THE INS AND OUTS OF HOMESCHOOLING
The Determinants of Parental Motivations and Student Achievement

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This research investigates two major aspects of homeschooling. Factors determining parental motivations to homeschool and the determinants of the student achievement of home-educated children are identified. Original survey data from an organized group of homeschoolers is analyzed. Regression models are employed to predict parents' motivations and their students' standardized test achievement. Four sets of homeschooling motivations are identified. Academic and pedagogical concerns are most important, and it appears that the religious base of the movement is subsiding. Several major demographic variables have no impact upon parental motivations, indicating that this is a diverse group. Parents' educational attainment and political identification are consistent predictors of their students' achievement. Race and class—the two major divides in public education—are not significant determinants of standardized test achievement, suggesting that homeschooling is efficacious. It is concluded that homeschoolers are a heterogeneous population with varying and overlapping motivations.

Keywords: *homeschooling; parental motivations; student achievement*

The home education of children has become an increasingly popular school choice in the United States. Although homeschoolers were once dismissed as fringe, today they are becoming recognized as more mainstream, given their diversity and numbers. Research on homeschooling has proliferated in the past decade or so, because of parents', educators', and policy makers' interest in this growing phenomenon. Yet homeschoolers are a difficult population to study and much of the existing research is limited.

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EDUCATION AND URBAN SOCIETY, Vol. 37 No. 3, May 2005 307-335
DOI: 10.1177/0013124504274190

In this article, two major aspects of homeschooling are explored. Factors determining the ins of homeschooling—parents' motivations—and the outs of homeschooling—student achievement—are identified through an analysis of survey data from a substantial sample of home educating parents. In the first analysis, four sets of parental motivations are identified. Multivariate models are employed to determine what underlies parents' motivations to homeschool their children. In the second analysis, student- and parent-level factors, including homeschooling motivations, are tested as predictors of student achievement.

This study makes several important contributions to the homeschooling literature given the research design. The sample size is large (n = 235), and the response rate is the highest of any known homeschooling sample (71%). Moreover, none of the previous quantitative research on parents' motivations to homeschool employs multivariate modeling. The specific determinants of these motivations have not yet been explored. Also, parents' motivations have not previously been tested as predictors of their students' achievement.

The findings from this study have important implications. They will contribute to our knowledge about why parents choose to homeschool their children and what determines the achievement scores of home-educated students. The article is concluded with a short discussion concerning the implications for homeschooling given the contemporary direction of public education in our increasingly urban society. In the next section the previous research on parental motivations for homeschooling and the student achievement of home-educated children is reviewed.

LITERATURE REVIEW

PARENTS' MOTIVATIONS

Although the roots of education in America can be traced to home and family initiatives, the homeschooling movement of the past 40 years has arisen as a reaction against the public educational system. Recent estimates report that well more than a million children are being homeschooled nationwide (Lines, 2000; Russo, 1999; Stevens, 2001). This is dramatic growth given that the number was estimated at only 300,000 in 1990 (Hammons, 2001). The increase reflects a growing dissatisfaction with formal education (Lyman, 1998) and a growing public acceptance of homeschooling (Lines, 2000).

The U.S. homeschooling movement originated during the 1960s and 1970s within the countercultural or libertarian political left (Lyman, 1998). Educational critics came to believe that the public system was unreformable and began to encourage parents to teach their children at home (Holt, 1964). Van Galen (1988, 1991) labels this original group as *pedagogues* to underscore their interest in improving the instructional process. In general, these homeschoolers stood against the bureaucratization and professionalization of public schools and sought personalization and decentralization under family control.

By the 1980s, another influential group began to argue for homeschooling from a Christian perspective. These religious sectarians, largely from the political right, are called *ideologues* by Van Galen (1988, 1991) to highlight their sense of crusading against the secular forces of modern society, seeking to impart religious values on their children (Moore & Moore, 1981). The religious right came to dominate homeschooling in the mid-1980s as the libertarian left group diminished (Grubb, 1998; Lyman, 1998). Despite Stevens's (2001) continuing usage of the dichotomy between pedagogues (whom he refers to as *inclusives* or *earth based*) and ideologues (referred to as *believers* or *heaven based*), studies of parental motivations indicate that homeschooling has become more mainstream and that there are a host of middle-grounders with varying rationales (Hammons, 2001; Reich, 2002; Russo, 1999).

Much research has been conducted in an effort to identify why parents decide to homeschool their children. The results from eleven different samples of homeschooling parents are described below.[1] This existing research tends to be qualitative in nature. Four of the studies are based on surveys with large samples ($n > 100$), but with the exception of Bielick, Chandler, and Broughman (2001), their response rates were very low.[2]

Pitman's (1987) research surrounds progressive homeschoolers in a New Age community. She interviewed 12 households in a rural community in the Northeast where a total of 16 children were being homeschooled. Most of these parents indicated that they homeschool in an effort to avoid the negative cultural influences of public schools. Many also viewed the quality of public education negatively. Some also cited the desire for a spiritual focus in their children's education.

Van Galen's (1988) research was based on interviews with 23 homeschooling parents from 16 families. Along with her broad categories of ideologues and pedagogues, she found that the actual decision to homeschool is often triggered by unique circumstances that vary from family to family.

Morgan and Rodriguez (1988) interviewed 40 homeschooling parents in south central New Mexico. All of the families were of a Protestant religious faith. Their respondents consistently reported that they homeschool because of their concern with the environment of the public schools. "More specifically, their children would report incidents or occurrences in the public school setting that was alien to their personal or religious beliefs" (Morgan & Rodriguez, 1988, p. 16-17).

Mayberry (1988, 1989) conducted a mass survey of Oregon homeschoolers that yielded 461 respondents (a 29% response rate). Four categories of homeschool parents with differing motivations were identified. The largest group was religiously motivated (65% of the respondents), a second group was motivated by the special academic needs of their children (22%), next in size were the pedagogues who sought homeschooling in an effort to provide a conducive learning environment (11%), and the smallest group (2% of the respondents) she called *New Agers*, individuals whose worldview was the determining factor.

Knowles's (1988, 1991) ethnographic investigation includes 12 families (23 parents) in urban Utah. In addition to the ideological and pedagogical motivations documented in earlier studies, he found two additional rationales among these parents that are rooted in childhood experiences. Dysfunctional family environments and negative experiences in public schools motivated many of these parents to homeschool their children.

In another study of Oregon homeschoolers, Bates (1991) interviewed 47 New Christian Right families. He found that these parents' reasons included religious convictions, a belief in family values, fear of negative peer influences,[3] and dissatisfaction with the secular climate of public education.

Marchant and MacDonald (1994) surveyed the Ohio mailing list of a homeschooling publisher. They achieved a 25% response rate (n = 120). Their univariate statistics indicated that 82% of respondents homeschooled because they believed it provided a better education for their children, 45% cited religious motivations, 35% indicated it gave them control over their children's environment, 31% said it made the family closer, and 28% chose homeschooling because it limited the interaction of their children with negative peer influences.

Marshall and Valle (1996) studied 19 families (44% response rate) who educate their children at home in rural Pennsylvania. Of the families, 13 referred to the problematic quality of life and learning within public schools as motivational. Also, 8 families explicitly cited religious beliefs as a compelling reason. Of the families, 7 were concerned with negative peer influence. Also, 5 families identified family cohesion as compelling. Finally, 3 of

the families interviewed chose homeschooling because of the prohibitive cost of private schooling.

Grubb (1998) conducted a study of Kentucky homeschoolers. She mailed surveys to the 400 members of the Kentucky Homeschooling Association, 69 were returned (a 17% response rate). Respondents were asked whether they agreed or disagreed that the following four reasons motivated them to homeschool their children: (a) because their child will achieve higher academic levels (98% agreed), (b) because they do not like the social influences of the peer groups in public schools (98% agreed), (c) because they do not like changes in Kentucky's public education (78% agreed), and (d) to include religious teachings (75% agreed).

Lange and Liu (1999) studied the homeschooling population of Minnesota. The return rate from their survey was 28% ($n = 198$). Parents were asked to respond to an open-ended question concerning their motivations for homeschooling. Five broad categories of motivations were identified. Of the respondents, 93% cited educational philosophy and quality reasons, 48% stated reasons surrounding the special needs of their children, 42% homeschool because of the climate of public schools, 40% cite family lifestyle and parenting philosophy reasons, and 40% choose this schooling option because of religious and ethical beliefs.

Finally, Bielick et al. (2001) report findings from the parent survey of the National Household Education Surveys Program, 1999. This nationally representative sample includes 245 parents of 275 homeschooled students. The response rate was 63%. Parents were asked to identify their reasons for homeschooling. These open-ended responses were coded into 16 categories. The four most frequently cited reasons were "Can give child better education at home" (48.9% of respondents), "Religious reasons" (38.4%), "Poor learning environment at school" (25.6%), and "Family reasons" (16.8% of respondents).

This previous research indicates that homeschoolers can no longer be easily divided into ideologues and pedagogues. These studies suggest that there are four broad categories of motivation (and considerable overlap). Religious values and academic and pedagogical concerns are certainly prevalent. However, general dissatisfaction with the public schools and family lifestyle reasons (including special needs) are also important motivations in and of themselves. These four sets of reasons have also been identified in casual observations of the movement (Jeub, 1994; Lyman, 1998).

All of these previous studies are notable given the difficulty of studying homeschoolers. This population is geographically dispersed and adequate sampling frames are lacking (Lines, 2000; Mayberry, Knowles, Ray, &

Marlow, 1995; Ray, 2000; Stevens, 2001). Moreover, as indicated by the low response rates, many homeschoolers hold alternative worldviews and are unwilling to participate in studies by unknown researchers. The previous research also provides a strong basis for future researchers because the four sets of motivations have been consistently identified.

The research to be reported here makes several important contributions to the homeschooling research literature given the quality of the data that will be analyzed. First, the analysis is multivariate in nature. Surprisingly, none of the previous quantitative research on parents' motivations to homeschool employed multivariate methods. The specific determinants of these motivations within this population have yet to be explored. Given the benefit of past research findings, respondents in this study were queried with 16 specific motivational items, permitting the use of more reliable indices as dependent variables. The response rate of the survey data employed here is higher than any other known homeschooling sample. Also, the sample size is larger than most—less than Mayberry's (1988, 1989) 461 but equivalent with Bielick et al.'s (2001) 245.

This study is also the first one to test for statistical relationships between parents' motivations to homeschool their children and their students' standardized test achievement. After parents' motivational patterns are explained (the ins of homeschooling), these variables will be employed as predictors of student achievement (the outs of homeschooling). The previous research on homeschooled students' achievement will be reviewed next.

STUDENT ACHIEVEMENT

A multitude of studies concerning the student achievement of home-educated children have been conducted. Ray (2000) provides the authoritative literature review on this large body of previous research.[4] He cites 25 studies indicating that overall, homeschooled students score above national averages. Only two studies demonstrated otherwise. One found no significant differences between homeschooled students and private school students. One found that first- and fourth-grade home-educated students scored below national averages in mathematics.

Ray's (2000) literature review also includes previous research on the determinants of student achievement among homeschooled students. This review indicates that these results are quite mixed. Five previous studies found that whether the home-educating parent is a certified teacher has no

affect on their student's achievement. Two studies did find a positive relationship when the mother was certified to teach. Parents' educational attainment was nonsignificant in three studies, although an additional three previous studies found it to be positively related to student achievement. Likewise, family income had no significant effects in three studies but did have positive effects in another two. Ray (2000) also indicates that the gender of the home educated student and the time spent in formal instruction have not been found to be significant determinants of student achievement.

In this same article, Ray (2000) also analyzes the determinants of homeschoolers' achievement with his own original data set. First, however, the other recent notable work in this area should be reviewed. In 1998, Rudner (1999) administered a demographic survey to the homeschooling parents who had paid to use the testing services of Bob Jones University, a fundamentalist Christian institution located in Greenville, South Carolina. A total of 39,607 homeschool students were contracted to take either the Iowa Tests of Basic Skills or the Tests of Achievement and Proficiency. The questionnaire was returned by 11,930 families with a total of 20,760 students (a 52% response rate).

Rudner's (1999) determinants of achievement analysis is bivariate (considering the effect of only one independent variable at a time) and employs grade equivalent scores as the dependent variable. Eight independent variables were tested; five were found to be significant determinants. Number of years of homeschooling was significant. Those students who had been home educated their entire academic lives outperformed those who had not. Money spent on educational materials was also relevant as students in families spending more performed better than those from families spending less. Family income and parents' educational attainment were also found to have significant positive effects. Last, students' weekly hours of television viewing had a negative relationship to their standardized test achievement. Enrollment in a full-service curriculum, student gender, and parent certification as a teacher were not significantly related with student achievement.

Ray (2000) targeted U.S. home-educating families as his population of study and drew a sample from the lists of various national and statewide organizations. He administered a mail survey to 5,995 homeschooling families and support groups in early 1996. The questionnaires were returned by 1,657 families with 5,200 children (a 29% response rate). Ray (2000) received standardized test results from the test publisher or the test administrator (who in most cases was the parent). Test scores were obtained for 38% (n = 1,952) of the children whose parents completed the survey.

Employing multiple regression methods, Ray (2000) tested the impact of 13 independent variables on three dependent variables: total reading, language, and math scores. Of the 39 tested relationships, 11 were significant. Of the 13 independent variables, 7 had no significant effect on reading, language, or math scores. These nonsignificant predictors include father certification as a teacher, mother certification as a teacher, family income, money spent on education, legally registered homeschooler status, time student spent in formal instruction, and age that student began homeschooling.

Only one variable was found to be a significant determinant of all three test scores. Father's educational attainment had consistent, positive effects on student achievement. Mother's education significantly determined language and math scores. Female homeschooled students had higher language and math scores than their male counterparts. Students who had been homeschooled for more years did better in reading and language than those who had been home educated for less time. Finally, those students who used libraries and those who used computers more often achieved higher reading scores.

Studying home-educated students' achievement is even more difficult than studying parental motivations. First, achievement researchers need the parental data too. This usually results in the merging of disparate data files and the loss of data (researchers often have parent data without matching child data and vice versa). Second, not all homeschooled students take standardized achievement tests. Some parents shun these instruments. Indeed, they may have been one of the reasons that they opted out of the public schools. Therefore, those students who take standardized achievement tests may not represent homeschoolers as a whole.

The recent achievement studies by Rudner (1999) and Ray (2000) are notable given their large sample sizes. However, Rudner's study has been criticized (Welner & Welner, 1999) as having a biased sample. Given that his sampling frame originated from a conservative, religious institution, it is unlikely that the diversity of the homeschooling movement is represented in his data. The response rate was also low. Ray's (2000) response rate was problematically low. Moreover, because he obtained student data from only 38% of the 29% of families that responded to the survey, the likelihood of bias increases. Although the sample underlying the research reported here also has limitations, the data and analysis make a unique contribution to this growing research literature.

DATA AND METHOD

THE SETTING: HOME CHARTER

As aforementioned, homeschoolers have been a difficult population to identify given a lack of adequate sampling frames and the refusal of many of these parents to participate in research studies. To compound these problems, a systematic analysis requires the obtaining of sensitive data. It was quickly realized that building rapport would be a nontrivial task in this project.

Access was gained to a southern California K-12 charter school that was founded by a group of homeschoolers.[5] Home Charter has 551 students and is essentially an organized homeschooling operation. Its educational charter identifies parents as the primary instructors. The school is used principally as a resource for homeschooling advice and materials and it offers some classes (primarily scientific, computer based, and vocational) and a variety of extracurricular activities.

Although Home Charter may seem like an unusual organization, it has been reported that 29% of California charter schools regularly use home-based learning with the parent as the primary instructor (SRI International, 1997). A full 15% of California charter schools rely on home-based education as the predominant instructional method. Moreover, as Stevens (2001) demonstrates, homeschoolers have always created support groups and organizations, making this enterprise much more collective than is commonly assumed (Bates, 1991). Schools are the next logical organizational step for this movement (Lines, 2000).

In an effort to better understand their clientele, Home Charter's administration permitted the author to survey the primary parent/teacher from each of the 330 families that have children enrolled at the school. An initial orientation to the study was provided to a large group of parents at a general, schoolwide assembly. Numerous smaller meetings further facilitated the building of rapport.

Although it cannot be guaranteed that this sample represents homeschoolers as a whole, the motivational patterns of this group do closely parallel the findings cited earlier from previous studies of the population. Also, the demographic characteristics of these parents (see below) are similar to the existing national samples of the homeschooling population. Furthermore, this detailed survey instrument and analysis is unique.

The primary parent/teachers of Home Charter students meet with an academic advisor on a monthly basis to discuss their home-based instruction.

Consistent with the previous homeschooling research, the parent/teachers are overwhelmingly the mothers of the children. A standardized survey instrument was developed and administered to the parent/teachers at Home Charter following one of their monthly meetings. A point-and-click computer program was developed, and the survey was administered electronically. The academic advisors agreed to vacate their cubicles (and computers) so respondents would have privacy while completing the survey. The instrument was fielded in November and December 2000. Of Home Charter's 330 families, 235 parent/teachers (homeschooling a total of 391 students) completed the survey. This 71% response rate on a volunteer survey is not atypical and is higher than any other known homeschooling sample. The Home Charter academic advisors were asked to solicit survey participation from each parent/teacher attending one of these mandatory meetings.[6]

As a charter school, Home Charter requires its students to participate in the state of California's Standardized Testing and Reporting Program. The standardized testing instrument employed in the 2000 program was the Stanford Achievement Test, Ninth Edition, Form T (SAT-9). The SAT-9 data file released from the state is nationally normed, providing meaningful percentile scores.

Home Charter's governing school district provided the author with these homeschooled students' achievement data. Given the lag time in the state's dissemination of the data files and the period of this study, the data from the April 2000 test administration was the version obtained. The exam was administered to students in Grades 2 through 11 by Home Charter officials on campus. This is noteworthy and suggests that the exam results may have greater validity than the data employed in previous studies. Most homeschooled students who take such exams do so in their homes under the supervision of their parents (Frost, 1988; Ray, 2000).

In April 2000, 308 Home Charter students completed the SAT-9. The author's survey (fielded in late 2000) contains data from 235 parent/teachers (with 391 students collectively). The two data files were merged so that parent characteristics are linked with their student's achievement scores. The data employed in the achievement analysis here contains 175 Home Charter students (with 118 parent/teachers collectively). The reduced sample size is because of three factors: (a) students in grades K, 1, and 12 do not take the SAT-9; (b) some of the parents completing the survey first enrolled their children at Home Charter in the 2000-2001 school year (and thus no achievement data were available for their children); and (c) some of the students who took this version of the SAT-9 graduated or otherwise left Home Charter at the end of the 1999 and 2000 school year (and thus no parent survey data were obtained).

DEPENDENT VARIABLES

Two sets of dependent variables will be analyzed: parental motivations and student achievement. Drawing from the previously cited research on why people homeschool, 16 different enrollment motivation items were constructed and fielded. The items were presented to respondents in a random order, preceded by the following statement:

> Please consider how important each of the following reasons is in your decision to take direct responsibility for your child(ren)'s education and to enroll them at Home Charter. Rate each item on a scale from 1 to 5 with *1* meaning that the reason is not important at all (or not applicable) and *5* meaning that the reason is extremely important.

These 16 enrollment motivations were subjected to principal components factor analysis with varimax rotation.[7] Table 1 provides the rotated matrix and the survey item wording. The items do cluster into the four broad categories indicated from the previous research: dissatisfaction with the public schools, academic and pedagogical concerns, religious values, and family life. These results provide evidence that this sample of homeschoolers is similar to the samples drawn in the previous research.

Given the factor structure in the data, four simple additive scales were formed from these items. Reliability analyses were performed for each scale, and in every case, each item contributed to the internal consistency of the measure. The first scale will be referred to as *critical of public schools* (Cronbach's alpha = .68). The second, *attracted to Home Charter* (Cronbach's alpha = .79), taps into academic and pedagogical concerns. The third scale, *ideological reasons* (Cronbach's alpha = .66), includes religious motivations. Finally, the fourth motivation measure, *family and children needs* (Cronbach's alpha = .58), surrounds family life and special needs.

Table 2 provides descriptive statistics for all of the variables to be employed. The mean scores of these parental motivation scales indicate that the attraction to Home Charter is the most popular motivation. Academic and pedagogical concerns are the roots of this movement origin and remain the most important today. Criticism of the public schools is also a popular motivation as the scale's mean is only slightly lower. Ideological reasons are a slightly less popular reason to home educate. However, the least popular motivation in this sample clearly is family and children needs.

The second set of dependent variables to be predicted is student achievement indicators from the SAT-9. The standard 3 R's will be considered here: reading, language, and mathematics scores. The normal curve equivalent

TABLE 1
Factor Loadings From Principal Components Factor Analysis (Rotated Matrix)

	Factor			
Enrollment Motivation Items	*1*	*2*	*3*	*4*
Concerned about the quality of teaching at other schools	.06	.78	–.10	.05
Concerned about the curriculum at other schools	.07	.78	.31	.10
The testing programs at other schools are inappropriate	.25	.58	.17	.16
I do not trust the government to provide an adequate education	.11	.54	.34	.21
Home Charter offers resources and support for homeschoolers	.78	.08	.15	.01
Home Charter's educational program is of superior quality	.80	.17	.02	.00
Home Charter's strength and focus on science education	.72	.00	.21	.11
HC is an important part of the charter school reform movement	.78	.15	.05	.08
The opportunity to give my child(ren) religious instruction	.06	.32	.68	–.16
At home during the day and want to provide guidance	.22	.21	.55	.21
It is not the government's responsibility to provide	.07	.34	.57	.12
I have always believed in the philosophy of homeschooling	.17	–.11	.75	.11
The scheduling of other schools is too inflexible for my family	–.01	.06	.35	.62
My child(ren) have special learning needs that cannot be met	.01	.00	.02	.75
My child(ren) have unique abilities that would not be fostered	.10	.21	.16	.59
My child had a difficult experience at his or her previous school	.15	.23	–.34	.61

NOTE: $n = 235$.

scores are employed. These normalized standard scores are based on national percentiles. Therefore, any score higher than 50 indicates better performance than the average American student. As Table 2 indicates, the average Home Charter student does outperform the average American student in each of the three areas. The total reading, language, and mathematics scores are each near the 54th percentile.

INDEPENDENT VARIABLES

In the first analysis, parental motivations are predicted in multiple regression models. Tapping into the backgrounds of these parents, 13 independent variables are employed: educational attainment, age, race, gender, household income, marital status, employment status, public school teaching experience, spouse involvement in home education, previous involvement with the homeschooling community, number of years home educating, religiosity, and self-reported political identification.

TABLE 2
Descriptive Statistics

	n	*Minimum*	*Maximum*	*Mean*	*Standard Deviation*
Parent dependent variables					
Critical of public schools	235	5.0	20	15.77	3.29
Attracted to home charter	235	4.0	20	16.47	3.48
Ideological reasons	235	4.0	20	14.63	3.94
Family and children needs	235	4.0	20	10.87	4.19
Student dependent variables					
Total reading NCE score	160	10.4	99	54.56	17.09
Total language NCE score	171	6.7	99	53.69	19.93
Total mathematics NCE score	172	15.4	99	54.09	18.91
Parent independent variables					
Education	235	1.0	5	3.08	0.84
Age	235	1.0	6	3.40	1.34
Minority	235	0.0	1	0.17	0.37
Male primary teacher	235	0.0	1	0.06	0.24
Household income	235	1.0	11	7.07	2.28
Married	235	0.0	1	0.93	0.25
Employed	235	0.0	1	0.40	0.49
Teaching experience	235	0.0	1	0.29	0.46
Spouse involvement	235	0.0	1	0.42	0.49
Previous involvement	235	1.0	4	2.17	1.15
Years home educating	235	1.0	5	2.64	1.22
Religiosity	235	3.0	9	7.17	1.60
Political identification	235	1.0	7	5.59	1.32
Student independent variables					
Student grade level	175	2.0	11	6.59	2.71
Female student	175	0.0	1	0.51	0.50
Daily instructional hours	175	0.0	13	4.82	2.43
Number of siblings homeschooled	175	1.0	5	1.80	0.88

NOTE: NCE = Normal curve equivalent.

In the second analysis, student achievement scores are predicted in nested multiple regression models. A total of 21 independent variables are tested. Four student-related factors are included: grade level, gender, average daily number of instructional hours, and number of siblings being homeschooled concurrently. The 13 parent factors are also included as predictors. Finally, the parental motivation scales (previously analyzed as dependent variables) are included as determinants of student achievement. Each of the independent variables is described below.

The first is the educational attainment of the parent/teacher. This is an ordinal variable coded as "Did not graduate from high school," "High school

graduate," "Attended some college," "Earned Bachelor's degree," and "Earned Master's or other graduate degree" (2 missing cases were assigned to the mean or mode "Some college" category; see Table 2).[8] Just more than 20% of these parents have earned a Bachelor's degree or better, and 60.4% have attended some college. This distribution coincides with literature suggesting that parents of homeschooled children are more educated than average American adults (Mayberry et al., 1995; Ray, 1999; Rudner, 1999; Wagenaar, 1997).

Respondents were also asked to provide their birth year. This number was subtracted from 2000 and the responses were coded into six age categories: "30 or less," "31 to 35," "36 to 40," "41 to 45," "46 to 50," and "More than 50." The category "36 to 40" is nearest the mean (and 3 missing cases were recoded here).

A dummy variable was created for race (*minorities* = 1). Parents were not asked to identify their own race in the survey. However, school databases were available that contained racial information for every Home Charter student. Parents who have children whose race was coded as African American, Latino, or Asian American are assumed to be minorities here. This coding method identifies 16.6% of the parent/teachers as minorities (of the students of color, 22.6% are African American, 61.3% are Latino, and 16.1% are Asian American). This figure also corresponds with previous literature indicating that 80% to 90% of homeschooled students are White (Ray, 1999; Rudner, 1999; Wagenaar, 1997).

A dummy variable for gender was also created (*males* = 1). As typical with homeschoolers, only 6.4% of Home Charter's parent/teachers are men (Ray, 1999; Stevens, 2001).

Home Charter parent/teachers were asked to select the category in which their annual household income falls (a "Decline to state" option was also provided): Less than $15,000; $15,000 to $19,999; $20,000 to $24,999; $25,000 to $29,999; $30,000 to $34,999; $35,000 to $39,999; $40,000 to $49,999; $50,000 to $59,999; $60,000 to $74,999; $75,000 to $99,999; $100,000 and more. Of them, 25 (10.6%) respondents chose the "Decline to state" option. These parents were recoded into the "$40,000-$49,999" category that is nearest the mean value.

Marital status was also measured in the survey. As in the case of homeschoolers in general (Mayberry et al., 1995; Ray, 1999; Rudner, 1999), the vast majority of parent/teachers (93.2%) are married. A married dummy variable was created and those who are single, divorced, separated, or widowed are coded 0 (2 missing cases were assigned the mode value of 1).

A dummy variable concerning employment was also created. Those parent/teachers who had some form of paid job (39.6%) were coded 1.[9] As

indicated in earlier research (Mayberry et al., 1995; Rudner, 1999; Wagenaar, 1997), the majority of parent/teachers are not in the paid labor force.

Respondents were also asked if they had ever taught in a public or private school. A notable 29.4% responded affirmatively and were coded 1 on this dummy variable (4 missing cases were coded with the mode value 0). Rudner (1999) similarly found that nearly one out of every four homeschooled students has at least one parent who is a certified teacher.

Home Charter's primary parent educators were asked "Does your spouse regularly participate in the home education of your child(ren)?" Of them, 42% indicated yes and were coded as 1 on this dummy variable.

Two items concerning homeschooling experience were also fielded: "Prior to joining Home Charter, how involved were you with the homeschooling community? (*not at all, marginally involved, somewhat involved, greatly involved*)" and "How many total years have you been home educating any child(ren)? (*1; 2-3; 4-6; 7-9; 10 +*)." In respect to the first item, 18.3% of the respondents stated that they were greatly involved with the homeschooling community prior to joining Home Charter (7 missing cases were recoded into the category nearest the mean, *Marginally involved*). About half of the parents are relatively new to homeschooling. The year when the data were collected was the 1st year that 19.1% of the parents had homeschooled and 31.9% had been homeschooling for only 2 to 3 years. The 7 missing cases on this item were recoded into the *4 to 6* category because it is nearest to the mean.

Finally, religiosity was considered in the models given its importance in homeschooling (Stevens, 2001) and in social movements (McVeigh & Sikkink, 2001). The following three items were measured in the survey: "To what extent do you currently incorporate religion into your home curriculum? (*not at all, to some extent, to a great extent*)," "Generally speaking, would you consider yourself *very religious, somewhat religious, not very religious, or decline to state*," and "Apart from weddings, funerals, and christenings, about how often do you attend religious services these days? (*more than once a week, once a week, less often, decline to state*).

After recoding—to make the ranges consistent from low to high and to replace the missing values and "Decline to state" responses with the mean values—it was found that the three items were significantly correlated. Therefore, a simple additive scale was constructed. The internal reliability of the scale is acceptable (Cronbach's alpha = .69) and does not improve if any of the items are excluded.

The standard self-reported political identification measure was also employed in the survey: "We hear talk these days about liberals and conservatives. Imagine a 7-point scale in which people who think of themselves as

extremely liberal score 1 and people who think of themselves as *extremely conservative* score 7 and 4 is the midpoint. Where would you place yourself on this scale?" The mean value is 5.54, and 25 respondents (10.6%) chose the "Decline to state" option. These missing cases were recoded as *6* (that is nearest the mean).

In addition to these parental characteristics, four student characteristics will be tested in the achievement analysis. Grade level and student gender are standard indicators that were included in the achievement data file. The average grade level is 7th, and 51% of the students reported being female.

The average daily number of instructional hours that a student receives is also included in the analysis because it may be relevant. Parent/teachers were asked to report the average daily hours of home instruction their children receive from themselves, their spouses, and any other home teacher (such as a grandparent). Response options were 0, 15 minutes, 30 minutes, 1, 1.5, 2, 3, 4, 5, 6, 7, or 8. The three sets of time were summed to create a total hours measure. The average Home Charter student receives 4.82 hours of home instruction per day.

Finally, for each child, the number of siblings being homeschooled concurrently was computed. This variable is included because students with other siblings being homeschooled will hypothetically receive less one-on-one instructional time with their parents. Parents were asked to identify all of their children that they currently homeschool. Of the total, 40% of the students were the only ones being homeschooled. On average, 1.8 students were being homeschooled per Home Charter family.

Ordinary least squares regression models are employed in the following analyses. Multicollinearity does not pose a problem in the models.[10] The variance inflation factor for each of the predictors is small (highest is 1.49 in the enrollment motivations analysis and 2.35 in the achievement analysis) and well within acceptable levels (less than 10; Belsley, Kuh, & Welsch, 1980).

FINDINGS

PARENTS' MOTIVATIONS

Table 3 presents the findings from the four models predicting parents' enrollment motivations. It is immediately evident that few of these demographic factors are significant determinants of these motivations. Of the 13 variables, 6 (education, male primary teacher, household income, married,

TABLE 3

Ordinary Least Square Coefficients From the Regression of Parents' Enrollment Motivations on Demographic Factors

	Critical of Public Schools			*Attracted to Home Charter*			*Ideological Reasons*			*Family and Children Needs*		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
Education	–0.37	0.28	–.10	–0.14	0.30	–.03	–0.29	0.30	–.06	0.28	0.35	.06
Age	0.12	0.17	.05	0.48**	0.18	.19	0.04	0.18	.01	0.24	0.21	.08
Minority	1.41*	0.58	.16	0.38	0.62	.04	0.99	0.63	.09	0.25	0.74	.02
Male primary teacher	0.65	0.90	.05	0.80	0.96	.06	1.01	0.98	.06	0.88	1.14	.05
Household income	0.01	0.10	.01	0.03	0.11	.02	–0.04	0.11	–.02	–0.18	0.13	–.10
Married	–1.28	0.94	–.10	–1.43	1.01	–.10	0.22	1.02	.01	–2.24	1.20	–.14
Employed	–0.83	0.47	–.12	–0.44	0.50	–.06	–1.52**	0.51	–.19	–0.37	0.60	–.04
Teaching experience	–0.44	0.49	–.06	–0.37	0.53	–.05	–0.98	0.54	–.11	–2.06***	0.63	–.23
Spouse involvement	1.27**	0.44	.19	1.14*	0.47	.16	0.95*	0.48	.12	0.73	0.56	.09
Previous involvement	0.13	0.22	.05	0.19	0.23	.06	0.38	0.24	.11	–0.38	0.28	–.10
Years home educating	–0.34	0.21	–.13	–0.59**	0.22	–.21	0.45*	0.23	.14	0.37	0.26	.11
Religiosity	–0.05	0.15	–.02	–0.27	0.16	–.13	0.56***	0.16	.23	–0.34	0.19	–.13
Political identification	0.05	0.17	.02	0.09	0.18	.03	0.21	0.18	.07	–0.16	0.22	–.05
Constant	17.95***	1.83		18.70***	1.95		8.52***	1.98		16.06***	2.31	
R^2		0.12			0.10			0.28			0.13	

*$p < .05$. **$p < .01$. ***$p < .001$. two-tailed tests. $n = 235$.

previous involvement, and political identification) have no significant effects in any of the models. Overall, only 10 of the 52 tested relationships are statistically significant.

Two variables have moderate, statistically significant associations with the criticism of public schools motivation. First, minority parent/teachers are more likely to be motivated by such criticisms than are White parents. Second, those parents with spouses who are regularly involved in the home instruction are more likely to homeschool because of their criticism of public schools than those with uninvolved spouses. Around 12% of the variance in this dependent measure is explained by this model.

The second model demonstrates that older homeschoolers are more likely to be motivated by their attraction to Home Charter. Also, those with involved spouses are more likely to homeschool because of their academic and pedagogical concerns. Finally, those who have been home educating for fewer years are more motivated by these reasons. Only 10% of the variance in this scale is explained.

The ideological reasons model is by far the most robust. There are four significant predictors, and 28% of the variance is explained. Those parents that are not employed and those with involved spouses are more likely to be motivated by ideological reasons. Also, those who have been homeschooling for longer and those who are more religious are more likely to homeschool because of ideological reasons.

Finally, only one variable significantly determines the family and children needs scale. Those parents who have never taught in public or private schools are more likely to homeschool because of the particular needs of their families. All of these findings will be substantively interpreted in the end section. Now, the student achievement findings will be reported.

STUDENT ACHIEVEMENT

The student achievement models are nested. First, the student factors are entered, then the parent demographics are added, and finally the enrollment motivations. Table 4 reports the findings for students' reading achievement. The *number of siblings* variable is significant in the first model, but its effects become nonsignificant as the other variables are entered. The second model indicates that parents' educational attainment and political identification have moderately strong positive effects. Children of the more educated and children of the more conservative do better in reading.

Education and political identification remain significant in the third model and two of the enrollment motivations are relevant as well. Children of

TABLE 4
Ordinary Least Square Coefficients From the Regression of Student Reading Achievement on Student Factors, Parent Factors, and Parents' Enrollment Motivations

	Student Factors			*Parent Factors*			*Parent Enrollment Motivations*		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Student grade level	–0.19	0.54	–.03	–0.11	0.59	–.02	0.31	0.60	.05
Female student	–0.76	2.68	–0.02	0.13	2.79	.00	–0.76	2.76	–.02
Daily instructional hours	–0.75	0.61	–.11	–1.11	0.72	–.16	–0.54	0.74	–.08
Number of siblings homeschooled	3.99*	1.57	.20	3.51	1.86	.18	3.31	1.86	.17
Education				5.35**	1.88	.26	5.63**	1.85	.27
Age				1.09	1.30	.08	0.87	1.29	.06
Minority				–0.06	3.72	.00	–1.05	3.66	–.02
Male primary teacher				2.89	6.33	.04	1.25	6.59	.02
Household income				0.47	0.72	.06	0.40	0.70	.05
Married				5.11	6.87	.07	4.60	6.76	.07
Employed				–4.12	3.22	–.12	–3.08	3.19	–.09
Teaching experience				0.80	3.29	.02	–2.32	3.39	–.06
Spouse involvement				0.20	3.13	.01	–0.20	3.17	–.01
Previous involvement				–0.98	1.48	–.06	–1.70	1.47	–.11
Years home educating				–0.71	1.87	–.04	0.24	1.87	.01
Religiosity				0.30	0.94	.03	–0.21	0.99	–.02
Political identification				2.57**	1.03	.21	2.25*	1.01	.18
Critical of public schools							1.09*	0.54	.21
Attracted to home charter							–0.59	0.40	–.14
Ideological reasons							–0.09	0.45	–.02
Family and children needs							–1.06**	0.39	–.25
Constant	52.72***	6.15		14.60	13.33		21.48	17.08	
R^2	0.05			0.17			0.23		

*$p < .05$. **$p < .01$. ***$p < .001$. two-tailed tests. $n = 160$.

homeschooling parents that are more critical of the public schools have higher levels of reading achievement. Children in families motivated by the needs of the family perform lower on the reading portion of the SAT-9. This past model explains around 23% of the variance in total reading scores.

Table 5 presents the findings from the models predicting student language achievement. Although two student factors—*daily instructional hours* and *number of siblings homeschooled*—have significant effects in the first model, they become nonsignificant as parent factors are added. Nonetheless, student grade level is significant in the past model. Those Home Charter students in higher grades do better on average than those in lower grades.

As in the reading analysis, parents' education and political identification have positive effects on language achievement. Likewise, the children of those motivated by their criticism of public schools have higher language scores. The children of parents that homeschool because of their family and children needs perform less well in language. This past model explains nearly one quarter of the variance in student language achievement.

Finally, Table 6 provides the math achievement analysis. The number of siblings homeschooled variable is significant in the first two models but is diluted with the addition of parents' homeschooling motivations. Both student grade level and parents' educational attainment emerge as having moderate positive effects in the past model.

Political identification, as in every other model in which it was tested, is significant as the children of the more conservative do better in math. A new enrollment motivation shows significant effects here. Parents who are more likely to homeschool because of their attraction to Home Charter (academic and pedagogical motivations) have children with lower math achievement. And again, as in the previous two analyses, children of parents motivated by the needs of the family perform lower on the math portion of the SAT-9. This model explains about 28% of the variance in math achievement.

DISCUSSION

PARENTS' MOTIVATIONS

To begin, it is important to recognize the noneffects in the motivation analysis. Parents' motivations for homeschooling are not uniformly affected by their education, gender, income, marital status, previous involvement with homeschooling, or political identification. That these factors do not underlie homeschooling motivations points to the heterogeneity of this population. The more educated and affluent, for example, do not have differing motivations than the less educated and poor. In other words, homeschoolers cannot easily be pigeonholed into different types.

In the first model (see Table 3), it was found that homeschoolers of color are more likely to be motivated by their criticism of the public schools. Because of their historical subjugation in the United States, people of color may be more critical of this society's mainstream institutions. Public schools in particular may be seen as part of the larger system that has subordinated them and minorities may feel that their children face discrimination in the

TABLE 5
Ordinary Least Square Coefficients From the Regression of Student Language Achievement on Student Factors, Parent Factors, and Parents' Enrollment Motivations

	Student Factors			*Parent Factors*			*Parent Enrollment Motivations*		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Student grade level	0.84	0.61	.11	0.92	0.66	.13	1.39*	0.67	.19
Female student	3.45	2.95	.09	4.03	3.07	.10	3.38	3.08	.08
Daily instructional hours	–1.32*	0.68	–.16	–1.43	0.78	–.17	–0.72	0.81	–.09
Number of siblings homeschooled	3.51*	1.67	.16	3.42	2.03	.15	2.95	2.05	.13
Education				4.44*	2.07	.19	4.78*	2.06	.20
Age				0.94	1.43	.06	0.86	1.43	.05
Minority				3.72	4.10	.07	2.64	4.07	.05
Male primary teacher				5.41	6.79	.07	1.73	7.12	.02
Household income				0.65	0.80	.07	0.58	0.79	.06
Married				10.06	7.61	.12	8.84	7.55	.11
Employed				–2.36	3.53	–.06	–1.14	3.53	–.03
Teaching experience				0.34	3.63	.01	–2.64	3.76	–.06
Spouse involvement				2.07	3.44	.05	2.56	3.53	.06
Previous involvement				–1.44	1.63	–.08	–2.16	1.63	–.12
Years home educating				–0.66	2.04	–.03	0.11	2.06	.01
Religiosity				–0.47	1.05	–.04	–1.11	1.12	–.09
Political identification				2.95**	1.15	.20	2.60*	1.14	.18
Critical of public schools							1.30*	0.61	.21
Attracted to home charter							–0.73	0.44	–.14
Ideological reasons							0.18	0.51	.04
Family and children needs							–0.86*	0.44	–.17
Constant	46.57***	6.79		6.03	14.78		6.12	19.12	
R^2	0.09			0.20			0.24		

*$p < .05$. **$p < .01$. ***$p < .001$. two-tailed tests. $n = 171$.

public schools. Given the confluence of racial and class inequality, it is also likely that people of color have fewer quality school options within their neighborhoods.

Families with both spouses involved in the home instruction are also more likely to have taken on this responsibility because of their criticism of the public schools. This decision was likely a joint one in these families. Both parents agreed that public schools are problematic and that they should provide an education to their children themselves.

The older homeschooling parents were more likely to be motivated by their attraction to Home Charter. So these older homeschoolers are more likely to be the pedagogues. It is likely that they have seen many reforms in

TABLE 6
Ordinary Least Square Coefficients From the Regression of Student Math Achievement on Student Factors, Parent Factors, and Parents' Enrollment Motivations

	Student Factors			*Parent Factors*			*Parent' Enrollment Motivations*		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Student grade level	.90	.57	.13	.83	.62	.12	1.29*	.62	.19
Female student	–4.27	2.76	–.11	–3.88	2.88	–.10	–5.38	2.83	–.14
Daily instructional hours	–.94	.63	–.12	–1.32	.73	–.17	–.79	.75	–.10
Number of siblings homeschooled	5.01**	1.57	.24	3.93*	1.90	.19	3.59	1.89	.17
Education				3.59	1.94	.16	3.94*	1.90	.17
Age				0.44	1.34	.03	0.09	1.32	.01
Minority				–3.71	3.85	–.08	–4.78	3.76	–.10
Male primary teacher				2.29	6.37	.03	3.29	6.56	.04
Household income				0.71	0.75	.08	0.57	0.73	.07
Married				5.11	7.14	.07	3.14	6.98	.04
Employed				–1.36	3.31	–.04	–.85	3.25	–.02
Teaching experience				0.52	3.40	.01	–2.80	3.47	–.07
Spouse involvement				–4.92	3.22	–.13	–6.11	3.24	–.16
Previous involvement				–0.25	1.52	–.01	–1.08	1.51	–.06
Years home educating				–0.74	1.91	–.04	–0.15	1.90	–.01
Religiosity				0.54	0.99	.04	–0.26	1.04	–.02
Political identification				3.14**	1.06	.23	2.73**	1.04	.20
Critical of public schools							0.53	0.56	.09
Attracted to home charter							–0.81*	0.41	–.17
Ideological reasons							0.17	0.47	.03
Family and children needs							–1.28**	0.40	–.27
Constant	45.91***	6.35		12.35	13.81		37.14*	17.66	
R^2		0.11			0.22			0.28	

*$p < .05$. **$p < .01$. ***$p < .001$. two-tailed tests. $n = 172$.

the public education system throughout their lives and have come to believe that homeschooling is the best option for them.

Spousal involvement also positively predicted these academic and pedagogical motivations. These families are committed to promoting academic excellence and believe that they need both parents' involvement to do so. Newer homeschoolers are more likely to make this choice because of their attraction to Home Charter as well. Perhaps they see Home Charter as a resource to guide them through this rather unfamiliar terrain. It is also possible that newer homeschoolers are more motivated by academic concerns. If this is the case, the implication is that the liberal roots of the movement in the

1960s and 1970s remain important and are popular among the newest homeschoolers.

There were four significant factors in the ideological reasons model. Those parent/teachers that are not employed are more likely to homeschool for ideological reasons. These are likely to be traditional, conservative households with stay-at-home mothers. Spousal involvement has positive effects in this model too, however. The home educating is not only the mother's responsibility in these families.

Those with more homeschooling experience are more likely to choose this option for ideological reasons. Those who have been doing it longer are apparently more likely to be part of the earlier (1980s to 1990s) wave of conservative, religious homeschoolers. And, not surprisingly, the more religious are more likely to homeschool for ideological reasons.

The only significant finding in the family and children needs model surrounds previous teaching experience. Those who have not taught in public or private schools are more likely to homeschool because of their family and children needs. Those without previous teaching experience will have less knowledge of their students' peers than teachers would. Those who have taught would have experienced a full range of student types and would have a stronger basis from which to evaluate individual children. Home educators who have not previously taught may be more likely to see their children as having special needs and therefore homeschool because of these reasons.

STUDENT ACHIEVEMENT

The student achievement findings parallel much of the previous research cited earlier. Student gender, amount of instructional time, household income, and teaching experience are not statistically associated with student achievement. Although it has apparently not been tested in previous studies, student race also has no statistical relation to achievement here. The two great divides that public school children face—race and class—are inconsequential for student achievement among home-educated children.

There was remarkable consistency among the significant determinants of homeschooled students' achievement. Three factors were found to have the same effect in the reading, language, and math achievement models (see Tables 4, 5, and 6). These three determinants are all parent-level factors. Students who are homeschooled by more educated parents have higher levels of academic achievement. This has been previously found (Ray, 2000; Rudner, 1999) and is sensible as there appears to be some spillover effect.

Students homeschooled by more conservative parents also perform better on standardized tests. So, are students of conservatives smarter than students of liberals? It is likely that this finding can be attributed to liberal and conservative homeschoolers' different teaching styles and different attitudes toward standardized tests. Conservative homeschooling parents are more likely to teach their children specific knowledge and values and to replicate the classroom environment at home (Van Galen, 1988). Liberals, on the other hand, are more likely to be unschoolers practicing more informal and experimental learning. Conservatives are also more likely than liberals to accept standardize testing and take the results seriously. Therefore, this political identification relationship most likely reflects the fact that some intervening variables (such as teaching style) were not measured in these models.

The achievement analyses also consistently demonstrate that children of parents who homeschool because of family and children needs have lower levels of academic achievement. This suggests that these students are more likely to have special learning needs that hinder their performance on achievement tests.

Two determinants in the achievement analyses were significant in two of the three tested models. Students of parents who homeschool because of their criticism of the public schools have higher reading and language scores. Perhaps these parents are more efficacious teachers, working harder on this responsibility that they have taken on because of their rejection of the public system. With the increasing move toward standardization and accountability in public education, homeschoolers that are critical may feel that they need to prove themselves. Furthermore, perhaps their children feel compelled to work harder, knowing that their parents are committed and have chosen homeschooling because the alternative is not good enough.

Home Charter students in higher grades performed better on the language and mathematics exams than those in lower grades. Previous research (Ray, 2000) has not documented any relationship between homeschooled students' grade level and achievement. Perhaps this is a peculiarity of this sample. The Home Charter model appears to be working better for students in higher grades.

Finally, the children of those parents who homeschool because of their attraction to Home Charter (academic and pedagogical motivations) have lower math scores. Some homeschooled students do less well in mathematics than in other subjects (Frost, 1988). Perhaps parents of those children who struggle in math are more likely to interpret their homeschooling as being academically motivated. This argument raises an important issue and highlights one of the limitations of this study. These participants were asked to report their initial motivations for an activity that they had already gained

some experience in at the time of the survey. Cross-sectional data are limited in their ability to capture the differences in motivations behind initial action and ideological transformation that emerges from involvement in such behavior (Pierce & Converse, 1990).

CONCLUSION

This research has investigated two major aspects of homeschooling. Factors determining parental motivations and student achievement have been identified. As documented in previous studies, parents were found to homeschool their children for four broad sets of reasons: dissatisfaction with the public schools, academic and pedagogical concerns, religious values, and family needs. Yet these differing motivations do not translate neatly into distinct groups of home educators. The statistical models are rather weak as major parent demographic factors including educational attainment and family income do not uniformly affect the decision to homeschool. This is a heterogeneous population with varying and overlapping motivations. Simplistic typologies cannot capture the complexities of homeschoolers.

Policy makers and educators should be aware of the diversity of those who home educate their children. The results from this study also suggest that the liberal roots of this movement—academic and pedagogical concerns—remain as important as ever. The newest homeschoolers appear to be mostly motivated by academic reasons. The religious basis of the movement that dominated in the 1980s to early 1990s may have subsided. Overall, ideological reasons are a less popular motivation to homeschool and the newest generation of homeschoolers has a different rationale.

The student achievement results were quite consistent across the reading, language, and math achievement models. These findings also parallel much of the earlier research. Of particular importance, parental education and political identification are consistently significant. It is likely that politics per se are not directly so important, but the teaching styles of parents of different political persuasions are the intervening determinant.

Policy makers and educators may be particularly interested in the noneffects of the achievement models. Family income and student race have no statistical association with homeschooled students' achievement. The two big divides in public education are race and class (Brint, 1998; Kozol, 1992). Minority students and those from low-income families have consistently been found to be at a disadvantage in the public education system. Home-

schooling apparently levels the playing field, ameliorating the negative affects that race and class subordination have shown in the public schools.

Another contribution of this analysis surrounds the role of parental motivations in determining student achievement. Parents' reasons add significantly to the amount of variance explained in each model, and these relations have never before been tested. One finding in particular deserves further attention by future researchers. Students of parents who homeschool because of their criticism of the public schools were found to have higher reading and language scores.

Education is a key social institution that plays a predominant role in our increasingly urban society. In addition to urbanization, globalization processes have resulted in time-space compression promoting world interconnectedness (Harvey, 1989). As people who are engaged in practices once considered marginal or alternative become more networked, their influence will grow. More and more Americans are choosing to provide education to their children themselves. Dissatisfaction with public education is likely to continue and possibly increase given the move toward standardization and accountability in state initiatives such as California's Public Schools Accountability Act (Ogawa & Collom, 2000) and the national No Child Left Behind Act. Therefore, homeschooling is likely to grow more popular and become more mainstream.

The irony of public education's shift to standardization and accountability is that it seems to run counter to the needs of the global, flexible economy. Public schools encourage students to compete individually whereas skilled work under the new economy is based on a team structure (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Appelbaum & Batt, 1994). Moreover, the flexible workplace demands flexible knowledge that is achieved through learning to learn (Rubin, 1996), not by learning how to take standardized examinations. Globalization presents many interesting challenges to public education. More research on alternatives such as homeschooling is required to assess their efficacy in this rapidly changing world.

NOTES

1. Several dissertations that involve original data collection have also been written on homeschoolers. With the noteworthy exception of Grubb's (1998) conference paper, Lange and Liu's (1999) research report, and Bielick, Chandler, and Broughman's (2001) U.S. Department of Education report, this literature review focuses on peer-reviewed publications.

2. Mayberry, Knowles, Ray, & Marlow (1995) also conducted a large survey of homeschooling parents from Washington, Utah, and Nevada (N = 1,497; response rate = 25%) but do not report any motivation results.

3. There have also been claims that some parents explicitly choose homeschooling because of their racism against students of color (Ray, 1999).

4. It is not surprising that there is much more research on the outs of homeschooling rather than the ins. Policy makers and the public are no doubt more concerned with whether it works.

5. California was second only to Minnesota in adopting charter legislation. As of September 1999, 36 states and the District of Columbia had charter laws supporting nearly 1,500 schools and over 250,000 students nationwide (RPP International, 2000).

6. There is no known response bias in this sample. Many of those not participating did not decline to complete the survey. Some parents missed their scheduled monthly meeting, others were not asked to complete the survey by academic advisors who ran out of time for their conferences, and a few had technical difficulties with the computer data collection program.

7. Eight of the items had two missing values, three items had three, two items had four, two items had five, and one item had six missing values. All were recoded with the whole number nearest the mean to preserve cases.

8. Because it was found to be a significant achievement predictor in previous studies, spouse's educational attainment was tested in exploratory analyses (in both the motivation and achievement models). It was not significant in any of the models and was therefore excluded as a predictor.

9. Surprisingly, 23 (9.8%) respondents left this item blank. It was assumed that these people were not employed and skipped the question instead of selecting "No paid job." Thus, they were recoded as 0 in the dummy variable (that is also the mode value).

10. Contact the author for a copy of the collinearity diagnostics and correlation matrices.

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