Study Design and Measures	Participants	Results
Belfield (2004)	Regression analysis of SAT scores with individual-level controls for parent education, gender, grade level, disability status; ethnicity, ELL status, citizenship, and religion. State, county, and district level controls included for funding, fees, poverty rates, and regulation.	Sample was 330,099 students (including 6,000 homeschooled students) across 24 US States in 2001	Compared to public school students, homeschooled students showed higher SAT scores overall and in math (528 compared to 513) and verbal (527 compared to 508) sections
Green-Hennessy (2014)	Logistic regression analysis of adolescents' self-reported grade level on the National Survey Drug Use and Health. Controls were included for race/ethnicity, income, religious ties, age, sex, and family structure.	National sample was 165,488 students ages 12-17 (including 1,094 homeschooled students) from 2002 to 2011	Compared to public school students, homeschooled students were two or three times more likely to report being behind grade level.
Quaqish (2007)	Comparison of ACT math scores with controls for grade level, gender, ethnicity, and SES.	National sample was 2,954 (including 1,477 homeschooled students) in 2003	Non-homeschooled students performed better than homeschooled students by about two items in math on the ACT.

homeschooled adolescents. Homeschooled children may not have a strong reference point from which they can self-assess their own grade levels.

The overall quantitative literature on academic outcomes is also derived from cross-sectional data sources that capture a single point in time. Longitudinal work is altogether lacking. Moreover, this research does not account for different forms of homeschooling or even the number of years an individual child is homeschooled. When evaluating a measure like ACT/SAT scores, the effect of homeschooling is conceivably more significant for students who were homeschooled for most of their K-12 education than for students who did so for only a few years or less.

Social development, health, and welfare

Positive social development is considered a basic psychological need (Ryan, Deci, Vansteenkiste, & Soenens, 2021). For homeschooled children, social experiences may differ from those who attend brick-and-mortar schools (Dwyer & Peters, 2019). Critics worry that this difference does not offer social opportunities that cultivate proper child development (Merry & Karsten, 2010). One prevailing argument is that homeschooling is a socially isolating experience with some children being neglected or abused (Lebeda, 2007). As a counter to these critiques, homeschool advocates assert that home education provides a way to foster positive socialization in children by strengthening familial bonds among parents and siblings (Merry & Howell, 2009) while

protecting children from harmful social influences that could undermine healthy social development (Dills & Elliot, 2019).

A small body of descriptive research demonstrates either positive or no difference in social skills and development between homeschooled and public-school students (Hamlin & Cheng, 2022; Medlin, 2013). This descriptive work is characterized by numerous methodological flaws, including statistical analyses using very small samples of 30 or less (Chatham-Carpenter, 1994), unreported sample sizes (Saunders, 2009), or surveys performed at home-school conventions or through homeschool advocacy groups (McCulloch et al., 2006). Importantly, many studies are derived from self-reports of social activities from parents or students who are homeschooling at the time of data collection (Hamlin, 2019).

Table 2 highlights quantitative studies using statistical controls that explore the social development, health, and welfare of homeschooled students. Among these studies, Green-Hennessy (2014) draws on a sample with over 1,000 homeschool students and finds that religious homeschooled adolescents are less likely to feel socially isolated than religious adolescents attending brick-and-mortar schools. In the area of child welfare, Dills (2022) used two-way fixed effects to evaluate aggregate changes in child safety after state legislation permitting homeschooling was adopted. Her national analysis showed no difference in reports of child victimization and safety but did indicate a slight increase in child homicide rates after the passage of state homeschool legislation. This study provides valuable evidence on an intensely debated topic that poses significant methodological challenges for researchers. One notable limitation Dill's (2022) work is that after homeschool legislation is adopted, child abuse and neglect may be more difficult to identify administratively because authorities could be less likely to detect cases of abuse and neglect when families decide to homeschool their children.

In a well performed study, Ray and Shakeel (2023) used an independent survey company to generate a national sample of adults, including 231 formerly homeschooled adults. By using a wide range of socio-demographic controls in their analysis, these authors found no difference in self-reported childhood sexual abuse, physical abuse, emotional abuse, neglect, abandonment, and family support between formerly homeschooled adults and their peers. Even though the small sample of formerly homeschooled adults does not allow for generalizing beyond the sample represented in this one study, the analysis of formerly homeschooled adults is likely to be more valid than self-reports from homeschooling parents or children at the time when they are homeschooling. As adults reflect on their home education experiences, they are arguably more likely to offer accurate accounts than children and parents who are homeschooling at the time of data collection. Two other studies based on national samples found that homeschooled

Table 2. Quantitative studies of social development, health, and welfare.

Authors	Study Design and Measures	Participants	Results
Dills (2022)	Two-way fixed effects estimating child safety (e.g. suicides, homicides, victimization) after the introduction of legislation permitting homeschooling. Data were from the National Child Abuse and Neglect Data System	Sample ranged from 494 to 842 incidents from 1979-1989.	No difference in child safety before and after legislation permitting homeschooling although a slight increase observed for child homicide rates.
Green-Hennessy (2014)	Logistic regression analysis of adolescents' self-reported grade level on the National Survey Drug Use and Health with controls for race/ethnicity, income, religious ties, age, sex, and family structure.	National sample was 165,488 students ages 12-17 (including 1,094 homeschooled students) from 2002-2011	More-religious homeschoolers were 60% less likely to feel isolated compared to more religious peers in brick-and-mortar schools.
Ray and Shakeel (2023)	Regression analysis controlling for gender, race/ethnicity, education level, parent education level, religiosity, household size as a child, household income, and age.	Sample was 1,253 adults (including 231 formerly homeschooled adults)	Compared to former public school students, formerly homeschooled adults indicated no difference in childhood sexual abuse, physical abuse, emotional abuse, neglect, abandonment, and family support
Thompson & Jang (2016)	Regression analyses investigating two waves of the National Study of Youth and Religion	National sample was 2,038 (including 50 homeschooled students)	Homeschooled youth were less likely to report drinking alcohol than non-homeschooled youth. which was mediated by social bonding, social learning, and religiosity.
Vaughn et al. (2015)	Logistic regression analysis of the National Survey on Drug Use and Health (NSDUH) with controls for age, gender, race/ethnicity, and household income	National sample was 200,824 adolescents (including 1,321 homeschooled adolescents)	Homeschooled adolescents are significantly less likely than non-homeschooled adolescents to report the use of alcohol, tobacco, marijuana, ecstasy, and hallucinogens

youth are also less likely self-report using drugs and alcohol than their public school peers (Thompson & Jang, 2016; Vaughn et al., 2015). On the whole, previous studies offer some useful insights, but this literature generally suffers from a familiar set of consequential limitations, such as small homeschool samples, cross-sectional data sources, and no distinction of homeschooled students according to the number of years that they are homeschooled.

Post-secondary and life preparation

To explore the life outcomes of formerly homeschooled individuals, researchers have analyzed post-secondary success, employment rates, income levels, family formation, and community engagement (Neven Van Pelt et al., 2009).

At the post-secondary level, many studies have relied on small convenience samples from a single university to explore the post-secondary outcomes of university students who were homeschooled (Kunzman & Gaither, 2020). These descriptive comparisons tend to find that formerly homeschooled college students are as socially integrated as other students (Sorey & Duggan, 2008, Saunders, 2009; Snyder, 2010; White et al., 2007). These modest descriptive comparisons of college grade point averages also offer evidence that formerly homeschooled students are performing academically as well or better than their peers at universities (Cogan, 2010; Sutton & Galloway, 2000; Yu et al., 2016).

Table 3 presents quantitative studies using statistical controls to explore post-secondary and life outcomes. In a national sample of college students, formerly homeschooled students exhibited higher college calculus grades than their peers after controlling for gender, race/ethnicity, ELL status, parent education, home support, and SAT/ACT scores (Wilkins et al., 2015). For some observers, the result of this study may be somewhat surprising since one longstanding critique of homeschool education is that parents will struggle to educate their children in high level mathematics courses. Even though this

Table 3. Quantitative studies on post-secondary and life outcomes.

Authors	Study Design and Measures	Participants	Results
Hamlin and Cheng (2022)	Logistic regression analysis of the Understanding America Survey with controls for age, race, gender, and years homeschooled	Sample of 95 formerly homeschooled adults	For college attendance, household income, marital status, and subjective wellbeing, no differences observed among adults who had short-term (1–2 years), long-term (10–12 years) and substantial (3–9 years) homeschooling experiences.
Hill and Den Dulk (2013)	Logistic regression analysis of three waves of data from the National Study of Youth and Religion (NSYR) with controls age, race/ethnicity, gender, religion, religiosity, parent income, education, and parent political orientation	National sample of 1,717 respondents (including 2% homeschooled adolescents) in survey waves from 2002 to 2008	Homeschooled students are less likely to continue volunteering as they move from adolescence into adulthood
Uecker and Hill (2014)	Logistic regression analysis of Cardus Education Study Graduate Survey with controls for age, religion, parent religion, church attendance, religious discussion at home, educational attainment, and beliefs about gender roles	National sample was 16,399 (including 82 formerly homeschooled adults) adults ages 24–39	Compared to adults who graduated from public schools, formerly homeschooled adults report differences in age of marriage and birth of first child.
Wilkins et al. (2015)	Regression analysis of the factors influencing college success in mathematics with controls for gender, race/ethnicity, ELL status, parent education, home support, and SAT/ACT score	National stratified random sample was 5,701 students (including 190 homeschooled students) in 2007	Compared to public school students, homeschooled students earned similar SAT math scores but recorded higher college calculus grades

study is among the most credible analyses of post-secondary outcomes, it uses a relatively small sample of 190 formerly homeschooled students. To assess other types of life outcomes, Uecker and Hill (2014) analyzed data from the Cardus Education Survey, reporting that 82 formerly homeschooled adults did not differ statistically from their public school peers on marriage and family formation in adulthood. Hamlin and Cheng (2022) performed one of the only within-group analyses based on the number of years a person was homeschooled by using the Understanding America Survey. After introducing statistical controls, the authors reported no within-group differences in college attendance, household income, marital status, and subjective wellbeing among 95 adults who were formerly homeschooled. Considering the small home-school samples in both Hamlin and Cheng (2022) and Uecker and Hill (2014)'s study, these findings cannot be considered generalizable.

There are other studies that present a negative portrait in adulthood for those who were homeschooled. For example, Hill and Den Dulk (2013) find that young adults who were formerly homeschooled were less likely to continue volunteering than their peers were. Furthermore, the Canadian-based think-tank Cardus has undertaken a series of surveys that draw from random samples and contain small samples of formerly homeschooled adults in the United States and Canada (Pennings et al., 2012; Sikkink & Skiles, 2018). The published reports covering the Cardus surveys tend to lack sufficient details needed to appraise the quality of the work, offering only vague descriptions of the research methods used. Standard data tables are not provided in the Cardus reports. Nevertheless, it is worth noting that results from these studies find that formerly homeschooled individuals are less likely to complete a 4-year degree by the age of 24 than adults who attended public schools. Other results from Cardus's surveys show higher self-reported divorce rates and lower self-direction among formerly homeschooled adults (Casagrande, Pennings, & Sikkink, 2019). As is the case with other work, these cross-sectional analyses do not distinguish respondents based different modes of homeschooling and homeschool samples are small for statistical procedures with control variables.

Charting a new agenda for homeschool research

Existing research does not permit firm conclusions about the outcomes of homeschooling. Even the strongest available quantitative evidence is limited by small homeschool samples, uniform operationalizing of homeschool practice, and cross-sectional data sources. No study of home education uses a research design that generates causal estimates. Nonetheless, because homeschooling is growing and evolving, a new generation of research is necessary to produce firmer claims about the practice. This next generation of research needs to not only address the limitations of previous studies but also be

responsive to the nature of contemporary homeschool arrangements. While the task is challenging, there are strategies that researchers might undertake to generate credible evidence.

Operationalizing homeschooling

A critical gap in most analyses is the uniform operationalization of homeschooling. Most studies of homeschooling are cross-sectional, capturing individuals who homeschool at the time of data collection, but homeschooling is fluid with most homeschooled children having a mix of both homeschool and brick-and-mortar school experiences during their K-12 education. Such movement in and out of school sectors makes it difficult to tie homeschool practice to outcomes, particularly when drawing on cross-sectional datasets. With some exceptions (Hamlin & Cheng, 2022; Neuman & Guterman, 2017), most research does not distinguish homeschooled students based on the number of years that they were homeschooled. For the next generation of homeschool research, researchers can begin to attend to this methodological issue in their statistical models by accounting for the number of years an individual is homeschooled. There is likely to be a large difference in the school experiences of a person who is homeschooled for one or two years and those who do so for their entire K-12 education. Such differences may be associated with heterogeneity in academic, social, and life outcomes and could provide stronger evidence on the potential effects of homeschooling as a model of education.

In future work, researchers should also test for heterogeneity in outcomes based on the model of homeschooling that is used. Conventional homeschooling in which education occurs entirely at home with the parent is waning while home education supplemented by online education, part-time attendance at brick-and-mortar schools, private tutors, and cooperative instructors is rapidly expanding (Cheng & Hamlin, 2023). The prevalence of these contemporary homeschooling arrangements means that they have are prominent features of homeschool practice today, but most empirical research continues to treat homeschooled practices uniformly without delineating among these different forms of homeschooling. As a result, heterogeneous patterns within the homeschool population could be concealed (Hamlin & Cheng, 2022; Kunzman & Gaither, 2020). Cheng and Hamlin (2023) offer an empirically grounded framework for testing variation across different forms of homeschooling. They used national data to present a typology of homeschool arrangements that break down into conventional homeschool practice; homeschooling supplemented by part-time attendance at a brick-and-mortar school; homeschooling supplemented with private tutors or cooperatives; and homeschooling supplemented with online coursework. Researchers could use such a typology in statistical analyses to understand variation in

outcomes based on different forms of home education. In cases when only small samples are available, researchers could, at a minimum, break home-schooling into two separate categories: conventional homeschooling without educational supplements and homeschooling with educational supplements. Since it is unlikely that researchers will develop causal research designs that can rule out selection bias issues, more exploration of within-group variation among homeschooled students can yield key descriptive information on the conditions under which homeschooled students perform well.

Data sources and statistical analyses

To perform analyses of homeschooling that account for years homeschooled or different forms of home education, large samples of homeschooled students will be needed. Too many studies rely on small analytic samples that cannot differentiate homeschooled students without becoming statistically underpowered (Kunzman & Gaither, 2020). In future work, researchers need to invest in collecting data from larger samples of homeschooled students. The US Department of Education's National Household Education Survey provides decent national samples of homeschooling households, but responses to this survey consist of parent self-reports that have limited value in evaluating the outcomes of home education (Hamlin, 2019). Other national datasets using student self-reports offer only cross-sectional data.

The next generation of homeschool studies should move beyond cross-sectional data. To do so, there may be unleveraged opportunities in state datasets. For example, states have various regulatory frameworks for homeschooling (Hamlin & Peterson, 2022). Some do not require parents to notify authorities that they are homeschooling while others mandate homeschooled students to take state assessments. States with testing mandates can be a source of longitudinal homeschool samples and may provide a useful way of comparing the academic performance of homeschooled students to their peers. In addition, state data can be examined longitudinally so that researchers can perform within-person fixed effects analyses that compare the annual academic growth of the same students when they are homeschooled and when they are attending brick-and-mortar schools.

When assessing social opportunities, health, and welfare of homeschooled children, future work should also analyze data sources other than parent and student self-reports from those who are currently homeschooling. One strategy is to collect data from formerly homeschooled adults. Ray and Shakeel (2023) provide some guidance in this respect. They compared formerly homeschooled adults to non-homeschooled adults, asking them to reflect on their childhood experiences of abuse and neglect. While this retrospective approach does not eliminate social desirability or selection bias, it offers a reasonable way of shedding light on outcomes, such as socialization and child welfare, that have

been long debated and difficult to collect data on at the time a child is home-schooled. Adults' reflections on home education potentially offer more accurate accounts than those of presently homeschooling children and parents. Surveys of young adults who were formerly homeschooled can also be used to investigate contemporary homeschool arrangements. For large scale data analysis, the National Student Clearinghouse offers a source of data. It collects data on over 3,600 postsecondary institutions and holds nearly 100 million student records. This data can be used to assess the postsecondary outcomes of formerly homeschooled students by investigating student majors, persistence, and graduation rates.

Researchers may be able to compare homeschooled students' social competencies, development, and other "soft skills" through blind independent observers. More than three decades ago, Shyers (1992) used blind observers to compare homeschooled and non-homeschooled children on social skills and peer interactions. This work using blind observers could provide more credible assessments of non-tested outcomes than self-reports do, but very little of this type of work has been done since Shyer's study over three decades ago.

Outcomes

Examining homeschooled students' state assessment scores, ACT/SAT scores, grade point averages, and other measures of academic performance is necessary. However, a considerable body of research demonstrates that many homeschool families have non-academic priorities in mind when they choose to homeschool their children (Cheng & Hamlin, 2023). New scholarship on homeschooling should assess outcomes that homeschool families themselves value. Across subgroups, families' rationales for homeschooling can be used to determine important outcomes that have been overlooked. For example, families who homeschool to serve a child with disability and those who do so because a child is academically gifted likely may need different evaluative outcomes when assessing the effects of home education. The Cardus Education Survey has attempted to assess non-academic outcomes that are thought to be underlying decisions to homeschool, including closeness with family, religious education, and child wellbeing (Casagrande et al., 2019). The Cardus surveys remain hampered by very small homeschool samples and a lack of differentiation among homeschool respondents (e.g., years homeschooled or model of homeschooling). Stronger conclusions could be made about non-academic outcomes if these issues were addressed.

Conclusion

It is uncertain whether the growth of homeschooling experienced during the pandemic will persist over the long run. If recent unofficial estimates are reliable,

homeschooling is becoming a major force operating within American K-12 education. While it is unlikely that social scientists will be able to design studies that offer causal evidence on whether homeschooling is more effective than other forms of education, there are certainly opportunities to produce more rigorous work. Because the precise counterfactual outcomes for homeschooled students will likely remain unknown without causal studies, methodological questions about the outcomes of homeschooling will persist and debates about the practice will endure. Nevertheless, researchers can advance these discussions by developing a more credible evidence base. If evidence suggests that homeschooled students are worse off than their peers, such a finding could be cause for concern given the expansion of home education. On the other hand, if homeschooled students are faring no worse (or better) than their public-school peers in their academic, social, and life outcomes, this finding could be the catalyst for opening new discussions about homeschool policy and practice.

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