

Oberlin College Students' Performance on the GRE

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June 3, 2003

Assessing learning outcomes at Oberlin involves multiple methods. The Office of Institutional Research undertakes a regular program of surveying undergraduates at various points in their careers to gather data on both academic and social experiences. Alumni surveys are administered periodically to determine the extent to which their education, careers and civic engagements are congruent with our goals and objectives for students. Individual departments are requested to assess learning in the major using methods they believe are appropriate and provide useful information. Programs such as the Freshmen Seminars and the courses developed with support from the AIRE grant have developed their own assessment activities. Third-party sources of information such as the National Science Foundation Survey of PhD recipients are used to track post-Oberlin outcomes. Taken together, these activities are designed to assess the extent to which the goals and objectives for our students are being achieved.

Many of these activities rely on self-reports of gains in important knowledge and skill sets. Though a self-selected and relatively small population, GRE test-takers provide us with an independent, standardized measure of verbal, quantitative and analytical (general education) abilities of our students and the subject tests give us one indication of student learning in a major field. This report summarizes GRE test-taking from 1992 to 2003 using data obtained directly from the Educational Testing Service (ETS) and matches that data with student major and ethnicity from Oberlin's student records system.

Summary of General Tests

The number of Oberlin students taking the GRE varies considerably from year to year. Generally, the last four years have seen a decline, perhaps reflecting the documented trend of students delaying their entry into graduate school. There is some variation across years in the scores that, for the verbal and quantitative portions, is weakly correlated with test year (-.06 and .05 respectively). This means that the verbal scores are seeing a very slight downward trend while the opposite is true for quantitative scores. We do not have score data for peer institutions but the percentiles provided by ETS tell us how Oberlin students perform relative to the entire GRE test-taking population. The correlation between *percentiles* and test year for the verbal and quantitative portions are not statistically significant, meaning that relative to the population of GRE test-takers, Oberlin's scores are not declining. The correlation between test year and the analytical scores, though slightly positive is not statistically significant but the correlation with the analytical *percentiles* is negative and significant. The performance of Oberlin students on that portion is weakening slightly over time relative to the test-taking population. Because these percentiles are re-calculated every year, identical scores for different years may have different percentiles associated with them.

Test Year*	Number	Verbal	Percentile	Quantitative	Percentile	Analytical	Percentile
1992	157	627	80.6%	634	64.0%	642	72.8%
1993	331	620	79.5%	631	63.4%	644	72.6%
1994	187	626	81.1%	628	63.3%	643	74.1%
1995	127	630	83.1%	638	65.8%	665	76.4%
1996	27	591	74.6%	635	65.3%	644	70.6%
1997	214	610	81.6%	621	64.3%	643	70.5%
1998	212	593	77.4%	628	64.1%	629	67.7%
1999	109	582	74.5%	615	62.4%	629	66.2%
2000	92	617	82.5%	648	65.8%	631	67.1%
2001	80	643	86.2%	663	67.3%	651	70.2%
2002	114	605	81.2%	653	62.1%	655	70.3%
2003**	23	628	84.9%	685	68.4%		
Total	1673	615	80.3%	633	64.1%	642	71.2%

*1996 was transition year from paper reports to electronic distribution

Most cases were lost in that transition

**Analytical portion was dropped in October, 2002

Since we do not have a stated goal for GRE performance, it's difficult to judge the extent to which these scores and percentiles demonstrate success. Given the population however, one might assume that scoring in the 80% in the verbal section is impressive and clearly represents the strength of our students taking the test. One might also express some concern over the relative weakness in the quantitative section though an earlier study using peer institution scores showed that Oberlin's performance on this section was comparable. Nonetheless, since the primary objective of assessment is to improve the educational program and because surveys consistently show that Oberlin's self-reported development of quantitative skills is lower than those from peer institutions, improvement in this area may be a target of opportunity.

Matching the general test records with Oberlin data¹ shows expected variation in the sections of the test across division of major. We see greater variation when breaking the scores down by ethnic groups.

General Tests	Number	Verbal	Percentile	Quantitative	Percentile	Analytical	Percentile
OC Major							
Humanities	533	622	82.4%	616	59.9%	630	68.0%
Social Sciences	423	609	79.8%	635	63.9%	654	73.1%
Sciences	592	602	79.3%	688	76.3%	671	77.9%
Other	106	622	83.7%	623	61.9%	642	71.2%

¹ 77% of the records were successfully matched using Social Security number

General Tests	Number	Verbal	Percentile	Quantitative	Percentile	Analytical	Percentile
Ethnicity							
African American	64	500	54.5%	524	40.8%	519	43.0%
Asian American	101	570	72.3%	646	66.8%	624	66.9%
Latino	54	540	64.1%	585	53.7%	565	52.5%
White/Other	1004	624	83.5%	649	67.5%	666	76.3%
Foreign	44	544	63.4%	671	71.7%	598	62.8%

The first thing to note in these tables is that science majors are over-represented in the population of test-takers. In other words, they are more likely to take the GRE than students majoring in other divisions. We also note that the biggest difference in scores and percentiles across major are in the quantitative and analytical sections with science majors out-performing other majors rather significantly. The differences in the verbal section are much more modest.

Differences across ethnicity are striking and similar to the differences we see in SAT scores. Indeed, GRE scores are highly correlated to SAT scores, much more so than they are to Oberlin GPA.

Correlations	Verbal	Quantitative	Analytical	Subject
SAT Verbal	0.65	0.31	0.41	.33
SAT Math	0.42	0.63	0.54	.36
OC GPA	0.35	0.23	0.27	.33

Subject Tests

About twenty-nine percent of Oberlin GRE test-takers also take at least one of the subject tests. These tests are scored differently from the general test with a maximum of 990. Therefore the percentile distributions become even more important in understanding our student's performance on these tests. Again, there is variation across years but no statistically significant correlation.

Subject Tests

Test Year	Number	Score	Percentile
1992	54	660	67.6%
1993	101	650	70.5%
1994	79	607	68.0%
1995	29	652	68.8%
1996	4	703	69.8%
1997	62	646	66.6%
1998	42	660	67.2%

(cont.)

Subject Tests

Test Year	Number	Score	Percentile
1999	30	635	63.8%
2000	32	648	56.4%
2001	28	634	53.7%
2002	22	664	65.5%
2003*			
Total	483	644	66.3%

**No Subject Tests Reported*

It is of course important to understand how our students perform on the individual subject tests rather than simply report the averages for all of the tests together. Within subject tests we see great variability in the scores and percentiles. We should note this but not jump to the conclusion that poor performance in a particular test means that students are not learning as much in those areas as others. It is possible that the material covered in the test is in some ways different from the material covered in the Oberlin department. If this is not the case, faculty in low scoring areas may wish to review how the material is covered and identify methods to assess learning directly in the classroom.

Individual Subject Test Scores for All Years

	Number	Score	Percentile
Bio-Chem/Molec Biology	27	527	52.0%
Biology	74	700	72.5%
Chemistry	36	686	54.7%
Computer Science	26	730	74.5%
Economics	7	741	74.7%
Education	1	680	N/A
Geology	14	566	48.4%
History	8	543	66.9%
Literature in English	75	588	68.3%
Mathematics	28	825	61.0%
Mathematics Re-scaled	4	673	62.3%
Music	63	559	66.0%
Physics	42	656	47.0%
Political Science	3	537	74.0%
Psychology	77	659	81.2%
Sociology	2	530	78.5%

Monitoring Oberlin student performance on the GRE is only one, incomplete way to assess student learning. It is not one of our stated goals that Oberlin students shall do well on the GRE exam and performance should not be viewed in that light. However, the GRE is one method among many that helps us understand how well prepared academically our students are as they are about to graduate from Oberlin.