

First-Year College Performance:

A Study of Home School Graduates and Traditional School Graduates

by Dr. Paul Jones and Dr. Gene Gloeckner

Background

During the past three decades, the number of families choosing to exercise their legal option to educate their children at home, rather than enroll them in public schools, has grown throughout the United States (Mayberry, Knowles, Ray, and Marlow 1995, Osborn 2000, Ray 2000). According to recent estimates, the home school K-12 population may be as high as 1.6 million students nationwide and may grow nearly seven percent annually, thus reaching three million by the year 2010 (Lines 1996, Ray 1999).

During this period of growth, home school advocates challenged state policy officials' and school boards' compulsory regulations, while the same advocates left many colleges and universities relatively alone. College admission officers across the United States were trying to grapple with how to address a growing population of the newly-graduated, home school students knocking at their doors.

Admission officers know little about the performance of a home school graduate's academic performance in college, but this fact doesn't stop colleges and universities from developing admission policies (accommodating or unaccommodating) for the home school population. Much of the existing research on academic performance centers on K-12, home school students and many of these studies show that home school children outperform their public school peers on several national standardized exams), including the Stanford Achievement Test and the Iowa Tests of Basic Skills, and at nearly all grade levels (Rakestraw 1987, Frost 1987, Wartes 1990, Ray 1990, Rudner 1999).

Three empirical studies, specifically focused on the first-year academic performance of the home school college student (Galloway 1995, Gray 1998, Jenkins 1998), attempted to



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remedy higher education and policy makers' lack of knowledge. Galloway (1995) found home school graduates outperformed their conventional private school peers on the ACT English subtest. Jenkins (1998) found that full- and part-time community college home school students' average first-year grade point averages were higher than non-home school graduates. Jenkins also found that the home school student's outperformed their peers in reading and mathematics on the Texas Academic Skills Program. Finally, Gray (1998) found no significant differences between home school and traditional students at three institutions in Georgia (including a public university, a private university and a private college) on the SAT scores, English grades or cumulative grade point averages.

Purpose

The purpose of this study was to determine differences, in first-year college academic performance, between home school and traditional high school graduates, measured by grade point average, retention, ACT test scores, and credits.

To accomplish the purpose, nine null hypotheses were tested to determine if there were differences between home school graduates and traditional high school graduates. The results were:

- No significant difference in first-year grade point averages
- No significant difference in college retention during their first-year (fall to spring semester)
- No significant difference in first-year credit hours earned
- No significant difference in the ACT Composite scores
- No significant difference in the ACT English test scores
- No significant difference in the ACT Mathematics test
- No significant difference in the ACT Reading test scores
- No significant difference in the ACT Science Reasoning test scores
- No correlation between the variables: first-year grade point average, first year earned credit hours, first-year retention, and the ACT Composite test score

Method

The samples for this study consisted of 55 first-year, degree-seeking, home school graduates who enrolled in Colorado four-year public college or universities from 1998 to 2000. Once the home school sample was identified, a random sample of 53 traditional high school graduates (public, private, parochial, etc.) who met the same criteria of the home school sample and matched by the home school institution ($n = 53$).

The Colorado Commission on Higher Education (CCHE) obtained the data and identified home school graduates by a high school code, a transcript type or an identification number. The dependent variables were: overall freshman cumulative grade point average; cumulative credit hours earned; SAT Combined test score (converted to ACT Composite score and only used for those students who did not have a ACT Composite score); gender; race/ethnicity; and ACT Composite and subtest scores.

Data Collection and Instruments

CCHE collected data, the ACT Composite test scores and the four subtest scores (English, Mathematics, Reading, and Science Reasoning), for the first phase. Additionally, they collected data to determine first-year academic performance, measured by first-year grade point average, retention and first-year credit earned.

Several studies show the ACT Composite test score as a reliable predictor of first-year success in college (ACT Assessment: Technical Manual 1997, Galloway 1995, House and Keeley 1997, Kern, Fagley, and Miller 1998, Rodriguez 1996, Schade 1977, Snyder and Elmore 1983). House and Keeley (1997) also found that the ACT Composite Test score was a valid assessment for Native American students as a predictor of college success, while Rodriguez (1996) found similar results for Mexican American students.

In a 1995 study conducted by ACT on the reliability of the ACT Assessment scores, reliability coefficients were high (at .85 to .92 on each subtest and a coefficient of .96 on the ACT Composite test score). To ensure content validity, ACT provides ongoing assessment of the content validity by ensuring that the "test content is representative of current high school and university curricula" (37).

Analyses

Researchers designed this study to compare the first-year academic performance of home school graduates and traditional high school graduates measured on the following four dependent variables: (1) grade point average; (2) retention; (3) ACT Test scores; and (4) credits earned in their first year of college.

The final section determined if there were statistical differences between home school graduates and traditional high school graduates on the following three variables: (1) gender, (2) race/ethnicity (minority versus non-minority students), and (3) institutional type (college versus university enrolled).



Results

Researchers rejected eight of the nine null hypotheses. Table 1 shows the equivalence of the groups on gender, race/ethnicity (minority versus non-minority), and college or university enrolled.

Researchers rejected the results of the first three hypotheses, with the home school first-year mean grade point average 2.78 and traditional high school graduates mean grade point average at 2.59, [$t(106) = .923, p = .358$]. The first-year retention 42 students were retained for both home-school and traditional high school graduates after their first semester, [$X^2(1, N=108) = .130, p = .818$]. Home school graduates earned 23.85 credit hours compared to 22.69 credit hours earned in the first-year for traditional high school graduates, [$t(106) = .554, p = .581$].

Table 1
Number of Home School Graduates and Traditional High School Graduates by Gender, Ethnicity and Institutional Type

Demographic Variables	Home School	Traditional School		
	(n=55)	(n=53)	X ²	P
Female	26	27	.146	.847
Male	27	26		
Minority	7	12	1.497	.310
Non-Minority	44	40		
College	32	30	.027	1.00
University	23	23		

Note: A total of five students were coded as unknown ethnicity and, therefore, are not identified in the above totals.

Although they rejected eight of the null hypotheses, Table 2 shows that the ACT Composite, Mathematics and Science subtests scores of home school graduates approached statistical significance compared to the same scores for traditional graduates. Because the previous research did not support home school graduates consistently out-performing their traditional high school peers, the researchers did not predict that home school graduates would have performed better than traditional high school graduates. If the researchers would have expected this difference and tested the variables as a one-tailed test, home school graduates would have scored statistically higher than their peers on the ACT Composite, Mathematics and Science subtests scores.



Table 2
ACT Composite and Subtests Scores for Home School and Traditional High School Graduates

Tests	Home school		Traditional		df	t
	M	SD	M	SD		
ACT Comp.	22.80	5.36	21.30	4.04	102	1.701
ACT English	21.36	4.81	20.00	4.73	85	1.686
ACT Math.	22.15	5.95	20.31	4.22	85	1.322
ACT Reading	22.90	6.65	21.52	5.28	85	1.898
ACT Science	23.18	4.75	21.29	4.51	85	1.076

Note: ACT³= includes 13 converted SAT Combined scores to ACT Test Composite Test scores. $p > .05$ for all tests.

Finally, researchers conducted a test to determine if first-year grade point average, first-year earned credit hours, first-year retention, and the ACT Composite test score correlate.

Table 3 shows strong link between ACT Composite test scores and the other three variables: retention, cumulative grade point average, and cumulative credits earned. Retention and cumulative credits hours earned were strongly connected. Students' ACT Composite test scores generally predicted first-year retention, first-year grade point average and cumulative credits earned. Logically, retained students earned more cumulative credits hours.

Table 3
Intercorrelations for ACT Composite Test Scores, Retention, Cumulative Grade Point Average, and Cumulative Credit Hours Earned

Variables	1	2	3	4
1. ACT Composite	—			
2. Retention	.20*	—		
3. Cumulative GPA	.30*	.12	—	
4. Cumulative Credits	.40*	.71**	.16	—

Note: Coefficients are significant at * $p < .05$. ** $p < .01$. $N=108$.

Conclusions

Families who home school their children should not feel that the education they are providing is inferior to the traditional K-12 education of their neighborhood peers.

Although not statistically significant, the average first-year GPAs, credits earned in the first year, ACT Composite test scores, and ACT English, Mathematics, Reading, and Science and Reasoning subtests for home school graduates were all higher than traditional high school graduates. Although the sample was relatively small, the ACT Composite test score results for home school graduates was an average of 22.8, which matched identically to the national average in 2000 for home school students (ACT 2000). The national average for all students in 2000 was 21, which was nearly identical to the 21.3 average for the traditional high school graduate.

The academic performance analyses indicate that home school graduates are as ready for college as traditional high school graduates and that they perform as well on national college assessment tests as traditional high school graduates. The results of this study are also consistent with other studies on the academic performance of home school students compared to traditional high school graduates (Galloway 1995, Gray 1998, Jenkins 1998, Mexcur 1993). These results also suggest that a parent-guided K-12 education does not have a negative effect on a student's college success.

With the anticipated growth in the home school population, state policy makers, home school advocates, and the families who educate their children at home should also benefit from this study on the academic performance of home school graduates.

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