ETS GRE

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A Comprehensive Review of Published GRE® Validity Data

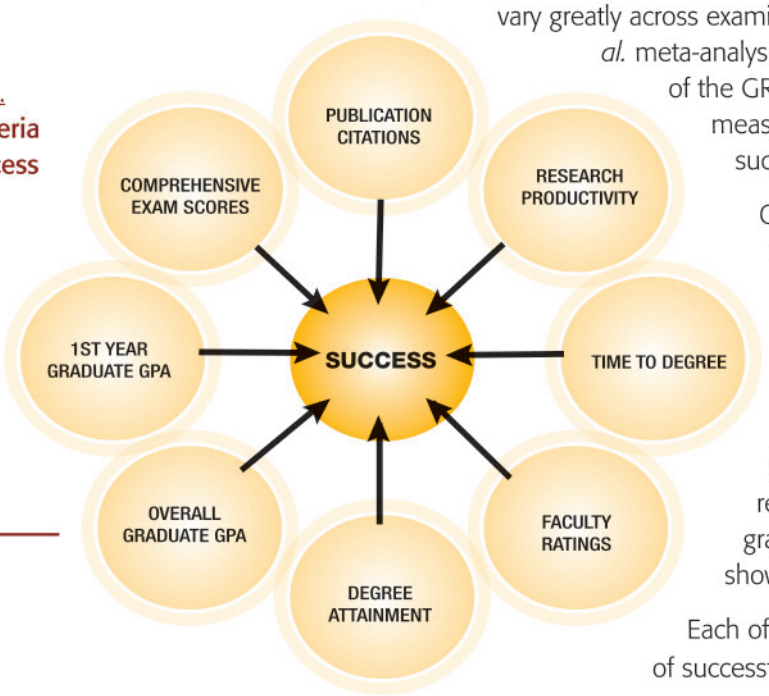
ASSESS ABILITY. PREDICT PERFORMANCE.

A Summary from ETS

The *Graduate Record Examinations*® (GRE®) *General Test* measures skills that faculty and graduate deans have consistently said are essential to graduate school success. These skills of verbal reasoning, quantitative reasoning, and critical thinking and analytical writing are foundational skills for applicants to a U.S. graduate program, regardless of educational or linguistic background or country of origin.

Although the GRE Program has many studies of the predictive validity of the GRE *General Test* (which are available on the GRE website: **www.ets.org/gre**), a recent meta-analysis by non-ETS researchers Nathan Kuncel, Sarah Hezlett and Deniz Ones provides additional positive evidence of the relationship of the GRE *General Test* to various criteria of graduate school success.[1] This meta-analysis is important because predictive validity studies are often difficult to conduct for a variety of reasons (e.g., insufficient data, test scores or predictors of success that do not vary greatly across examinees). Compared with earlier research, the Kuncel *et al.* meta-analysis improved on these studies by examining the validity of the GRE *General Test* for multiple disciplines using multiple measures of success, and by addressing statistical artifacts such as range restriction.

Figure 1.
The criteria for success



One strength of the Kuncel *et al.* research is that the meta-analysis analyzed data from a very large data set involving more than 1,753 independent samples based on a pool of more than 80,000 students. In addition, the study looked at five predictors of success and eight criteria for success. The predictors included the three measures of the GRE *General Test* (verbal reasoning, quantitative reasoning and analytical reasoning), GRE *Subject Test* scores and undergraduate grade point average (UGPA). The criteria for success are shown in the figure to the left.

Each of these criteria can be considered a different dimension of successful performance in graduate school.

Results of the Kuncel *et al.* study

Results from this study show that:

1. The GRE *General Test* is a "generalizably valid predictor of first-year graduate GPA, overall graduate GPA, comprehensive exam scores, publication citation counts and faculty ratings."
2. The GRE *General Test* also correlates positively with degree attainment and research productivity.
3. The GRE *General Test* has better predictive validity than undergraduate grades or letters of recommendation.
4. The GRE *Subject Tests* are better predictors of success than either the GRE *General Test* or undergraduate GPA.

This meta-analysis study is important because these results apply across a range of intended academic majors, across native speakers of English and nonnative speakers of English, across traditional and nontraditional students and across master's and doctoral programs.[2]

1 Kuncel, N. R., Hezlett, S. A. and Ones, D. S. (2001). A comprehensive meta-analysis of the predictive validity of the *Graduate Record Examinations*: Implications for graduate student selection and performance. *Psychological Bulletin, 127* (1), 162-181.

2 The master's analyses can be found in "The Validity of the *Graduate Record Examination* for Master's and Doctoral Programs: A Meta-Analytic Investigation" by Kuncel, N.R., Wee, S., Serafin, S. and Hezlett, S.A. (In press) GRE Research Report. Princeton, NJ: ETS.

Validity of the Analytical Writing Measure

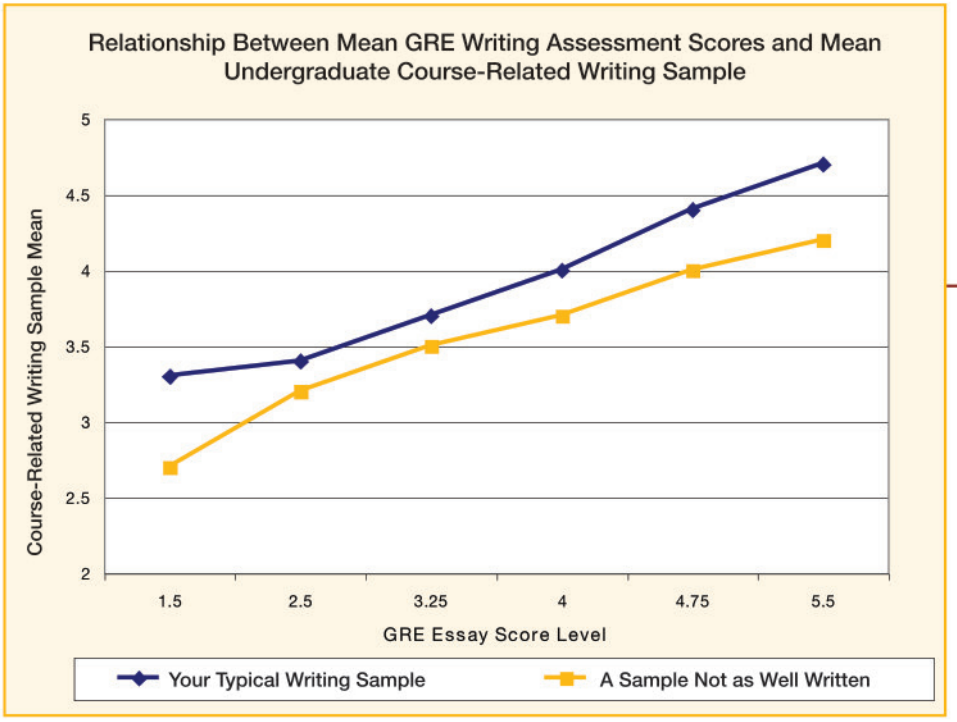
Because the Kuncel *et al.* meta-analysis was conducted before the Analytical Writing (AW) measure was introduced into the GRE *General Test*, it may be useful to include validity information for this measure. The two tasks that comprise the AW are both considered essential in many fields of graduate study. These two tasks are complementary in that the first requires the writer to construct his/her own argument about an issue, and the second requires a critique of someone else's argument by assessing its claims. For virtually all disciplines, AW adds value to the GRE *General Test* because it provides unique information about test-taker abilities over and above skills measured in the Verbal and Quantitative measures.

Demonstrating the construct validity of the writing measure can be done by showing how AW correlates with other measures it is intended to resemble. As an illustration, AW correlates positively with other samples of academic writing produced by examinees[3] as shown in the figure below. Examinees in this study were asked to provide two writing samples: one representing their typical written work and one not quite as well written.

This graph shows that there is a strong positive relationship between the GRE essay scores and both of the writing samples from examinees. It should be noted that the AW correlates with these other indicators of writing skill more closely than does the personal statement that many students submit with their applications.[4]

Furthermore, data indicate that AW has a low correlation (.21) with the quantitative measure and a moderate correlation (.60) with the verbal measure — a finding that is consistent with the structure and intent of those measures.[5] Thus, AW is providing unique and valuable information beyond the multiple-choice GRE *General Test* measures.

Figure 2.



Summary

Because faculty want to make the best possible admissions decisions about graduate school applicants, it is important to look objectively at the predictive value of the GRE *General Test.* The Kuncel *et al.* study used all existing data to arrive at the study's conclusions that the GRE *General Test* is a valid predictor of many criteria of graduate school success. In addition, other research has demonstrated that the Analytical Writing section of the GRE *General Test* can provide valuable information about applicants' abilities to produce analytical essays. For these reasons, the GRE *General Test* is a valuable asset in the graduate admissions process.

3 Powers, D.E., Fowles, M.E. and Welsh, C.K. (1999) Further validation of a writing assessment for graduate admissions. GRE Research Report 96-13. Princeton, NJ: ETS.
4 Powers, D.E., and Fowles, M.E. (1997) The personal statement as an indicator of writing skill: A cautionary note. *Educational Assessment, 4* (1), 75-87.
5 The correlation between the Verbal and Quantitative measures is .36.

For More Information

To get the most up-to-date information about the GRE *General Test*, please visit www.ets.org/gre or contact an ETS representative at (609) 683-2002.

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