

GRE

Graduate Record Examination

Topics

- What does the GRE measure?
- Interpreting and Using GRE Scores
- P&P versus Computerized: What's the Difference?
- Test Taking Strategies
- Reliability and Validity Evidence
- Culture, Fairness, and Subgroup Differences

What does the GRE measure?

- Analytical Writing (GRE-W)
 - Issue Essay (“Present Your Perspective on an Issue”)
 - Argument Essay (“Critique a Perspective”)
- The skills measured include the test taker's ability to
 - articulate complex ideas clearly and effectively
 - examine claims and accompanying evidence
 - support ideas with relevant reasons and examples
 - sustain a well-focused, coherent discussion
 - control the elements of standard written English

What does the GRE measure?

- Verbal Reasoning (GRE-V)
- The skills measured include the test taker's ability to
 - analyze and evaluate written material and synthesize information obtained from it
 - analyze relationships among component parts of sentences
 - recognize relationships between words and concepts

What does the GRE measure?

- Quantitative Reasoning (GRE-Q)
- The skills measured include the test taker's ability to
 - understand basic concepts of arithmetic, algebra, geometry, and data analysis
 - reason quantitatively
 - solve problems in a quantitative setting

GRE Scores

- Three scores are reported on the General Test:
 - a **verbal reasoning** score reported on a 200-800 score scale, in 10-point increments
 - a **quantitative reasoning** score reported on a 200-800 score scale, in 10-point increments
 - an **analytical writing** score reported on a 0 to 6 score scale in half-point increments.
 - Average of two raters for each essay
 - Two essay ratings then averaged and rounded up

What does the score mean?

- GRE Score = (z-score)(100) + 500
- Z-score = $(X - u) / s$
- If you score 1 SD above the mean, your GRE score would be 600
- If you score 2 SD below the mean, your GRE score would be 300

GRE scores in the admission process

- Do NOT rely solely on the GRE to select students
- Do NOT use combined or total scores
- Do NOT report only mean GREs of accepted applicants
- DO use other pieces of information, such as:
 - Relevant coursework
 - GPA
 - Letters of recommendation
 - Personal statement
 - Interview
 - Research experience
- DO conduct validity studies

P&P versus Computerized

- P&P and CAT GRE scores are comparable (i.e., equated) ($r = .97$, Mead & Drasgow, 1992)
- Scores are calculated differently, but interpretation is equivalent
- $P\&P = \# \text{ correct}$
- CAT is a function of:
 - $\# \text{ Items answered correctly AND}$
 - Item difficulty

P&P versus Computerized

- P&P Content
 - Everyone answers the same questions varying in difficulty, content, and question type
 - 76 V; 60 Q; 2 essays (argument and issue); test items under development
- CAT Content
 - Each person answers unique items based on:
 - the statistical characteristics (including difficulty level) of the questions already answered
 - the required variety of question types
 - the appropriate coverage of content
 - 30 V; 28 Q; 2 essays (argument and issue); test items under development

CAT GRE Test Taking Strategies

- Educated Guessing? YES
- Rule of First 5
- There's no going back...and no skipping
- Pace yourself
- Towards end, answer as many as possible
- But, don't blow it at the end either 😊
- Be happy if the questions keep getting harder
- Concentrate more if they start getting easy

P&P GRE Test Taking Strategies

- Leave no question unanswered
- Feel free to change answers (although first choice is usually correct)
- Record all answers in test booklet – If it's not there, it doesn't count

Reliability and Validity – GRE W

- Discriminant Validity, $r (W \& Q) = .02$
- Convergent Validity, $r (W \& V) = .55$
- Reliability
 - Alpha = .87
 - Inter-rater (Issue) = .59
 - Inter-rater (Argument) = .73

Reliability and Validity – GRE V & GRE Q

Predictors

	U	V,Q	V,Q,U
Mastery of discipline	.21	.52	.55
Professional productivity	.25	.46	.53
Communication Skill	.23	.46	.50
G-GPA	.32	.40	.49

Reliability (10 yr. test-retest) = .86

Avg. gains: GRE-V = 40 points GRE-Q = 17 points

Culture, Fairness, and Subgroup Differences

- Exhaustive Review of
 - Item Content
 - DIF Statistics
- Have to look at which programs students are applying to
 - Ex: men traditionally go into math/science grad school programs; women gravitate towards social sciences and humanities
 - Therefore, not surprising that men score higher than women on the GRE-Q

Non-traditional students

- 1st generation college students
 - Perform more poorly on GRE-V and GRE-Q
 - Why?
 - More motivation at home
 - More resources (e.g., Kaplan, no need to work)
 - Higher income (better educational opportunities)
- Older students
 - GRE-V & GRE-W do not change with age
 - GRE-Q decreases over time