

# data Views

November 2005

## How Well Does the GRE General Test Predict Success for Chemistry Students?

Many validity studies of the GRE General Test provide predictive information in terms of correlation coefficients or percent of the variance accounted for. These values are not merely difficult to interpret; they are likely to be misinterpreted because predictors that apparently account for a small percentage of the variance may actually be highly important from a practical perspective. Admissions committees might be better served if they could see a comparison of success rates among students with high and low GRE General Test scores.

A recent study provided this comparison to show the value of the GRE General Test as an indicator of first-year graduate grades (FGPA) for Chemistry students.<sup>1</sup> Results show that students in the top GRE quartile<sup>2</sup> are much more likely to earn grades in the top quartile. In Chemistry, 34% of the test

<sup>1</sup> Full details of the study, including descriptions of the datasets and analyses, are available in Bridgeman, B., Burton, N., & Cline, F. [Understanding What the Numbers Mean: A Straightforward Approach to GRE Predictive Validity](#) (In press). This study sorted students into a bottom quartile, a top quartile, and a middle 50%.

<sup>2</sup> For the purposes of these descriptive analyses, the Verbal and Quantitative scores have been summed. The GRE Board and Program recommend that these tests not be summed when making decisions about individual applicants. See the GRE Web site ([www.ets.org/gre](http://www.ets.org/gre)) for more details on appropriate score use.

takers in the high GRE quartile earned a high FGPA, but only 15% of those in the low GRE quartile had a high FGPA. For those in the low GRE quartile, 37% had a low FGPA, compared with only 15% in the high GRE quartile.

Analyses shown in Figure 1 also show how GRE General Test scores improve on undergraduate GPA (UGPA) information. Among students in the bottom UGPA quartile, those with high GRE scores earn higher grades, on average, than those with low GRE scores. And among students in the bottom GRE quartile, those in the top UGPA quartile get higher grades than those in the bottom UGPA quartile.

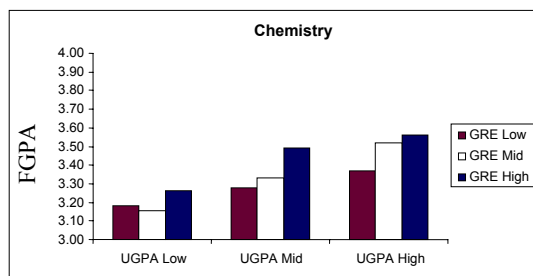


FIGURE 1. Mean FGPA in chemistry departments by UGPA and GRE quartiles

Figure 2 shows the percentage of students with a 3.8 FGPA for high and low GRE quartiles within high and low UGPA quartiles. This figure addresses the question of whether GRE General Test scores help predict who might get a 3.8 or higher. If the GRE General Test adds nothing to UGPA, then the two left-most bars should be the same height, indicating that low UGPA quartile students with high or low GRE

scores are equally likely to excel. Similarly, if the two right-most bars were the same height, it would suggest that for high UGPA students, GRE scores do not matter. But

GRE scores do appear to matter. For Chemistry students, there are differences at both low and high UGPA levels.

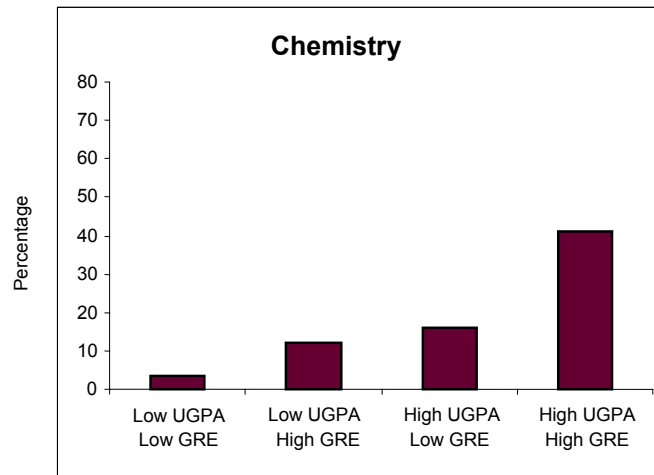


FIGURE 2. *Percent of students earning a 3.8 FGPA in chemistry departments by UGPA and GRE high and low quartiles*

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## Summary

The basic conclusion of this study is that GRE General Test scores improve on UGPA information. Even within a UGPA quartile, students with high GRE General Test scores are markedly more successful than students with low scores. Because all of the analyses were on students who were already admitted and enrolled, they probably understate the

value of the test scores. The researchers recognize that other criteria, such as graduation rates and professional productivity, are equally or more important than FGPA, and the analysis approach used in this study could be easily adapted to these other criteria.

