25 Years of GRE Scores and Graduate Enrollments by Discipline, Sex, and Ethnicity
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Background

The Graduate Record Examination (GRE) is a high-stakes test of developed cognitive abilities. Undergraduate students who aspire to graduate school are often recommended and sometimes required to take the GRE, or at least to know such as the LSAT or MCAT, for admission. Several lines of research have established these tests in valid measures of cognitive ability and strong predictors of subsequent success. For example, performance on the GRE is strongly tied to performance on other measures of cognitive ability (Bogie, Llinis, & Saccuzzo, 1988; Fau, Shrum, & Schrum, 2001). The GRE’s strong ties to other measures such as the SAT and ACT, which itself predicts obtaining a doctorate, working tenure, and getting patents (Bogie, N. B., Wehbe, N. L., & Bleske-Rechek, 2006), the GRE is likely to predict high intellectual achievement. At least, the GRE is a strong predictor at levels in both masters and doctoral programs (Kuncel, Vea, Severt, & Heskett, 2006), as well as for GRE, GMAT, GPR, GPRy, and GPA (Kuncel, 2002) as well as GRE scores (Kuncel, & Heskett, 2001), and even belief (Kuncel, N., & Heskett, 2001).

Although the GRE is just one of many predictors of exceptional achievement (i.e., emotional stability and conscientiousness forecast a variety of positive outcomes; Roberts, Nunnally, Weiss, Conley, & Goldberg, 2007), there is substantial rationale for its use in higher education admissions decisions. Large-scale databases and meta-analytic evidence suggest that cognitive ability tests in general do not exhibit predictive bias, are not substantially affected by motivation in high-stakes tests, and demonstrate strong predictive utility even after controlling for sociodemographic diversity (Tobias, S. M., & Connolly, 2008). See recent articles (Bleske-Rechek, 2010) and other recent reports released by ETS.

Graduate education itself is typically viewed as the path by which the U.S. will maintain, global competitiveness and a capacity for innovation (Wendel, Bridges, Nita, Raddick, Rodin, & Mahoney, 2008). Students who take the GRE represent the pool of intellectual talent aspiring to study at the graduate level. Thus, we compiled the current set of data to determine how scores on the GRE have changed over time. We compare GRE scores and graduate enrollment patterns by sex, ethnicity, and disciplines to better understand the flow of intellectual talent into graduate education.

Materials

We obtained GRE and score data from the Educational Testing Service (ETS) technical reports released for the periods of 1982 through 1999, and 2000 through 2010. We retrieved enrollment and demographic reports from reports released by the National Center for Education Statistics (NCES) and the National Center for Education Statistics. The following websites hold a variety of reports from ETS and CGS: http://www.ets.org/gre/research http://www.cgsnet.org/Default.aspx?tabid=177

Results

Across Years, Students in Engineering and the Physical Sciences Score the Highest on the GRE, and Students in Education Score the Lowest on the GRE

Despite Small Increases in Performance on the GRE-Verbal for Some Disadvantaged Groups, Ethnic Gaps Persist

Table 1: Median Scores on the GRE-Verbal and Quantitative, by Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>GRE-Verbal Median</th>
<th>GRE-Quantitative Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>161</td>
<td>832</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>159</td>
<td>828</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>154</td>
<td>798</td>
</tr>
<tr>
<td>Education</td>
<td>149</td>
<td>775</td>
</tr>
</tbody>
</table>

Discussion

Overall, the data compiled here suggest slowly decreasing GRE-V scores and increasing (although presently stagnant) GRE-Q scores. The fact that all groups have shown increases in GRE-V scores since the 1980s, and that some historically disadvantaged groups have shown increases in GRE-V scores as well, suggests that we can increase test participation without producing lower scores overall.

Women’s GRE scores lag behind men’s, and the gap has persisted from year to year. At the same time, however, women’s representation in many areas has increased, and in some cases doubled, since 1986.

Overall, the data show how the GRE-Quantitative has increased for some groups, but not all. Furthermore, some groups have seen increases in GRE scores, but not in GRE-Quantitative scores. Additionally, some groups have seen decreases in GRE scores, but not in GRE-Verbal scores.

Conclusion

A recent national education plan of education, prepared jointly by the Educational Testing Service and the Council of Graduate Schools, defined introductory work (p. 6). “Our comprehensive plan is to ensure that every child begins life with the best possible chance to achieve their full potential.” Indeed, this opportunity is not only a key to maintaining intellectual diversity, but also to increasing diversity in our schools and universities. This is particularly true for underrepresented minorities, who are more likely to be recruited from low-income families and have less access to educational opportunities.

References


Trends and profiles: Statistics about GRE general test examinees by gender, age, and ethnicity

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