

ARTICLE

Homeschooling: What do we know and what do we need to learn?

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Abstract

In this article, we identify approaches for understanding more thoroughly the academic and social experiences of homeschooled students. The growth of the homeschooling movement in the United States, questions about the need for additional regulation, and the importance of high-quality education for children motivate this scholarly effort. We begin by defining homeschooling and outlining why it is a topic worthy of study. Next, we describe who is homeschooled, motivations for homeschooling, and ways parents engage in homeschooling. Preliminary evidence suggests that homeschoolers perform equal to or better than their conventionally schooled peers on measures of achievement and socioemotional functioning, but methodological limitations, especially selection effects, make it premature to draw definitive conclusions. Throughout the article, we offer suggestions for advancing knowledge on homeschooling.

KEYWORDS

academic achievement, homeschooling, social-emotional outcomes

Homeschooling became increasingly popular during COVID-19, but even before the pandemic, approximately 2 million children were homeschooled in the United States (Ray, 2020). The growth of homeschooling and controversial calls to ban it provide an opportunity to consider what we know, and what we do not know, about this form of education (Bartholet, 2019). In this review, we summarize data on demographic characteristics of homeschooling families, motivations for homeschooling, and homeschoolers' academic and socioemotional functioning. Throughout our discussion, we identify ways to advance the study of homeschooling. We focus on data from the United States given the state of the literature and variability in social and academic expectations across societies. Readers interested in the smaller international literature should consult Kunzman and Gaither's (2020) review.

WHAT IS HOMESCHOOLING?

Laypeople and scholars often struggle to define homeschooling. We define it as parent-directed education that largely takes place in the home. Parents who homeschool are responsible for their child's education, but they may elicit others' assistance to help teach their child; consequently, our definition affirms that homeschoolers can take part in learning activities outside the home. Students who take some in-person or online classes (e.g., *flexischoolers*) could be considered homeschoolers if their overall education is directed by their parents (Schafer & Khan, 2017).

Most researchers agree that homeschooling is not simply school at home. Therefore, children who participate in online school (e.g., due to COVID-19 or for similar reasons) are not considered homeschoolers because their education is *directed* by a school. Similarly, students who

temporarily engage in school at home due to illness are not considered homeschoolers if they remain enrolled in a conventional school, and we do not consider students in hybrid homeschools as homeschoolers because their education is directed by a school (Wearne, 2019).

THE IMPORTANCE OF STUDYING HOMESCHOOLING

Studying homeschooling is important for several reasons. First, homeschooling is increasingly popular. Prior to COVID-19, approximately 2 million children in the United States (3% of students in kindergarten to 12th grade) were homeschooled. The number of homeschoolers increased significantly due to COVID-19 and it is anticipated that much of this growth will remain (Farris, 2020; Ray, 2020). Second, developing a fuller understanding of this type of education is warranted because of the potential benefits and costs to homeschoolers and society. Although current research suggests that most homeschooled children perform well in a variety of areas compared to conventionally schooled children (see our subsequent discussion on this topic, including the limits of the literature), there could be severe costs to children and society if the process goes poorly. Third, learning more about homeschooling is wise given interest in increasing its regulation (Bartholet, 2019). In this article, we offer guidance on how to study homeschooling in hopes of generating high-quality data that can advance developmental science and inform policy.

WHO IS INVOLVED IN HOMESCHOOLING?

According to national surveys, approximately 52% of homeschooled children in the United States are female (Wang et al., 2019). The percentage of children who are homeschooled is relatively similar across kindergarten (3.5%), grades 1–3 (2.4%), 4–5 (3.4%), 6–8 (3.3%), and 9–12 (3.8%; Wang et al., 2019). Some 79% of homeschooling families live above the poverty threshold, 25% have two parents in the labor force, 80% reside with two parents, and 22% live in a rural area (Cui & Hanson, 2019; Wang et al., 2019). In addition, most parents and guardians of children who are homeschooled have either completed some college, received a Bachelor degree, or attended graduate or professional school (~70%; Wang et al., 2019). Mothers (78%) are usually directly responsible for homeschooling (Cui & Hanson, 2019).

Although most homeschoolers are non-Hispanic White (59%), homeschooled families are increasingly ethnically and racially diverse (Wang et al., 2019). Approximately 2% of Black students are homeschooled, which represents a doubling from 1999 to 2016. Data

from qualitative studies of Black families suggest the presence of push and pull factors as motivators for homeschooling (Fields-Smith, 2017; Wang et al., 2019): Experiences of racial discrimination and biased teaching practices in schools are factors that push Black families out of the school setting, whereas the ability to teach about families' cultural background are factors that pull Black households toward homeschooling (Fields-Smith, 2017). Many Black families enjoy homeschooling, but they also face unique challenges, such as finding culturally relevant materials, identifying with overwhelmingly White homeschooling support groups, and dealing with the lack of same-race homeschooled peers (Mazama & Musumunu, 2015). We know little about homeschool experiences in other (non-Black) racial or ethnic groups. Focusing on Hispanic families seems relevant given that 26% of homeschoolers are Hispanic (Cui & Hanson, 2019).

WHY DO PARENTS HOMESCHOOL?

National data indicate that the six most important reasons for homeschooling in the United States are concern about the school environment (34%), dissatisfaction with school instruction (17%), religious motivations (16%), having a special-needs child (not including physical or mental health problems; 6%), a desire for a nontraditional approach (6%), and having a child with physical or mental health problems (6%; Wang et al., 2019). Although religiously related motivations remain important, their prominence has declined in recent years. A lack of access to high-quality schools increases the likelihood of homeschooling, as does knowing other homeschooling families (Murphy et al., 2017).

Despite studies on why families homeschool, key gaps remain. First, we know little about whether children's perspectives are incorporated into the decision-making process. We hypothesize that parents increasingly value children's perspective as their children mature, but we know of no relevant data to support this prediction. Second, we need more research on whether motivations change as a function of children's age and developmental experiences. Third, we need to understand why approximately 40% of students discontinue homeschooling after the first year and subsequent year-to-year continuation rates range from 73% to 94% (Isenberg, 2007). Fourth, we need to examine longitudinal relations between motivations for homeschooling and children's educational and social experiences, as well as children's performance on measures related to key social and academic outcomes. Researchers should also consider the likelihood that parents who choose to homeschool may be motivated differently than parents who send their children to conventional schools.

HOW DO PARENTS HOMESCHOOL THEIR CHILDREN?

We know little about how homeschooling parents teach their children. A major reason for the lack of data is that many homeschooling families are hesitant to allow home-based observations. This is slowly beginning to change now that homeschooling is legal in all U.S. states (as of 1996), but many homeschooling families remain cautious about participating in research because of concerns about oversight or restrictions.

What researchers do know suggests variability in the amount of structure provided by parents (Wang et al., 2019). At one end of the continuum, some parents are low in structure and embrace *unschooling*, which has been described as parents “who primarily or entirely let children learn about whatever they are interested in, and use little or no formal adult-chosen curricula” (McDonald, 2019, p. 29). Parents who embrace unschooling do not rely on prepackaged learning materials to guide their children’s education. Rather, they rely on the child to direct what topics are covered and the depth of learning. Sometimes this involves formal learning materials, but it can also involve less structured approaches.

On the other end of the continuum, approximately 77% of parents offer a far more structured approach and generally follow a formal curriculum (McDonald, 2019; Neuman & Guterman, 2017). The number of parents who use one of the many available formal curricula is similar for kindergarten to second graders (81%) and high schoolers (75%; Cui & Hanson, 2019). Most states mandate coverage of certain subjects, but they do not require the use of specific curricula, and the programs parents use are quite varied (Home School Legal Defense Association, 2020a). Some parents buy a set of materials from one distributor that provides the books, manuals, and assignments for all subjects across an entire school year. Other parents rely on several distributors for a more customized approach. Often these materials are available online or can be used on electronic devices. Historically, many materials explicitly integrated a Christian worldview, but materials now available are more diverse.

Many homeschoolers are involved in a range of educational experiences. National studies indicate that 60% of homeschool households formally provide education in music, arts, literature, and foreign language (Hamlin, 2019); 86% of homeschoolers participate in sports, active games, or exercise; and approximately 3% to 4% of homeschoolers in grades 9–12 take some courses in college (Cui & Hanson, 2019). Recent data suggest that 31% of homeschoolers participate in co-ops (i.e., sharing teaching with other homeschooling parents or experts in a certain field; Cui & Hanson, 2019). Co-ops help families by allowing parents with expertise in a topic to teach certain subjects; they also provide opportunities for interacting with other adults and peers. Many homeschooling parents supplement their teaching with

e-learning materials. For example, Teaching Textbooks offers mathematics subjects ranging from basic math to precalculus via an app that works on phones, computers, and tablets (Teaching Textbooks, 2021). Similar programs are available for other topics, as are asynchronous online learning materials covering multiple subjects. Many homeschooling parents educate themselves about teaching practices by participating in mentoring programs, local support groups, in-person conferences, and webinars (Tilhou, 2019).

Researchers should examine whether the methods and materials parents use to homeschool are related to social and academic outcomes. Two studies yielded mixed results on this question: In one, using a full-service curriculum (high structure) was unrelated to academic outcomes in 5- to 18-year-olds (Ray, 2010). In the other, unschooling (low structure) was associated with low achievement in 5- to 10-year-olds (Martin-Chang et al., 2011). More work is needed on this topic given that the second study was very small and that both studies varied in the age range considered. Efforts to understand the implications of instructional practices also need to consider variability in such practices that take place inside (e.g., level of structure, use of Internet) and outside (e.g., co-ops, the library, museum, camps) the home (Hamlin, 2019).

Researchers should also examine whether homeschooling experiences vary as a function of children’s age. For example, parents may increasingly rely on external resources (e.g., e-learning programs, tutoring) as their children age and engage in more complex material. Activities such as being part of a co-op may serve a different function for younger versus older children. Parents of younger children may participate in co-ops to get support and socialization experiences for their children, whereas older children may use co-ops to gain experience working in groups and learn about topics from other parents with expertise that differs from their parents.

HOMESCHOOLERS’ ACADEMIC AND SOCIAL FUNCTIONING

Academic functioning

One reason parents choose to homeschool is that they believe they can provide a learning environment superior to conventional schools. Numerous studies compare homeschoolers’ academic achievement to that of their conventionally schooled peers (Kunzman & Gaither, 2020; Murphy, 2014; Ray, 2017). Typically, the researchers have recruited a convenience sample of homeschoolers and compared their performance on a standardized test to the scores of conventionally schooled students. In a recent review, across the elementary to high school years, homeschoolers scored

as well as or higher than (i.e., effect sizes ranged from small to large) conventionally schooled students on standardized measures of achievement (and other related measures, but see subsequent discussion of selection biases; Ray, 2017). Two studies suggest that the differences between homeschoolers and conventionally schooled students might not be as large in math as they are in language arts (Frost & Morris, 1988; Ray & Wartes, 1991); more data are needed to evaluate this issue. A cautious reading of the literature suggests that it is either too early to conclude that homeschoolers outperform their peers or that few to no differences are apparent.

Social functioning

Researchers have examined whether homeschooling is associated with children's socioemotional functioning by comparing homeschooled with conventionally schooled students on measures of functioning (e.g., problem behaviors, depression, social competence). Interpretations of the literature range from optimistic (e.g., "a large majority of studies show clearly positive outcomes for the homeschooled compared to those in conventional schools," Ray, 2017, p. 604) to more tempered (e.g., "homeschoolers do not seem to suffer in comparison with their conventionally schooled counterparts across a range of social skills," Kunzman & Gaither, 2020, p. 277). Efforts to understand homeschoolers' socioemotional functioning would benefit by considering the frequency and nature of peer interactions given that homeschoolers experience a range of social interactions with peers and adults (e.g., via sports, scouts, co-ops; Cui & Hanson, 2019; Medlin, 2013).

Methodological innovations

Studies that are more methodologically rigorous are needed before definitive conclusions about homeschoolers' academic and social functioning can be reached. For example, researchers need to consistently control for confounding variables and selection effects. Differences between homeschoolers and conventionally schooled students may stem from variables such as socioeconomic status (SES), parental involvement, and parents' and children's motivations and goals. Whereas some studies control for relevant covariates (e.g., children's IQ, age, sex, SES, motivations, approach to homeschooling, time spent homeschooling, use of co-ops), others do not. We encourage researchers to consider propensity scores to better equate groups and minimize selection bias (Rosenbaum, 2002; West & Thoemmes, 2010). But this approach will be helpful only if participants are matched on many variables; if key variables are omitted, the resulting conclusions will be biased.

Sampling also needs to be improved. Virtually all studies on homeschooling feature nonrepresentative convenience samples. If only the highest-achieving homeschoolers participate in research and their data are compared to a fuller range of conventionally schooled children, conclusions will be biased. Researchers can reduce this type of bias by recruiting homeschoolers across the range of academic and social functioning. The use of nationally representative samples could be helpful as well. Attending to this issue is particularly important given the growing diversity of the homeschool population.

The next generation of studies needs to move beyond parent-reported data by incorporating data from other adults (e.g., Sunday school teachers, coaches) and, depending on their age, homeschooled children and their peers. Using standardized achievement tests is another useful tool, although researchers must be careful when interpreting findings because homeschoolers may not cover topics in the same time frame as conventionally schooled children.

Homeschooling also needs to be measured more comprehensively. At a basic level, researchers need to consider complexity in the timing and duration of homeschooling. Many studies rely on simplistic coding schemes (e.g., 0 = homeschooling, 1 = conventionally schooled), which is problematic for at least two reasons. First, a simple coding scheme ignores when homeschooling begins (e.g., at age 5, 10, or 15). Second, simple dichotomies ignore evidence that many families homeschool for a short time (Hamlin & Cheng, 2021; Isenberg, 2007). The developmental implications of homeschooling can be understood more completely when researchers explicitly consider when homeschooling starts and how long it lasts.

Potential antecedents of homeschoolers' functioning

Researchers should also focus on identifying predictors of homeschoolers' academic and social functioning. To our knowledge, no peer-reviewed studies have been done on this topic. Researchers can conduct within-group longitudinal studies designed to understand homeschoolers' developmental trajectories. Investigators should consider assessing constructs from multiple domains, including the home environment, parents' and children's characteristics, and the community.

In the home environment, researchers should consider income, the quality of the parent-child relationship, and marital conflict. If parents are harsh, low in warmth, or high in marital conflict, the academic and socioemotional functioning of homeschooled children may be reduced, in part because children's sense of security, expectations for help, and motivation to please their parents might be low (Davies & Cummings, 1994;

Hughes, 2012; Murphy, 2012). Researchers may also want to examine the role of household chaos since chaos interferes with attention, enjoying school, and feelings of security (Berry et al., 2016).

Researchers should also consider homeschooled parents' characteristics as predictors of children's functioning. Parents with a high level of education, especially those with an education-related degree, might be proficient at providing numerous learning experiences and tailoring coursework to maximize their children's learning. This factor may be especially important as children age and interact with more complex material. Based on the broader parenting and education literature, we expect positive relations between homeschooling parents' self-regulation, openness, conscientiousness, social support, and self-efficacy and children's academic and socioemotional functioning (Eisenberg, 2020; Valiente et al., 2020; Wade, 2004). The reverse pattern is expected for parents' anger, depression, and stress. If parents are high in self-regulation, social support, and self-efficacy and low in anger, depression, and stress, they are likely to be flexible, responsive to their child's needs, and caring, while also ensuring that the child remains on task. These relations sometimes occur in conventionally schooled children (Valiente et al., 2020), but we do not know whether the findings generalize to homeschoolers.

The assets (e.g., IQ, self-regulation, social skills, positive emotion, genetic predisposition for learning) and hinderances (e.g., negative emotion, mental health challenges) children bring to the educational setting are also important to include when studying homeschooling. Based on work with conventionally schooled children, researchers should investigate whether homeschoolers' temperament (i.e., individual differences in self-regulation and emotion) is associated with their academic functioning (see Liew et al., 2019; Valiente et al., in press). Another question is whether homeschoolers' social skills and mental health relate to their academic functioning. Homeschoolers who have mental health challenges or low social skills might experience academic difficulties for reasons similar to conventionally schooled children (e.g., externalizing problems undercut relationships and on-task behavior; Eisenberg et al., 2010; Valiente et al., 2020). However, significant relations might not emerge because parents may be more forgiving of their child's difficult behaviors and have fewer classroom management responsibilities than conventional school teachers.

Families' geographic and social communities are also important to consider. Although all U.S. states have some requirements for homeschooling, they vary on key dimensions such as the need for parental qualifications and the use of state-mandated testing (Home School Legal Defense Association, 2020b). Researchers should consider whether homeschooling families are supported in their community. Some school districts make it fairly

easy for homeschoolers to participate in school sports teams, which might facilitate positive social experiences, while other districts hinder social experiences via restrictive policies.

Many constructs are relevant to homeschoolers' academic and social functioning. We outlined constructs in multiple domains, and theory should guide the selection of variables considered. Researchers should also consider transactional relations (e.g., instructional practices → children's achievement → instructional practices) and that some relations might vary based on children's characteristics.

CONCLUSIONS

In summary, the first generation of homeschooling studies paints a general portrait of who is being homeschooled, why parents choose to homeschool, how parents homeschool, and the social and academic experiences of homeschoolers. Supporters of homeschooling refer to studies showing that homeschoolers outperform their conventionally schooled peers, whereas critics point to methodological limitations and suggest that homeschooling places children at risk for educational challenges (Murphy, 2012; National Education Association, 2020; Ray, 2017). From our perspective, it is premature to offer firm conclusions, but we do not find systematic evidence that homeschoolers typically experience problematic academic or socioemotional outcomes. We encourage researchers to conduct the second generation of methodologically rigorous studies. Until this occurs, it will be impossible to adequately understand homeschooling experiences and offer data-driven policy recommendations.

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