8-2012

Ineffective Psychometric Testing: GRE Test Administration

Brittney Dawhn Perry
Western Kentucky University, brittney.perry428@topper.wku.edu

INEFFECTIVE PSYCHOMETRIC TESTING: GRE TEST ADMINISTRATION

A Thesis
Presented to
The Faculty of the Department of Architectural and Manufacturing Sciences
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science

By
Brittney Dawhn Perry

August 2012

INEFFECTIVE PSYCHOMETRIC TESTING: GRE TEST ADMINISTRATION

Date Recommended 7/17/12

Mark Doggett

Greg Arbuckle

Dan Jackson

8/23/12

Dean, Graduate Studies and Research Date

I dedicate this thesis to my parents and sibling, Vincent, Paula, and Tyra Perry. They were a huge inspiration on the idea behind my thesis. I also dedicate this work to my professor Mark Doggett, who helped greatly in editing this manuscript and my best friend Marisah Henderson for making sure I completed this goal.

TABLE OF CONTENTS

List of Figures……vi

List of Tables……vii

Abstract……viii

Chapter 1……1

Introduction……1

Statement of Purpose……4

Significance of Research……5

Problem Statement……6

Hypothesis……7

Limitations……7

Assumptions……8

Definition of Terms……8

Chapter 2……9

Review of Literature……9

GRE Foundation……9

GRE Structure……13

GRE Methods……20

Summary……24

Chapter 3……25

Methodology……25

Procedure……25

Instrumentation……27

Participants……30

Overall Findings……32

Chapter 4……34

Overall Findings……34

Participants……34

Response Bias……34

Descriptive Findings……35

Summary……44

Chapter 5……47

Summary……47

Data Interpretation……48

Conclusion……51

Appendix……53

References……92

LIST OF FIGURES

Figure 1. Education Pays……3

Figure 2. Managerial Experience.....36

Figure 3. Employer Survey Test Content….....39

Figure 4. Student Survey Test Content….....39

Figure 5. Student Survey Time Constraint……41

Figure 6. Student Survey Question Bias….....42

Figure 7. Student Survey Test Administration….....42

Figure 8. Student Score Reflection……46

Figure F1. Male vs Female.....65

Figure F2. Wave Analysis……65

LIST OF TABLES

Table 1. Typical Computer-Based GRE General Test……15

Table 2. Variables, Research Questions, and Items on Employer Survey……..32

Table 3. Survey Distribution……34

Table A1. 3-Year Graduation Rates by GRE Total Score Graduate Students Entering Fall 2003 to Fall 2008……54

INEFFECTIVE PSYCHOMETRIC TESTING: GRE TEST ADMINISTRATION

Brittney Perry August 2012 94 Pages

Directed by: Mark Doggett, Greg Arbuckle, and Dan Jackson

Architectural & Manufacturing Sciences Western Kentucky University

The effectiveness of the GRE was measured through a mixed-methods study. Quantitative data was studied to determine a relationship between GRE scores and the completion of higher education. Students and employers were surveyed to clarify a link between the content the GRE measures and the skills that are needed in graduate school and the workforce. In addition, students were asked if test administration, time-constrained questions, and question bias had any effect of their GRE score. Together, these findings were inconclusive and do not suggest that the GRE is effective or ineffective in its measurement of potential graduate students in relation to test content, test administration, and question bias, time-constrained questions, and the accurate measurement of psychometrics.

Keywords: psychometrics

Chapter 1

Introduction

The Education Testing Service (ETS) prides themselves upon their mission, vision, and values. Their mission is to advance quality and equity in education, with a vision of becoming the global leader. They value social responsibility, equity, opportunity and quality. Founded in 1947, the organization's sole purpose is to become the only institution with a focus on education research and assessment that affects the progress of education in the United States (Educational Testing Service, 2011).

Since 1986, America's colleges and universities have trusted and adopted the use of standardized tests. They have accepted the brand ETS has established and welcomed standardized tests, such as the Graduate Record Examination (GRE), as a means for measuring the academic intelligence of graduate level students, but this particular test could be flawed (Educational Testing Services, 2010). Validity is a concern in standardized testing. For example, Camacho and Cook asserted that standardized tests provide an outcome based upon test-taking ability rather than the skills needed to be a successful student (2007).

In high schools, teachers have re-aligned their lessons and curriculum to accommodate for the standardized test given at the end of the year. They prepare each student for the types of questions asked and how to answer them strategically (Camacho & Cook, 2007). GRE preparation books can be compared to these high school teachers in a sense because they too are used to

inform a potential test taker on how to answer each question (Princeton Review, 2008).

ETS stated that the GRE was designed to measure reasoning, verbal, and quantitative skills that a student gains over time and are not specific to any particular subject area. The fact that a majority of the preparation books are dedicated to how to take the test versus ideas on how to recall the information means that there is more to the test than just measuring acquired knowledge. "It is important that test takers be thoroughly familiar with the test – its contents and procedures- before the actual testing day, in order to avoid receiving lower scores than they might otherwise have obtained" (Educational Testing Service, 2008, p. 4).

Thorndike, as cited by Kandel, agreed with Camacho and Cook that entrance examinations focus on the measurement of test-taking ability rather than knowledge obtained over the years. His example concluded that a student could fail a college entrance examination and quickly turn around and pass that same exam. This example provided evidence that the result was due to coaching and had nothing to do with an increase in knowledge capacity (Kandel, 1971, p. 60). This is an issue because the GRE is used to gage whether test takers have the academic background needed to succeed in higher education (Educational Testing Services, 2010).

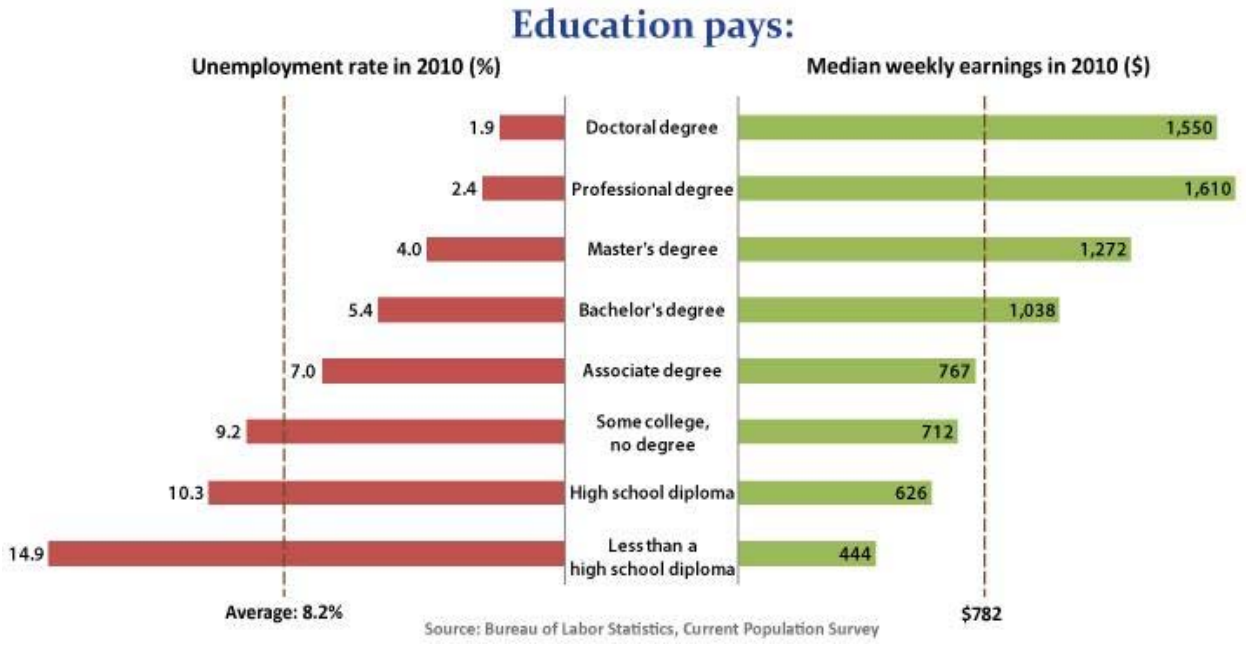


Figure 1. The connection between higher education, salary, and the likelihood of unemployment.

Figure 1 shows that higher education has a direct relation to salaries and job security in the workforce, which is essential to pupils as well as educational institutions. Since higher education is so influential in the financial success of an individual (United States Department of Labor, 2011), it is important for institutions to accept only students who are capable of completing a graduate level degree. It is imperative for universities to know if an applicant for graduate school has the ability to handle the workload. This causes institutions of higher learning to put a high value on GRE scores because ETS claims that if scores were low, the student would not succeed in their first-year of graduate school; however, they admit that in this same document that this statement has not been proven statistically (Educational Testing Service, 2008).

In addition, other research done by ETS stated this exam does not provide evidence in relation to changes in level of attainment (Educational Testing Service, 2008) and may have no relation to actual deeds and genuine accomplishments (Sacks, 1999, p. 292). What are the causes of these flaws in the GRE?

Statement of Purpose. The purpose of this two-phase, sequential mixed methods study was to attempt to clarify a link between GRE scores and their ability to determine psychological variables such as intelligence and aptitude through user feedback (Farlex, 2011). In the first phase, the relationship between a student's GRE test scores and higher education was explored through quantitative research (Creswell, 2009, p. 122). The Educational Testing Services website served as the standard for what the GRE measures. Actual test scores from Western Kentucky University (WKU) graduate applicants showed that the scores do not have a direct correlation to graduation rates. The results did not display that higher scores increased the likelihood of the student graduating or vice versa. They did show that scores ranging from 960-1520 have around a 50% success rate (Office of Institutional Research, 2011). Data can be found in Appendix A. Information from this first phase was explored further in a second qualitative phase.

In the second phase, qualitative surveys were given to elucidate the knowledge, skills, and abilities expected in a highly sought after employee. This helped determine if the KSAs the GRE measures are a part of the academic background needed to prosper in higher education and ultimately, the workforce.

This was defined by asking employers detailed questions about the KSAs needed for their particular industry. In addition, surveys were given to past test-takers. The survey measured the test-takers' perception of the GRE related to the measurement of their academic success. The reason for the qualitative research in the second phase was to better understand and explain the relationship between test scores and their interpretation of academic success (Creswell, 2009, p. 122).

Significance of Research. Previous research dealing with the flaws of the GRE explored the accusation of this type of testing to be culturally biased, meaning that standardized tests are more beneficial for some cultures over others. Researchers were interested in finding the connection between test takers' score and demographics along with their social status (Bugbee, 1996). In this approach, they defined the association of test scores as the black-white achievement gap due to 84 percent of black children growing up in seriously disadvantaged neighborhoods compared to the five percent of white (Baran, 2010; Sacks, p.22-25,1999). This problem occurs in all methods of testing, but is more prevalent in computer-administered testing (Schaeffer, Bridgeman, Golub-Smith, Lewis, Potenza, & Steffen, 1998).

In addition to cultural bias, validity has been a focal point in ETS research as well. ETS believes that validity lies in the security of test items. A test-taker is given three options in their test administration: Paper-and Pencil (P&P), Computer-based Test (CBT), and Computer Adaptive Testing (CAT). CAT was a method introduced by ETS and has a function that P&P and CBT do not have;

which is item modeling. This allows questions to be pulled from a pool of items giving them a variance in appearance. This is used to fix the overexposure of test questions introduced by the P&P based testing and CBT (Educational Testing Service, 2008).

This research is significant is because, unlike other studies, it addresses the validity of the test, but in relation to the foundation, structure, and methods of GRE administration, not the test items themselves. The operational definitions of these three parameters follow. Foundation addresses the general use of standardized testing by providing researchers' opinions on the definition of intelligence, how to measure it, and test content. Structure refers to specifics of the GRE: timed test section and question bias. Method concentrates on to test administration, which is a different form of the test (P&P, CBT, and CAT). Thus, the issue addressed with the GRE is not *what* it measures, but *how* it measures (Educational Testing Service, 2008).

ETS places a questionnaire at the end of an examination and base a portion of their improvements on these results. Bugbee stated that by this time in the exam, students are experiencing test fatigue (1996) causing individuals not think thoroughly in their response. In addition, ETS customizes the questions to suit their immediate needs and goals (Schaeffer et al., 1998). Conversely, this research focused more on test-takers who volunteered to give their personalized feedback regarding the GRE rather than those who were pressured to answer the specific questions ETS wanted to know the answers to.

Problem Statement. ETS (2011) stated that GRE test scores provide a common measure for evaluating applicants on the types of skills that have been identified as critical for success in graduate and business school. Since success is dependent upon the person and their definition of it, ETS defined success to relate to only certain skills (Educational Testing Service, 2008). These skills are defined by ETS as verbal reasoning, quantitative reasoning, critical thinking and analytical writing — skills that are not limited to a specific field of study, but critical to all of them. In a study by Davenport and Prusak, employers described KSAs to include: communication ability, reasoning skills, critical thinking, and knowledge transfer (p. 88). The problem with the GRE is not in regard to what they are testing, but it lies in the foundation, structure, and method of the GRE used to provide the common measurement of evaluating applicants (Kandel, 1971, pp. 27-34).

Hypothesis. The GRE is ineffective in its assessment of testing potential graduate students due to foundational, structural, and methodological issues. Foundational issues include definition of intelligence, psychometrics, and test content. Structural issues involve time-constrained questions and question bias. Methodological concerns relate to test-taking approach.

Limitations.

1. This study will not include the results of the Revised General Test started in 2011.
2. The majority of study participants will be located in Tennessee, Indiana, and Kentucky.
3. Only the GRE will be studied.
4. Subjects interviewed are between the ages of 25-64.

Assumptions.

1. Statistics found are accurate.
2. Participants can accurately explain their GRE test-taking experience.
3. The validity of the GRE is a legitimate concern to others.

Definition of Terms.

1. Psychometrics – psychological measurements such as intelligence (Farlex, 2012)

Chapter 2

Review of Literature

"The standardized tests in which Americans have placed so much trust have not proven to be particularly trustworthy indicators of individual human potential. In a word, they've been awful" (Sacks, 1999, p. 201). Although the cultural bias of these tests has been a long-time contributor to their awfulness, there is another factor that is often overlooked (Baran, 2010). It is the assertion of the researcher that the lack of trust stems from the foundation, structure, and methods of the tests. These tests are appalling because a clear understanding of how to measure mental ability or even if it is possible to measure mental ability has not been reached (Kandel, 1971, p. 28).

GRE Foundation.

Definition of Intelligence. Alfred Binet was an inventor of the first intelligence test and the basis for his test was using school-related tasks to indicate future school achievement (Kandel, 1971, p. 28). Binet believed that in order to measure academic performance, the level of natural intelligence has to be determined (Sacks, 1999, p. 25). Natural intelligence is the abilities a child acquires at school, but it also has a lot to do with what is learned at home. The main focus in natural intelligence is language (Sacks, 1999, pp. 22-25).

Other researchers disagreed with Binet and decided that testing general intelligence instead of natural intelligence would provide a more accurate measurement. The problem is that the researchers could not agree upon a common definition of general intelligence. Charles Spearman and his partner

Francis Galton, experimental psychologists, insisted that intelligence was based upon a general concept that relates to all mental activity (Linden & Linden, 1968, pp. 15-16). This means that intelligence is a guiding principle that relates all activities and functions to one another (Spearman, 1904). On the other hand, Thorndike and others believed that there is no one factor that determines mental capability. Mental activity is contingent upon several mental abilities, more specifically 120 abilities. Thorndike did not identify all 120 abilities, but rather assumed they existed by using factor-analysis (Linden & Linden, 1968, p. 16).

Although there is no sign of agreement on a definition of intelligence, a common factor in each researchers' opinion was that intelligence relates to mental ability. The problem here is an individual's mental ability, along with ambition; application, home advantages, and health are different (Kandel, 1971, p. 28). Based on Charles Darwin's research and Galton's results, these factors are all naturally selected making intelligence an inherited trait (Sacks, 1999, pp. 17-19).

Psychometrics. Psychometrics is defined as the measurement of intelligence (Farlex, 2012). Binet's goal was to succeed at psychometrics by finding defective kids and ostracizing them from the "normal" kids. To him, defective children were students that would hinder the more intelligent kids from learning and he wanted to eliminate that by placing all students in the same "mental age" classroom. For example, a defective child at age six has a mental age of four and therefore would not be allowed in the classroom amongst the other six year olds that are progressing as scheduled (Sacks, 1999, pp. 22-25).

To decipher between defective and non-defective, an Intelligence Quotient (IQ) test of around thirty tasks would be given to a student on a one-on-one basis. The test lasted for forty minutes and focused on verbal and language skills. The test administrator also asked students to identify objects in pictures, repeat number sequences and sentences, and compare weights (Sacks, 1999, p. 23).

Although highly criticized, the Binet-Simon scale, used to determine the mental age of individuals, is still used today (Sacks, 1999, pp. 22-23). Arthur Otis decided to build upon this already flawed system by developing a measurement of academic success that could be given to a group of people at one time. This added more confusion, causing more questions to arise. How can one specific test be given to a plethora of students when uniformity in pupils does not exist? (Kandel, 1971, p. 28). Is the idea of standardized testing an automatic failure because of the foundation it is based upon?

Although research on intelligence testing shows that psychometrics is a difficult concept, ETS attempted to fix this problem by narrowing down the testing criteria. They still wanted to measure intelligence developed over time, and developed core values to help in the assessment. They believed reasoning skills, critical thinking, and the writing ability are all critical to the success of a graduate student (Educational Testing Service, 2008).

Test Content. ETS designed the GRE to measure only a portion of reasoning, verbal, and critical thinking skills that a student gains over time. They chose those parameters because they are not specific to any particular subject

area. The Analytical Writing section assesses critical thinking skills by measuring the ability to articulate, focus on a main point, and analyze. Although ETS stated that they do not measure specific knowledge (Educational Testing Service, 2008), in order to critically think about a situation, an individual should have some background knowledge on the information (The Critical Thinking Community, 2011).

In the verbal section, examinees are expected to write about three different subject areas: humanities, social sciences, and natural sciences. The test analyzes written material to determine a relationship between words and concepts. Other subjects tested in the GRE are algebra, geometry, and data analysis. In these areas, reasoning abilities are measured. It is important to know if the examinees can actively solve a problem in a quantitative setting (Educational Testing Service, 2008).

The ranking of importance stems from the foundation of standardized testing. It is important to society that abilities are measured so that individuals are provided with opportunities that are consistent with their abilities. Hundreds of group-administered tests have been developed, published, and sold, yet standardized testing remains a mystery on whether it is a worthwhile tool (Sacks, 1999). Despite lack of commonality in the definition of intelligence and inability to clearly understand psychometrics, standardized testing is here to stay. It is important to determine whether or not the content tested on the GRE is a positive tool in determining academic success.

GRE Structure. The second issue with the GRE is its structure. The use of time-constrained sections and the way the questions are worded are all geared for the benefit of the examiners rather than examinees. In the greater scheme of things, standardized testing is a big business and it is prospering at the expense of its clientele (Sacks, 1999, p. 102). For example, in order for a student to be accepted into a graduate program, grade point average (GPA), letters of recommendations, professional experience, etc. have to be considered. The GRE cannot be used alone as an admissions qualification, yet it is still widely used and highly respected (Educational Testing Service, 2008).

"Americans take anywhere from 143 million to nearly 400 million standardized tests yearly for *education alone…"* (Sacks, 1999, p. 221) It is also safe to say that the amount of tests printed would accommodate at least two tests per year for every man, woman, and child in the United States making standardized testing a fast-paced business (Sacks, 1999, p. 221).

To assist with the pace of this business, standardized testing is slowly moving away from paper-and-pencil (P & P) examinations. Now examinees have the option to complete a computer-based test (CBT). Although this provides an expedited scoring process, the cost of content production has increased significantly due to the new methods introduced by computer adaptive testing (CAT) (Bejar, Lawless, Morely, Wagner, Benett, & Ruvelta, 2002). To help lower the costs, ETS allots a certain time frame per testing section and utilizes a new development in CAT testing called automated item generation (Bridgeman, Cline, & Hessinger, 2003).

Automated item generation was introduced in 1990s and it "…can be thought of as a procedure for instantiating isomorphic items- items that contain comparable content and are exchangeable psychometrically" (Bejar, Lawless, Morely, Wagner, Benett, & Ruvelta, 2002). It replaced the idea of manual item writing, which was a costly and time-consuming process. This process entailed similar items to be reviewed and formatted individually. Algorithms however, automated this method by designing a well-specified set of rules that instinctively create a large pool of test questions. Now the computer can generate test questions in a feasible amount of time (Geerlings & Glas, 2011).

Time-Constrained Sections. Time is of the essence for the ETS organization and effective use of it is important. ETS stated that the time constriction on the GRE is needed for two reasons. First, is to determine speed of performance to measure construct of interest and second, for administrative convenience. As of now, it is unknown whether the time constraint is more beneficial to the examinee or the business of standardized testing (Bridgeman et al. 2003, p.6).

Test sections consist of Analytical Writing, Verbal Reasoning, and Quantitative Reasoning. There is also a research section and a section of the GRE that are unscored. The difference between the two is that the research section is always at the end of the test, but the unscored section could be anywhere throughout the test. Table 1 shows the general layout for the GRE (Bridgeman et al., 2003).

Table 1

Typical Computer-Based GRE General Test

Section	Number of Questions	Time
Analytical Writing	1 “Issue” Task	45 minutes
	1 “Argument” Task	30 minutes
Verbal Reasoning	30	30 minutes
Quantitative Reasoning	28	45 minutes
Unscored	Varies	Varies
Research	Varies	Varies

With the Analytical Writing section, the student is allowed forty-five minutes to complete the “issue task”. In this time frame, he or she is expected to choose one of the two topics, think about the issue he or she has chosen to write about, plan a response, compose the essay, and review their writings. The writing should portray a discussion based upon complex ideas and the understanding of different point of views. Students who do not work swiftly have the disadvantage of not being able to take a few minutes at the end of the Issue task to check for obvious errors. ETS does not let occasional spelling or grammatical errors affect the score; however, persistent errors will cause a decrease in score (Educational Testing Service, 2010).

The same rules apply when writing about “views” on a particular argument. The only difference is the time limit. The ETS organization asserted the Argument task could be completed fairly quickly in comparison to the “issue task”. Test takers are allotted thirty minutes to read and analyze an argument,

determine a view, thoroughly plan the essay, express their beliefs, and review the writings (Educational Testing Service, 2010).

The goal of the "present your perspective on an issue" task is to “assess the ability to think critically about a topic of general interest by clearly expressing thoughts in writing”(Educational Testing Service, 2010, p. 5). Test-takers are expected to choose their view on the topic and apply it to the situation. The problem with this goal is that of the two topics given to the test takers, one would actually interest them. It was stated earlier that no two pupils are alike (Kandel, 1971, p. 28); therefore, there will be some students taking the GRE that have to write about a topic that does not intrigue them or may not be familiar to them at all.

Here is an example of an issue topic given in the GRE, “In our time, specialists of all kinds are highly overrated. We need more generalists—people who can provide broad perspectives" (Educational Testing Service, 2010, p. 8). In order to contribute successfully to this issue of discussion, the test-taker needs to have a prior knowledge on how a generalist and a specialist each affect society. Not knowing this information might cause them to use more time thinking of an answer rather than writing a response and would hinder their score (Educational Testing Service, 2010).

In addition to the timed writing sections, the multiple-choice questions are timed as well. A test-taker has thirty minutes to answer 30 questions regarding verbal reasoning and forty-five minutes to answer 28 quantitative reasoning questions (Educational Testing Service, 2011). “Taking these often high-

pressure, high-stakes tests presents, if not overwhelms, students with numerous questions and four-to-five times as many choices accompanied by time constraints. When the correct answer is not immediately identified, many students guess randomly or choose blindly" (Blackey, 2009, p. 53).

Completion of each section is something that test-takers strive for which can cause their answers to be rushed or speeded. This occurs when test-takers rush to answer all the questions towards the end of the allotted time. This causes scores to be affected by the time limit; however, the impact depends on which method the examinee is using to take the test. For example, a study conducted by Wild, Durso, & Rubin verified that allowing one-and-a-half times the standard time limit on the P&P examination provided examinees an average of 25 extra points on the 200-800 GRE scale (Bridgeman et al., 2003).

ETS researchers, Bridgeman, Cline, and Hessigner (2003), conducted a study to determine the effect of extra time on the CAT. They found that a one-and-a-half time on the CAT has a minimal effect in this type of test administration. One could argue that their study was subjective. To choose participants, they coerced women and minority to participate in their study by offering them money. Their instructions were as follows:

> It is important for our research that you try to do your best on this section. The sum of $250 will be awarded to each of the 100 individuals testing from September 1 to October 31. These awards will recognize the efforts of the 100 test takers on the research section. Only test takers who meet the following criteria will be eligible for the award. Awards will be given to those 100 test takers who score the highest on questions in the research section relative to how well they did on the preceding scored sections. In this way, test takers at all ability levels will be eligible for the award. Award recipients will be notified by mail (Bridgeman et al., 2003).

Participants were used to determine the effect time has on the CAT version of the examination. Results stated that the GRE quantitative and verbal sections on the CAT version of the exam showed no signs of being highly speeded. One-and-a-half times the standard limit seemed to have a minimal impact on overall scores. This may not be true to individuals that are neither women nor a minority (Bridgeman et al., 2003). As a result, it is still unclear as to whether extra time on the GRE can be beneficial to an examinee.

Question Bias. Another problem, in addition to timed questions, is the wording of the questions. The validity of the test may be suspect because of how the questions are asked. In other words, there are different ways to present a test-question; author's style or an editor's style. The difference between the two is that authors are individualized. They have their special way of presenting their own thoughts and emotions. Editors, on the other hand, follow rules. They abide by a consistent use of punctuation, abbreviations, and citations; which means they expect nothing other than a uniform and attractive format. The way the questions are presented is important, because it easier for a test-taker to follow a more uniform question versus one that is written in a creative way (Osterlind, 1998, p. 161).

The way the questions were presented leaned toward an author's style and allowed for one answer to be correct. In the following example, the correct answer is Set 1. If any other answer choice was chosen it was incorrect and counted against the examinee's score. However, it could also be perceived as a

reasonable matter of opinion regarding intelligence versus a student's intelligence level based upon factual data. Here is the example:

When the house is on fire, what must one do?

- Set 1: *Call the fireman- Telephone.*
- Set 2: *Save oneself. – Run into the street – One must run so as not to be burned*
- Set 3: *One must get away. – One must put out the fire* (Sacks, 1999, p. 23).

The way multiple-choice questions are worded may put a limit on an examinee's ability. Multiple-choice questions inhibit creativity, originality, and imaginative thinking (Blackey, 2009). They cause users to pick from choices rather than creating an answer themselves. GRE analogy multiple-choice questions are a great example on how the test limits creativity and imaginative thinking because test-takers are not allowed to use their own ideas to complete the analogy (Research & Education Association, 2008).

Questions containing the phrases "the BEST answer," "the MOST important," "the MAIN point," or "the LEAST important" confuse readers. The confusion causes the question to be more difficult because they are asked to compare answer choices. Although one choice may be a correct answer, there is a possibility of another answer choice being more appropriate (Blackey, 2009). Here is an example:

17. The author of this article can be best described as which of the following?

    (A) Pessimistic

    (B) Unconcerned

    (C) Indifferent

(D) Resigned

(E) Optimistic (Research & Education Association, 2008)

In this example, the examinee is asked to choose the “best” answer. This type of wording is more difficult because readers may be unclear of what exactly is being asked and become confused. To answer this question correctly, students are required to compare each answer choice and then compare it to the article. When creating these questions the author is looking for the examinee to understand the material on a more sophisticated level (Blackey, 2009). This is not a simple task given the time requirements for critical analysis.

The way the GRE is structured emphasizes measurement of test-taking strategy rather than potential academic success. The time-constrained sections causes students to rush their responses and not think through answers clearly. The way the questions are worded are biased if they are written to confuse the reader. Before taking the GRE, it is important for students to study the structure of the test. They need to develop a strategy that helps them select among answer choices in order to improve their score (Blackey, 2009). The researcher’s assertion is that if a test is measuring knowledge, test-taking strategy should not be necessary.

GRE Methods. There are three ways to take the GRE: P&P, CAT, and CBT. P&P is a traditional method, the CAT is considered the most effective, and the CBT is considered as the computerized version of the P&P (Bugbee, 1996). Paired comparisons have been made between each of the methods. It is important that these tests are analyzed together because the GRE is offered in

each format and colleges and universities use the scores interchangeably (Schaeffer et al., 1998). What are the differences between each method, but more importantly, how are they valid?

Researchers (Bugbee, 1996; Schaeffer, 1998) stated that computer based tests and paper-and-pencil tests provide the identical test questions presented exactly the same, but still produce different results. This conclusion derived from several studies. To eliminate this, Bugbee suggested the instructions on the P&P test and CBT be differentiated; however, this may not be the reason for the different results. The cause of the variance stems from computer illiteracy, computer screen capacity, graphics, dimensionality of the tests and its items, but mainly computer anxiety (1996).

One study verified the difference between P&P and CBT; it was shown that computer anxiety was the main issue. Seventy-five percent of the college students chosen to participate in this study either strongly agreed or agreed that testing by computer was more challenging than the conventional method. A second study involving naval pilots showed how CBT negatively affects the confidence level of examinees (Bugbee, 1996).

By the 1990s, a third study showed that computer-based testing had grown to be a successor to paper-and-pencil examinations. Although perceived as more difficult, students chose CBT over P&P due to flexibility. CBT gives students a wider availability of test dates due to a greater number of testing centers for computer administered testing. ETS has limited the number of testing locations for economical reasons; however, they also acknowledge that long

travel may affect scores. Test developers, and administrators prefer short travel distances for examinees (Bugbee, 1996).

These studies above assert that the CBT offers a lot of advantages to the user. For example, the CBT format brings examination security and the flexibility. In addition, test-takers are pleased on how swiftly they can receive their scores. Even though CBT is preferred, the National Center for Fair & Open Testing wrote a two-page cautionary review in 1992, stating that CBT has equivalency and technical problems that need attention. ETS issued a report showing nine unresolved problems with the GRE. Bugbee (1996) said, “Simply automating bad tests does nothing to solve their long-standing problems and may actually compound them” (292).

Compounding on errors seems like normal activity of the testing industry. First, tests were created without a common conception on the definition of intelligence and if psychometrics was possible. Next, CBT was created to improve on an already flawed P&P testing system. Now, CAT is used as an improvement to CBT by having the ability to analyze the test-taker while taking the test. The GRE General CAT was introduced operationally in November 1993, a year after the report by the National Center for Fair & Open Testing (Schaeffer et al., 1998).

In 1995, ETS conducted a study using a total of 30 college campuses that allowed chosen students to (a) take the GRE free of charge, (b) cancel their scores if not pleased, and (c) receive their scores in an expedited fashion. Score

statistics showed that mean CAT scores were higher in the verbal, analytical, and quantitative than that of the P&P (Schaeffer et al., 1998).

The way CAT works is that it contains a pool of test questions, which supplies items that are calibrated through item response theory. “Based on those calibrations, an estimate of ability is obtained and the next item is chosen, in part, based on that estimate” (Bejar et al. 2002, p.3). So as the student answers each questions, their ability is being assessed. It is considered to provide flexibility in test administration while avoiding overexposure of test items (Geerlings & Glas, 2011, p. 337).

The idea of item response theory, also known as item modeling, personalizes each test in a sense, but the kinks are still being worked out here as well. Although this test is offered right now, research is still being done to verify the validity of the exam. Questions have been raised on whether item response theory is geared toward keeping the test secure by offering numerous questions versus bettering itself psychometrically. The problem researchers are having is determining the different test items placed in the pool provide the same amount of difficulty (Stocking & Lewis, 2000).

The GRE is administered in three different ways and scores on the exams are used interchangeably. ETS looks at each new development of test administration as an improvement in standardized testing. CAT solidifies test security through item modeling and provides the same amount of difficulty as a P&P examination (Educational Testing Service, 2011). Other researchers

disagree and state that there is a difference in the method of examination (Bugbee, 1996). This study will determine a difference through user feedback.

Summary. Graduate and professional institutions in the states of California and Washington have dropped affirmative action in admissions due to the ineffectiveness in predictive validity of the GRE. This decision was derived from the consistency in low performance on the GRE of minority applicants. They believe this test is discriminatory (Burton & Wang, 2005); however, this is not the only reason the GRE should be minimized in its role of determining the academic ability of higher education applicants.

The review of literature showed flaws in predictive validity as a result of foundational, structural, and/or methodological issues. Foundational issues showed that standardized testing was built upon an erroneous foundation. There is no formal definition of intelligence and this means that psychometrics tests do not to have a concrete idea of what to measure. The foundational issue that referred directly to the GRE is test content. It is a possibility that the content the GRE measures is lacking an important aspect in success at a higher level.

The GRE structural issues included time-constrained questions and question bias. This aspect of the GRE causes scores to reflect more on the strategy chosen to complete the exam, versus the knowledge level of the examinee (Research & Education Association, 2008). GRE methodological issues are concerns in test administration. The scores on the P&P, CBT, or CAT are used interchangeably at higher institutions, but the method chosen by an examinee could have a negative affect on their score (Schaeffer et al., 1998).

Chapter 3

Methodology

Procedure. This study was developed under the postulation that the GRE is ineffective in its assessment of testing potential graduate students due to foundational, structural, and methodological issues. As a result, the GRE does not determine whether test-takers have the academic background to succeed in higher education. Success in graduate school, in this case, is defined through completion of a degree. To prove this, first a commonality of a problem with the GRE had to be identified based upon scores. In this study, the value for GRE scores is a result of the correlation between test scores and graduation rates. The scores provided quantitative evidence showing that examinees scores have little to do with success in graduate school (Office of Institutional Research, 2011).

It was clear, based on one higher education institution, that GRE scores have minimal value because they are not a good indicator of higher education degree completion (Office of Institutional Research, 2011). The next step was to gather information from participants on the inaccuracy of the GRE. Foundational issues were addressed first. It was the assertion of the researcher that questions asked on the test were not measuring skills that are critical to success in graduate school and ultimately, the workforce (Educational Testing Service, 2008).

To test the hypothesis, surveys were given to employers. The purpose of this survey was to determine if the ineffectiveness of the GRE was a derivative of

the subject matter it chose to measure. If it does not measure the same qualities employers look for in potential employees, then what is the value of the GRE? This was important, because as stated earlier, higher education has a direct effect on success, in terms of salary, in the workforce (United States Department of Labor, 2011).

Surveys were the best choice as a data collection tool because they can be created and administered online. The cost is free and they are time efficient, which is crucial to a manager's time schedule. The convenience surveys provided increased the ability to record a vast amount of data due to the economy of design. Another advantage is that they permit anonymous responses, allowing respondents to answer freely. Once the survey is finished, an administrator can utilize the information immediately. The longitudinal design of the survey allowed the researcher to gather information using a pilot survey and then complete the actual survey (Creswell, 2009, p. 146). The pilot survey tested the software and the value of the questions before sending it to other professionals.

The pilot survey was sent to a total of 50 employers with an 84% response rate. Employers were chosen using the single-stage sampling procedure. The researcher gathered a convenience sample for the pilot survey and selected participants based upon email address availability. Upon completion of the survey, the employers were asked to forward the survey to other employers. Stratification of the questioned population was not known because the gender of

the participant was not mentioned in the survey. In addition, the location of the participants and their employers was scattered across the United States.

While waiting for responses from the pilot survey, the next step was to gather the examinees' perception of the GRE and compile the data. The purpose of this part of the study was to first determine whether the examinee saw a problem with the GRE. If so, was this issue in regard to foundational issues, structural validity or the method of administration. More specifically, did they believe changes should be made in regards to test content, time-constraint, question bias, and/or method of administration? A survey was chosen as the method of design over interviews because of the quick turnaround of results and economic reasons. The information gathered was cross-sectional. Once the email was sent out to qualified participants, they had a two-week time span to complete the survey.

Instrumentation. The survey was created using Qualtrics.com Survey Software. Qualtrics is a full service research software that was developed by Qualtrics Lab, Inc. It is available to Western Kentucky University students, faculty, and staff free of charge. The function of the software allows the user to create a survey using customized designs or logos. In addition, a link is provided that can be posted on a website, email, etc. Once the data is collected, it can be downloaded to an Excel sheet, Microsoft Word document, or saved as a Portable Document Format. Data can also be separated online, as needed, through the program (Western Kentucky University, 2012).

Employer questions asked for the pilot survey were as follows: (1) What is your position title? (2) How much experience do you have in a management position? (3) Please list additional skills/credentials you are looking for in an ideal employee. Other questions asked about specific issues. The first specific issue was subject matter. The issue was addressed using a table containing the subheadings: (1) analytical writing, (2) critical thinking, (3) basic concepts of arithmetic, algebra, geometry, and data analysis, (4) vocabulary, (5) reasoning skills, (6) willingness to extract knowledge from those who have it and, (7) communication skills. The questions were given a sliding scale 0% to 100%. For each subheading, employers were asked to indicate a value of skill expectations needed from their potential employee. The higher the percentage, the greater the value of skill needed in that particular industry. Each subheading was independent of each other; totals did not have to equal 100%.

To clarify the concern of time constraints and to see if the GRE is measuring the correct test content, two questions were asked. Employers had to rate three skills in order of importance for their particular industry. The skills were: (1) the rates at which the employee finishes a task, (2) experience level, and (3) grade point average. These skills were presented in the survey because the researcher was curious as to which traits employers valued the most. The expected answer was experience, GPA, and then task completion. Secondly, the employers related the level of importance in relation to stored knowledge, research ability, and time management.

Results from the pilot survey showed that there were some improvements that needed to be made to the survey before officially activating it. It was important to ask questions concerning gender, income levels, and education in terms of stratification. In addition, more open-ended questions needed to be added to decrease question bias and decreasing the amount of multiple-choice questions because they hinder creativity in answer choices. Detailed information concerning this change is shown later in the research. Despite the minor tweaks that needed to be made on the surveys, the results favored that the sections on the GRE are accurate in the skills they choose to measure. Thus, the problem was not what the GRE measures, but more how it measures it. A copy of the pilot survey is in Appendix B.

In addition to the administration of the survey, there were two revisions to the content. The first change added questions to help with research validity. Questions added were as follows: (1) What is your gender? Please select male or female (2) Please indicate highest level of education. A) Associates Degree B) Bachelors Degree C) Masters Degree D) Doctorate. These questions help the validity of the study by ensuring that the sample reflects a cross-section of the population (Creswell, 2009, p. 148).

The second change was made to decrease question bias. In the pilot survey, managers were asked to number, in order of importance, the rate at which the employee finishes a task, experience, and grade point average. Then they rated the level of importance in relation to stored knowledge, research ability, and time management. These questions were very similar in content and

they limited the participant on their actual opinion about what is an important trait in an employee. This problem was fixed by adding an open-ended question that asked managers to prepare a numerical list describing three essential characteristics looked for in an ideal employee. Revised survey has been placed in Appendix C.

Participants. After the function of Qualtrics.com survey was solidified, the first survey was released. The survey was set out to confirm the findings of the pilot survey. The difference between the pilot survey and the revised survey was the selection process for employer participants and the minor tweaks mentioned earlier that minimized question bias. Instead of emailing 50 participants across the United States, the survey was distributed through either e-mail or over the phone to 100 employers. The variance in distribution between the pilot survey and the revised survey stemmed from the ineffectiveness of the convenience sample and the effectiveness of a random sample.

All surveys for the pilot survey were distributed to personal email addresses; which made the sample convenient. On the other hand the random sample was not as fortunate. Due to privacy reasons, most employers email addresses are not located on their company's website. Employers were then contacted by phone, from there the survey was completed through an interview or the survey link was sent via a personal email address was provided from the employer.

Employers were located in the Tennessee, Kentucky, and Indiana area. These areas were strategically chosen based upon the applications of graduate

students at WKU. The data concerning GRE scores and graduation rates were related to a majority of students from the Tennessee, Kentucky, and Indiana area (Office of Institutional Research, 2011).

The employers were chosen using Research Randomizer (http://www.randomizer.org/), which is a random number generator. A list of 176 employers located in the Tennessee, Kentucky, and Indiana area was created using TopJobs. TobJobs is a website made available by the Career Service Center and WKU. The website list names and email addresses of companies located in that area that were copied and pasted into a Microsoft Word document (NACElink, 2011). From there, the names were numbered 1-176. In this study, 100 sets of numbers were generated using one number per set. It was confirmed that the number set remain unique and the numbers were not sorted and that they be viewed with no markers (Urbaniak & Plous, 2008). A list of selected employers can be found in Appendix D.

Since the quantitative data received earlier in the study was information relating to WKU's graduate applicants, interviewees were chosen based on two criteria 1. Participant's GRE score must be on file at WKU 2. Participants applied for graduate school between fall 2003 and fall 2008. Email addresses of the candidates were made available with the help of the graduate studies and human subjects office.

The survey was sent out via email to WKU graduate applicants only. Table 2 shows the relationship between test variables, research topic, and survey items. Appendix E shows the survey in more detail.

Table 2

Variables, Research Questions, and Items on Employer Survey

Variable	Research Topic	Item on Survey
Independent		
Foundation	Test Content	See Question: 5
Structure	Time-Constraint	See Question: 12
Structure	Question Bias	See Question: 13
Methods	Test Administration	See Questions: 7 and 8
Dependent Variable		
Psychometrics	Score	See Questions: 6 and 14
Control Variable		
Application Status	Application Status	See Questions: 9-11

Overall Findings. The procedure for overall findings can be broken down into four steps. The first step clarified the total number of participants who received an email versus the total number who completed the survey. These numbers included participants from both the employer survey and student survey; however, they were analyzed separately.

The second step determined response bias. Since there was not a 100% response rate to the surveys, it had to be decided whether the lack of participation from the nonrespondents had any impact on the data collected. To determine this, the wave analysis was used. Respondents had two weeks to complete the survey. At the end of every third day, responses were checked to see if the average response changed. “Based on the assumption that those who return surveys in the final weeks of the response period are nearly all nonrespondents, if the responses begin to change, a potential exists for

response bias" (Creswell, 2009, p. 152). Appendix F shows patterns in responses.

Step 3 was to provide a descriptive analysis to determine research validity of the study. Each survey was analyzed separately to determine if both surveys represented a cross-section of the population. One of the benefits to using Qualtrics.com Survey Software is that it automatically provides a descriptive analysis. The last step was dedicated to data interpretation. Data collected from the surveys were first analyzed separately, but for data interpretation, the results were combined. This helped determine whether the issue lies in the foundational, structural, or methodological layout of the examination.

The results from both surveys were broken down into five groups. The first group analyzed psychometrics. The second group studied the first independent variable measuring the foundational issue of test content. The third and fourth groups were used for structural issues such as time-constraint and question bias. Lastly, the fifth group evaluated the effect of test administration on test scores. This provided an indicator for determining the source for the ineffectiveness of the GRE.

Chapter 4

Overall Findings

Participants. This study involved two separate groups; the employers and the students. The first group consisted of 100 randomly selected employers and the second group of individuals who applied for graduate school at WKU in the years 2003-2008. Each group was distributed a separate survey. The survey given to employers concentrated on foundational and structural issues whereas the student survey focused on all three issues; foundational, structural, and methodological.

The employer survey was distributed to 100 employers via phone or email and received a 40% response rate. The student survey was distributed on a much larger scale. Table 3 gives a breakdown by year of how many students qualified to participate in this survey. The survey was emailed to all of the selected WKU graduate school applicants. Out of 7938 applicants, 503 responded. The response rate was 6.34%.

Table 3

Survey Distribution

First Graduate Year	*Number of Students*
2003	1688
2004	1511
2005	1304
2006	1135
2007	1143
2008	1157

Response Bias. In order to insure validity in the data collection process, a wave analysis was used (Creswell, 2009, p. 152). The wave analysis helped

determine what type of impact non-respondents had on the data. Each survey was closely monitored for two weeks. Every third day responses were recorded and analyzed to see if the responses developed a pattern.

The employer survey developed a very distinct pattern. Every third day, an average of seven people responded to the survey. As time went on, more men responded to the survey than women. Another pattern emerged on the test content section. The 80% that completed this question indicated a constant rising importance of analytical writing skills of an employee to an employer. Critical thinking skills also became more important as time went on, with the exception of days 10-12 of the survey. The wave analysis indicated the results would have been different for the employer survey given more participation. More respondents would likely have responded for increasing analytical writing and critical thinking skills. See Appendix F.

The same analysis was used on the student survey. Unlike the employer survey, the student survey's results did not change depending upon the number of respondents. Responses stayed consistent throughout the survey. If more individuals had responded to the survey, the results would have been the same. Thus, more student respondents would have little impact on the issues addressed in this research.

Descriptive Findings. This section presents the descriptive findings of the employer and student survey. Each survey was compiled separately and then combined later for the interpretation of results. The surveys' validity was examined to determine if both surveys represented a cross-section of the

population. The employer survey measured gender, occupation and managerial experience responses. The student survey measured gender, location, and application responses.

The employer survey was distributed to 100 employers and was completed by 40%. Out of the 40%, 56% of the respondents were male and 58% were female. Majority of the female respondents were either human resource managers or directors; whereas most male respondents were either vice presidents or recruiters for their company. The managerial experience level of both genders was about the same. (See Figure 1) This showed validity in the sample because gender variances in their responses compared to their experience level were very minute. The variety in the position titles was a positive because it represented managers on each level.

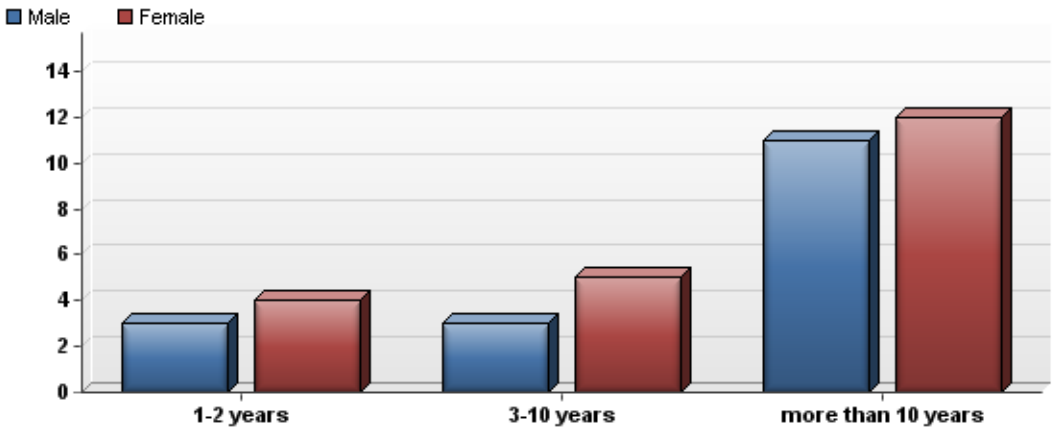


Figure 2. Managerial Experience. This figure shows the variance in managerial experience among male and female participants.

The sample for the student survey was not as well represented as the sample for the employer survey. Out of the 503 participants, 33% were males

and 67% were females. It was important to the validity of this student that participants were from the Tennesse, Kentucky, or Indiana area and had applied for graduate school at Western Kentucky University. Eighty-two percent of the respondents received their undergraduate degree from a school located in those states. Ninety-seven percent applied for graduate school at WKU.

In order to measure the variables outlined in the hypothesis, the responses from both surveys were analyzed first separately, and then together. The results from the employer and student survey were broken down into five groups; each group measured a different variable represented in the hypothesis. The first two groups addressed the foundational issues of psychometrics and test content. The third and fourth groups analyzed structural concerns such as time constraint and question bias. The fifth variable was methodological dealing with test administration.

GRE Foundation.

Psychometrics. Quantitative results referring to psychometrics can be found using Table A1 located in Appendix A. Table A1 provides data that relates GRE scores to graduation percentage. Next to the score is the number of individuals who attained that particular score. The table provides a percentage that indicates the success rate of those who achieved that score. In this study, success is measured through degree completion.

Data from the table showed that there were 8,194 people who applied for graduate school at Western Kentucky University during the years of 2003-2008 with the scores ranging from 286-1520. Out of those 8,194 applicants, 52.15%

completed graduate school. For those who did not graduate, 51% of those individuals scored a 950 or below and 42% scored a 960 or above.

In this study, 79% who participated in the student survey completed their degree from WKU. For those who did not, qualitative responses said that they either transferred to another college or university or they took a break from school. The last question on the student survey asked if respondents believed their score reflected their ability as a graduate student. Seventy-six percent responded that the GRE did not reflect their ability as a graduate student. The qualitative responses also confirmed this.

Test Content. Measuring the foundational issue of test content was a three-step process. The first two steps examined open-ended questions for the employers with the intention of defining the skills perceived essential in the workplace. The first question asked employers to identify the top three attributes they want in an employee. Results showed that employers are interested in communication, work ethic, and attitude. The next step was to see if employers listed any additional criteria that they would like to see in an employee. Criteria added were the ability to be a team player, self-motivation, an outgoing personality, and a willingness to learn.

Lastly, each employer and student answered an identical question pertaining to test content. The question asked the participant to determine a value that signified the importance of certain skills in the workforce environment. The responses are shown in Figures 2 and 3. The values of the skills did not collectively equal the value of 100. Results from both surveys showed that basic

arithmetic, algebra, geometry, and data analysis is perceived as the least significant skill needed by workers. On the other hand, communication skills were perceived as most needed with critical thinking skills not far behind. If more employers would have responded, critical thinking might have ranked the same as communication skills.

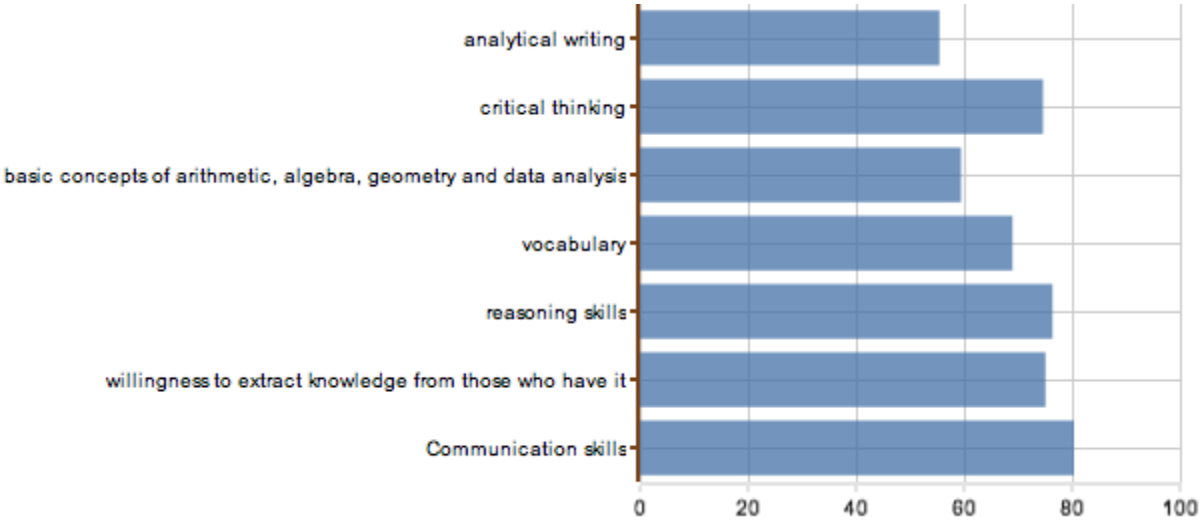


Figure 3. Employer Survey Test Content. This figure illustrates the respondents view on the significance of particular skills to their work environment.

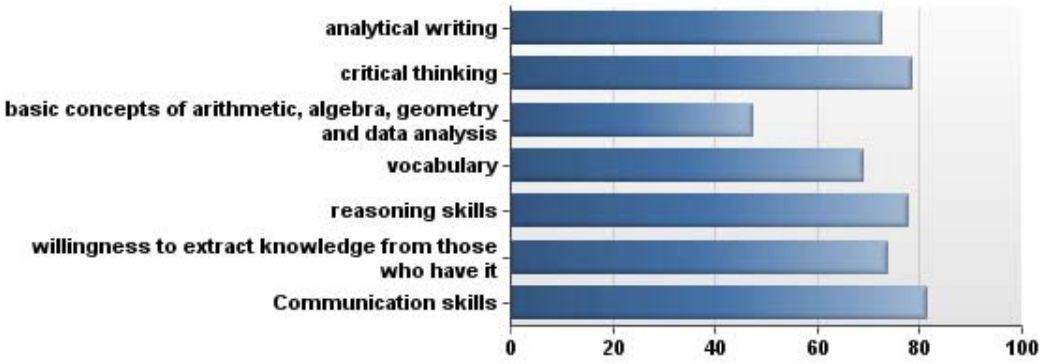


Figure 4. Student Survey Test Content. This figure illustrates the respondents view on the significance of particular skills to their work environment.

A summary of student qualitative responses showed that participants agreed that the math portion of the GRE was irrelevant to their degree and that the questions were not “basic”. They perceived the questions were relevant to math majors, but not for others. As far as communication and critical thinking being the top commodity to employers, results showed that managers might seek individuals who can think through problems and communicate the results effectively.

GRE Structure.

Time-Constrained Sections. A majority of respondents stated there was enough time allotted per question. Respondents believed that although the given time was enough to complete each question, there was not enough time to complete each section. One respondent shared “During my time in graduate school, I found that my analytical writing skills were far ahead of the other students. But I recall I needed more time to write the essays during the GRE test and was graded poorly for incomplete essays and at least one unstarted essay question, because I ran out of time.” Respondents complained on the lack of time to answer the math questions and how test fatigue caused them to speed through questions. They stated this impacted their score because it forced them to guess on some questions.

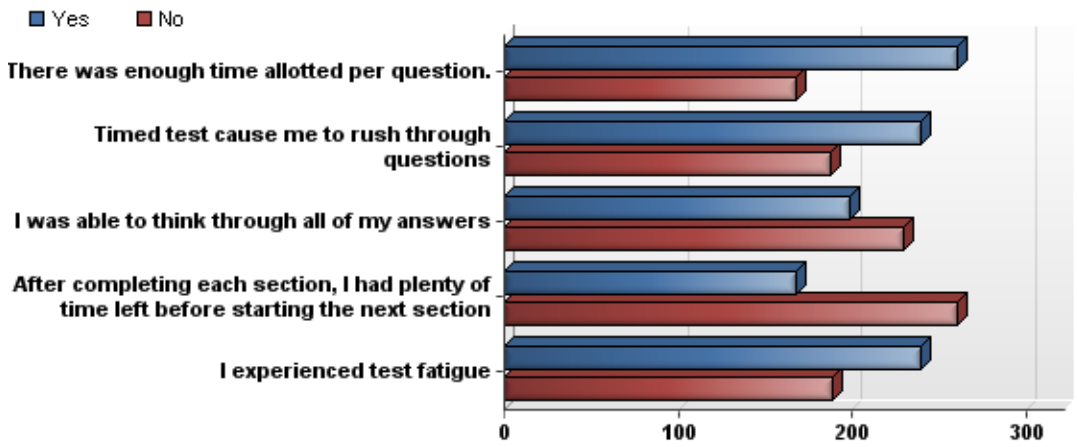


Figure 5. Student Survey Time Constraint. This figure shows how time affected the test-taker.

Question Bias. Qualitative data indicated that the vocabulary used on the GRE detered test-takers from selecting the correct answer. Their argument was that in a school environment a dictionary is available if the meaning of a word is unknown. On the other hand, the student survey asked questions referring to the clarity of questions and instructions and majority stated that the GRE did not have a problem in this area. This data is shown in Figure 6.

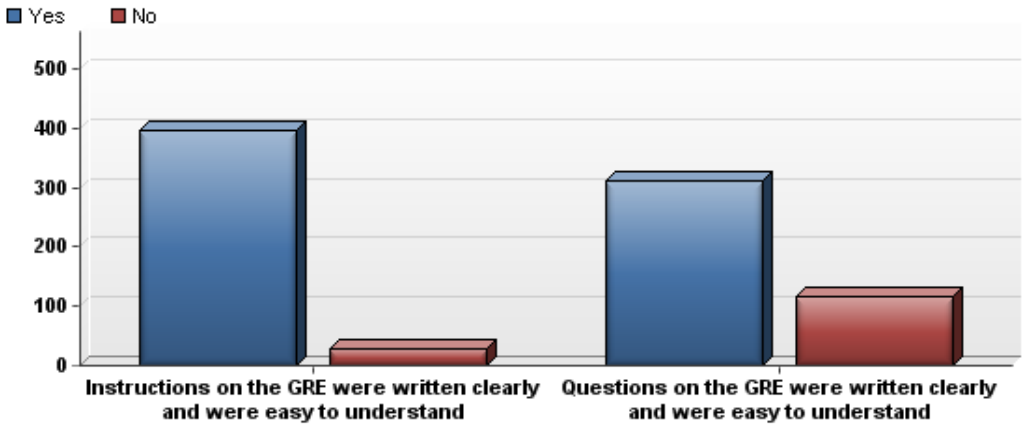


Figure 6. Student Survey Question Bias. The graph shows that wording on the

test did not confuse examinees.

GRE Methods.

Test Administration. The GRE is designed with the ability to be used interchangeably at the collegiate level. Figure 7 shows the usage of the test methods used in this study.

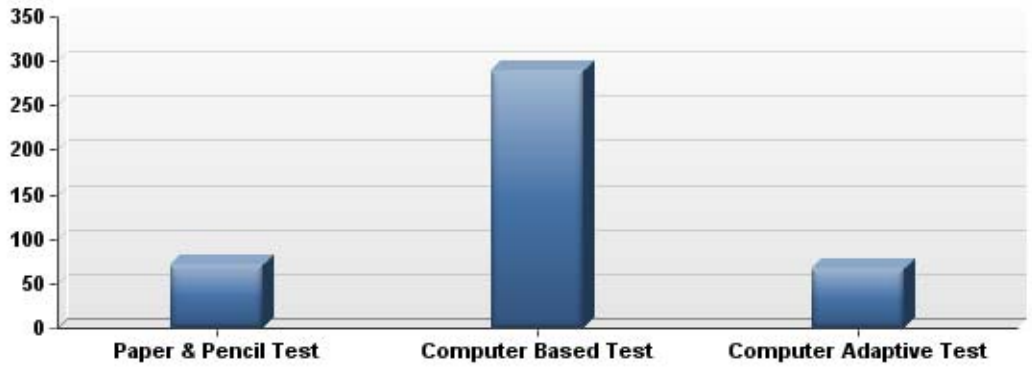


Figure 7. Student Survey Test Administration. This figure shows the methods the respondents used to take the exam.

The majority of the participants chose CBT as their form of test administration primarily based upon the convenience of location and availability. Respondents who took the GRE via P&P format did not have the option of either CBT or CAT. The same held true for users who chose to take the GRE using a CAT. They stated this was the only option available at the time.

P&P. The P&P test is the more traditional test offered by ETS and it was given to participants in the age range of 32-64. Eighty-five percent of them have completed their degree and have either completed doctoral school or have

obtained a job in the workforce. Sixty-four percent of this sample stated that the test did not accurately measure their ability to receive a master's degree and 67% agreed that the GRE was not accurate in measuring their academic success. Participants stated that one advantage to using this form of examination is the ability to skim answers and find questions that are relevant to each other. They believed this format provided the best resource to do so.

Their opinions on time did not differ from whole group's decision that there is enough time per question and not enough time per section. Their opinions on whether or not the timed test caused them to rush their answers or think through all their answers were fairly even. Collectively, this group did not state that the GRE reflected their ability as a graduate student. Although remembering this exam in its entirety was a challenge for this group, most described the test as worthless.

CBT. Survey respondents for the CBT examination ranged from the ages 27-54. This group had the same views as the P&P examinees; however, their views held greater weight because of the amount of respondents. For example, 71% of the CBT examinees stated that the test did not measure their ability to receive a master's degree and 74% said that the test did not measure their academic success. Most participants described this test as a waste of time and a moneymaking scheme. Test-takers from both the CBT and P&P described the GRE as worthless.

CAT. Majority of the survey respondents who took the GRE via CAT, were in the 23-37 age range. The responses from the CAT examinees were very

similar to the P&P examinees. Sixty-seven percent of them believed that the test did not measure their ability to receive a master's degree and 71% believed that this test did not measure their academic success. Although the participants did not give detailed information on the ineffectiveness of this format, they still agreed with the other groups on worthlessness of the exam.

Summary. Results from both the student survey and employer survey are inconclusive. The GRE measures analytical skills, critical thinking skills, basic math, vocabulary, and reasoning skills. Survey participants agreed that these skills are needed in the workforce as well as in higher education. On the other hand, it was stated from both employer and student survey participants that there are other important factors to consider when determining success.

The GRE is a timed exam and examinees stated that the pressure of the time caused them to rush through answers and not think through their responses clearly. This problem seemed to occur most in the writing sections and math sections. They also stated that the GRE does not consider those with test anxiety or other types of disabilities. However, they also stated that there was enough time allotted per question. Thus, the results are inconclusive.

According to the findings, question bias and test administration did not contribute to the perception that GRE scores are an inaccurate measurement. It was not how the exam was administered, time, or how the questions were written that was the problem. The problem lies in the perception by the students that the test is not an accurate measure of ability. Figure 7 summarizes the student's views on the subject. The question asked if they believed their score truly

reflected their ability as a graduate student and majority said no. Qualitatively, the GRE was thought by student respondents to be a money scheme. Raw data from the student survey can be found in Appendix G and raw data for the employer survey can be found in Appendix H.

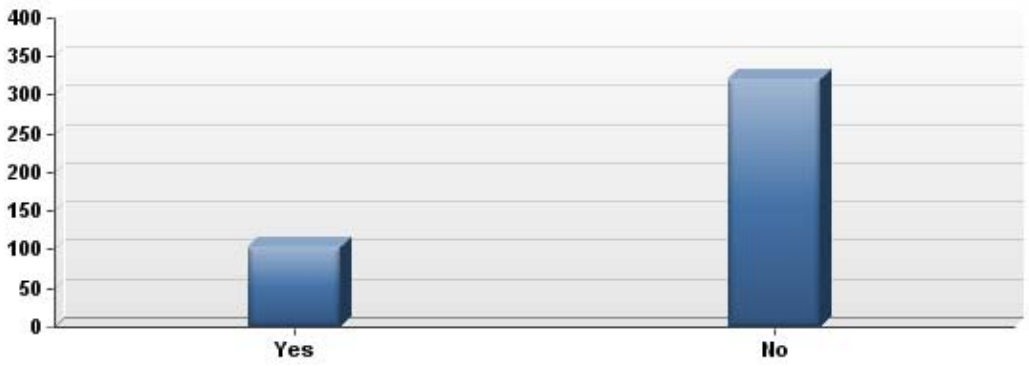


Figure 8. Student Score Reflection. This graph indicates that students do not perceive the GRE as reflective of their ability as graduate students.

Chapter 5

Summary, Data Interpretation, and Conclusion

Summary. The purpose of this study was to attempt to clarify a link between GRE scores and their ability to measure psychological variables such as intelligence and aptitude (Farlex, 2011). The hypothesis stated that the GRE is ineffective in its assessment of testing potential graduate students due to foundational, structural, and methodological issues. Foundational issues include issues include definition of intelligence, psychometrics, and test content. Structural issues involve time-constrained questions and question bias. Methodological concerns relate to test-taking approach.

According to this study, there is a perceived link between GRE scores and the measurement of intelligence exist, but with some reservations. The GRE measures potential academic success, but has flaws in measuring overall ability and potential for life success. On the other hand, question bias and test administration does not seem to hinder the GRE's effectiveness. Although some qualtiative responses from the GRE test-takers stated that the vocabulary used on the GRE detered them from selecting the correct answer, a majority stated that the GRE did not have a problem in this area.

The GRE is offered in three different formats: P&P, CBT, and CAT. Each test asks different questions, but is designed to provide the same results. In this study, results show that no matter what format is chosen to take the GRE, the test is perceived by students as an inaccurate assessment of one's overall abilities. Student respondents in this research perceived that the GRE was

ineffective in its assessment of their ability as graduate students, but the reasons for this perception are inconclusive.

Data Interpretation

The GRE is a test that was built upon the principal of psychometrics with a focus on progressing education in the United States (Educational Testing Service, 2011). Its function is to determine whether examinees have the ability to succeed in higher education. It is currently used worldwide as an admissions requirement for graduate and doctoral schools. A low score hinders an individual's chances of an opportunity to further their education (Educational Testing Service, 2008).

A test with that much influence should be close to flawless; however, this research indicates that it is perceived to have flaws. In order to improve the test, ETS conducts their own research on improving the GRE; however, they do not allow test takers to express their viewpoint directly on the exam. This study provided feedback from past test takers that compared their testing experience to their perceived ability as a graduate student and their success in the workforce. There are five major variables that the researcher relates to the ineffectiveness of the GRE: psychometrics, test content, time-constrained sections, question bias, and test administration.

GRE Foundation.

Psychometrics. Although a clear understanding of how to measure mental ability has not been reached (Kandel, 1971, p. 28), standardized testing has been an admissions requirement for many American colleges and

universities since 1986 (Educational Testing Service, 2010). Based on information gathered in this study, student survey users of the GRE did not feel that their score reflected their ability as a graduate student. Despite scores earned, participants said they have graduated, joined in the workforce, or furthered their education.

***Test Content*.** The GRE was designed to measure reasoning, verbal, and quantitative skills (Educational Testing Service, 2008, p.4). The results from Figures 2 and 3 showed that the content the GRE measures are valid. Although the math portion was close, no categories were ranked less than 50%. The employer survey also indicated that these skills are valued in the work place. The problem is there are many factors and skills to consider when determining academic success. Results showed that respondents perceived that there is more to success than what the GRE measures. Additional factors may include work ethic, communication skills, teamwork, attitude, and self-motivation.

Based on the results from the student survey, the GRE is perceived inaccurate in its examination of psychometrics because it is does not measure the additional factors needed to succeed beyond undergraduate school. One participant stated “Universities are rejecting their best students based on a score that has little to do with their profession and skills it takes to excel in the 'real' world.” This statement was also congruent with the responses from employers, because of they who placed a high value on skills such as work ethic, attitude, communication, and self-motivation.

GRE Structure

***Time-Constrained Sections*.** This section addressed the structural issue of time constraint and its diminishing effect on GRE scores. ETS stated that the use of time constraint on the GRE is in effect for two reasons. The first reason is to measure speed of performance in relation to construct of interest. This is relevant to exams in which the tasks are very simple, so differences can only be determined when using the speed of performance. The second reason timed testing is used is for administrative convenience (Bridgeman, et al., 2003, p.1). Data from the student survey inferred that the latter is perceived as more prominent reason.

The pressure of completing the examination in a certain time frame was perceived as detrimental to student's scores. Quantitative data showed respondents felt there was enough time allotted per question, but not enough time per section. Qualitative responses inferred that lack of time caused respondents to rush through answers and not think clearly. The majority of the respondents perceived this hinders the validity of the exam because with additional time, they would be able to figure out the answer. They also stated that standardized testing is not a form of examination that is used in their line of work. The conflicting responses render the findings inconclusive.

Question Bias. When developing an exam, the creator has options on how to word the questions. The questions can be written straightforward and easy for the reader to understand or they can be more creative causing the reader to really have to think to determine what the question is asking.

Participants in this study said they did not have a problem understanding the question nor did they have a problem reading the instructions. According to this study, question bias is not a concern for students.

GRE Methods. The GRE is administered in three different forms and each form is used interchangeably during the admissions process to a college or university. Any variance in test administration can cause an unfair advantage to potential graduates. In the student survey, each participant was asked identical questions despite their form of test administration. Towards the end of the survey, they identified which test method they chose and why.

Even though the respondents chose different forms of test administration, data from the survey was consistent. They all had the same perceptions. The responses to the questions did not change in reference to test method.

Conclusion

The GRE is an exam that measures the potential academic success in higher education of an individual. The hypothesis stated that the GRE was unable to do so based upon foundational, structural, and methodological issues. Based on the information gathered in this study, the hypothesis was neither rejected nor accepted, but considered inconclusive.

The foundational issues included test content and psychometrics. ETS designed the GRE to measure verbal and quantitative reasoning and analytical writing. Responses from both surveys stated the GRE measures those skills and that those skills are looked for in a potential employee; however, qualitative results from the employer survey list other factors as having a stronger relation to

success. The problem with those results is the lack of specification in the questions in the employer survey. If the questions were geared toward employees with complex job descriptions and managers of a higher level, would the results have changed? Therefore, results in this area are considered inconclusive.

Psychometrics was considered a problem area as well. Many qualitative responses said the GRE was an inaccurate measurement of their abilities. The structural issue of time-constrained sections seemed to be a factor in the perceived ineffectiveness of the GRE, but question bias did not. No matter what method chosen to take the exam, users thought it to be worthless.

According to this study, the GRE is neither effective nor ineffective in its assessment of testing potential graduate students due to foundational issues, structural issues, and methodological issues. Due to the inconsistency in responses from individuals and the lack of specifications in the employer survey, the study is inconclusive.

Recommendations for Future Study

As mentioned earlier, results showed that users perceive there is more to success than what ETS measures. Other factors may include worth ethic, communication skills, teamwork, attitude, and self-motivation. ETS does not disagree with this. In fact, their research supports it. ETS suggested using other material, along with the GRE, when considering applicants for higher education (Educational Testing Service, 2008).

What they do not provide in their research is the relative value of these

other factors to success. In this study, respondents stated that other factors are crucial to the completion of a degree and they are something that the GRE does not measure. Further study could assess how important these factors are to success and eventually how to measure them (Educational Testing Service, 2008). In addition, questions in future research surveys should be modified to ask about employers of management level and should be redirected towards the revised GRE.

APPENDIX A

Table A1

3-Year Graduation Rates by GRE Total Score Graduate Students Entering Fall 2003 to Fall 2008

	GRADUATE				
	N		Y		All
GRE Score	Students	%	Students	%	Students
.	1	25.00	3	75.00	4
286	.	.	1	100.00	1
295	1	100.00	.	.	1
304	.	.	1	100.00	1
420	1	100.00	.	.	1
450	1	100.00	.	.	1
460	1	50.00	1	50.00	2
470	.	.	2	100.00	2
480	2	50.00	2	50.00	4
490	2	50.00	2	50.00	4
500	5	55.56	4	44.44	9
510	6	85.71	1	14.29	7
520	8	88.89	1	11.11	9
530	9	75.00	3	25.00	12
540	5	71.43	2	28.57	7
550	11	68.75	5	31.25	16
560	8	50.00	8	50.00	16
570	13	68.42	6	31.58	19
580	15	60.00	10	40.00	25
590	19	73.08	7	26.92	26
600	17	68.00	8	32.00	25
610	21	55.26	17	44.74	38
620	24	52.17	22	47.83	46
630	35	56.45	27	43.55	62
640	39	63.93	22	36.07	61
650	43	75.44	14	24.56	57
660	32	62.75	19	37.25	51
670	40	54.79	33	45.21	73
680	36	53.73	31	46.27	67
690	50	51.02	48	48.98	98
700	43	44.79	53	55.21	96
710	51	48.11	55	51.89	106
720	72	59.50	49	40.50	12
730	53	49.07	55	50.93	108

	GRADUATE				
	N		Y		All
GRE Score	Students	%	Students	%	Students
740	65	50.39	64	49.61	129
750	66	54.55	55	45.45	121
760	82	52.56	74	47.44	156
770	69	45.10	84	54.90	153
780	75	51.02	72	48.98	147
790	81	55.48	65	44.52	146
800	82	50.62	80	49.38	162
810	80	51.61	75	48.39	155
820	89	47.59	98	52.41	187
830	89	52.35	81	47.65	170
840	74	43.79	95	56.21	169
850	78	46.43	90	53.57	168
860	97	53.01	86	46.99	183
870	91	50.56	89	49.44	180
880	95	51.63	89	48.37	184
890	100	50.51	98	49.49	198
900	82	53.59	71	46.41	153
910	81	49.39	83	50.61	164
920	96	50.26	95	49.74	191
930	75	42.13	103	57.87	178
940	85	52.47	77	47.53	162
950	77	50.00	77	50.00	154
960	81	49.39	83	50.61	164
970	65	40.37	96	59.63	161
980	72	47.06	81	52.94	153
990	69	42.33	94	57.67	163
1000	70	45.45	84	54.55	154
1010	69	46.31	80	53.69	149
1020	59	45.04	72	54.96	131
1030	63	44.37	79	55.63	142
1040	56	40.29	83	59.71	139
1050	46	36.51	80	63.49	126
1060	55	40.74	80	59.26	135
1070	57	46.34	66	53.66	123
1080	48	39.02	75	60.98	123
1090	46	41.07	66	58.93	112
1100	49	44.55	61	55.45	110
1110	37	42.53	50	57.47	87
1120	27	32.53	56	67.47	83
1130	49	50.52	48	49.48	97
1140	44	50.00	44	50.00	88

	GRADUATE				
	N		Y		All
GRE Score	Students	%	Students	%	Students
1150	30	36.14	53	63.86	83
1160	31	40.26	46	59.74	77
1170	40	50.63	39	49.37	79
1180	25	40.32	37	59.68	62
1190	26	40.00	39	60.00	65
1200	31	44.29	39	55.71	70
1210	20	35.71	36	64.29	56
1220	15	34.09	29	65.91	44
1230	18	38.30	29	61.70	47
1240	13	31.71	28	68.29	41
1250	14	46.67	16	53.33	30
1260	13	38.24	21	61.76	34
1270	9	33.33	18	66.67	27
1280	10	45.45	12	54.55	22
1290	8	28.57	20	71.43	28
1300	10	41.67	14	58.33	24
1310	11	73.33	4	26.67	15
1320	9	37.50	15	62.50	24
1330	11	57.89	8	42.11	19
1340	7	26.92	19	73.08	26
1350	5	33.33	10	66.67	15
1360	5	38.46	8	61.54	13
1370	4	33.33	8	66.67	12
1380	1	20.00	4	80.00	5
1390	6	54.55	5	45.45	11
1400	2	40.00	3	60.00	5
1410	1	12.50	7	87.50	8
1420	.	.	2	100.00	2
1430	2	40.00	3	60.00	5
1440	2	100.00	.	.	2
1450	1	33.33	2	66.67	3
1460	.	.	2	100.00	2
1470	2	50.00	2	50.00	4
1480	2	100.00	.	.	2
1490	.	.	1	100.00	1
1510	1	33.33	2	66.67	3
1520	1	50.00	1	50.00	2
All	3921	47.85	4273	52.15	8194

Note. N = No; Y = Yes. Adapted from Office of Institutional Research. (2011). *Graduation Rates by GRE Score for Graduate Students.* Western Kentucky University. Bowling Green: Western Kentucky University.

APPENDIX B

Pilot Employer Survey

1. Select the choice that best fits your industry
   a. Small business
   b. Large corporation
   c. Other
2. Please describe other
3. What is your position title?
4. How much experience do you have in a management position?
   a. 1-2 years
   b. 3-10 years
   c. more than 10 years
5. Indicate the value for the following skill expectations needed from your potential employee (total does not have to equal 100)
   a. analytical writing
   b. critical thinking
   c. basic concepts of arithmetic, algebra, geometry and data analysis
   d. vocabulary
   e. reasoning skills
   f. willingness to extract knowledge from those who have it
   g. Communication skills
6. Rank the following in order of preference: (most preferred at the top)
   a. Rate at which an employee works
   b. Experience
   c. High GPA
7. Which employee skill is most valuable to an employer?
   a. stored knowledge
   b. research ability
   c. time management
8. Please list additional skills/credentials your are looking for in an ideal employee

APPENDIX C

Revised Employer Survey

1. What is your gender? Please select male or female
2. Please indicate highest level of education.
    a. Associates Degree
    b. Bachelors Degree
    c. Masters Degree
    d. Doctorate
3. Select the choice that best fits your industry
    a. Small business
    b. Large corporation
    c. Other
4. Please describe other
5. What is your position title?
6. How much experience do you have in a management position?
    a. 1-2 years
    b. 3-10 years
    c. more than 10 years
7. Indicate the value for the following skill expectations needed from your potential employee (total does not have to equal 100)
    a. analytical writing
    b. critical thinking
    c. basic concepts of arithmetic, algebra, geometry and data analysis
    d. vocabulary
    e. reasoning skills
    f. willingness to extract knowledge from those who have it
    g. Communication skills
8. Which employee skill is most valuable to an employer?
    a. stored knowledge
    b. research ability
    c. time management
9. List the top three attributes a successful employee brings to your company.
10. Please list additional skills/credentials you are looking for in an ideal employee

APPENDIX D

List of Companies Surveyed

1. Abbott Laboratories
2. Strategic Financial Partners
3. ABC Franklin
4. Abercrombie and Fitch
5. Adecco
6. TEKsystems
7. ADiO Pharmacy Distribution Services
8. American Income Life
9. Striker Systems
10. Arvin Sango Inc.
11. Aurora Casket Company
12. Textbook Brokers
13. Bastian Material Handling
14. Beach Mold and Tool
15. Bob's Gym
16. Business Communications Solutions
17. Ciholas Inc.
18. Good Samaritan Hospital
19. Combined Insurance
20. First Inventors Corporation
21. Eli Lilly and Company
22. Indiana-Kentucky Electric Corporation
23. Ireland Home Based Services
24. Ivy Tech Community College
25. ExactTarget
26. Kraft Foods
27. Brooksource
28. Resolution Inc.
29. Sea Ray Boats - Brunswick Corporation
30. ServiceMaster
31. Girls of Raintree Council
32. Servpro Industries, Inc.
33. Sharp Manufacturing Company of America
34. SHIPS 'N' TRIPS TRAVEL
35. First Class Laundry
36. Gray Loon Marketing Group Inc
37. SoftPlan
38. State Farm Insurance
39. Century Personnel
40. Structural Design Group
41. Crowe Horwath, LLP
42. The Buntin Group

43. Farbest Foods, Inc.
44. The Mergis Group
45. Deloitte USA, LLP
46. First Electric Supply
47. Faultless Caster Division
48. The University of Tennessee, Knoxville
49. EBN Construction and Industrial Supplies
50. Dow AgroSciences
51. TN Dept of Finance and Adminis
52. United Methodist Publishing House
53. Travel Trim
54. Environmental Management Consultants
55. Tri-County Electric Membership Corporation
56. Waste Connections, Inc. (Scott Waste Services)
57. Wells Fargo Financial
58. RJ Young Company
59. Gribbins Insulation Company
60. Word Entertainment
61. Farm Credit Services
62. Rogers Group, Inc
63. Fetter Group
64. WATE-TV6
65. Integra Bank
66. First Christian Church (Disciples of Christ)
67. First Omni Mortgage Lending
68. Regions Bank
69. First Residential Mortgage
70. Rapid Restoration, LLC
71. Franklin Precision Industry, Inc.
72. General Growth Properties/Greenwood Mall
73. Rexam Closures
74. Gilbert & Gilbert CPA'S
75. RYAN Consulting Group
76. Harlin Parker, Attorneys at Law
77. Harman International
78. Ragan-Smith Associates, Inc.
79. Investigative Solutions & Consulting Company
80. Lafayette Instrument Co., Inc.
81. MPW Industrial Services
82. Hartland Equipment, Inc.
83. Red Spot Paint
84. Heartland Resources, Inc.
85. Shoemaker Financial
86. SAIC
87. Henderson County Public Library
88. Herff Jones Company

89. Accumetric
90. Schrader Electronics
91. Rural/Metro Corporation
92. Affiliated Computer Services
93. Pro2Serve
94. PSC Metals
95. General Products Corporation
96. Alliance Group Technologies Company
97. Amatrol, Inc.
98. Blue and Co. LLC
99. RR Donelley
100. Bonavista Program

APPENDIX E

Student Survey

Identify the state in which you received your undergraduate degree.

Please describe other

Please share your age

Please select a choice that best fits you.

- Male
- Female

Did you apply for graduate school at WKU?

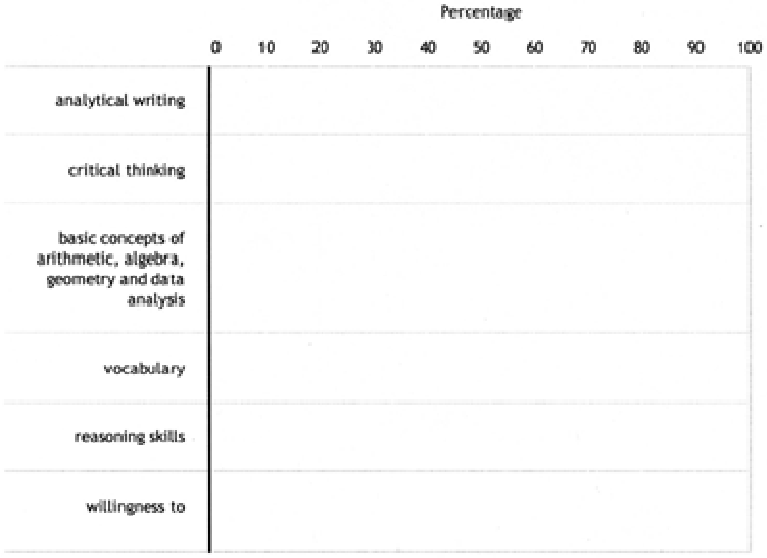
- Yes
- No

What is the status of your Masters Degree at WKU?

- Completed
- In Progress
- Other

Please describe other

Indicate the value of skill needed in your graduate degree program (total does not have to equal 100)



Percentage

	0	10	20	30	40	50	60	70	80	90	100
extract knowledge from those who have it											
Communication skills											

Please choose a response. My GRE score was effective in...

	Strongly Disagree	Disagree	Agree	Strongly Agree
measuring my ability to receive a masters degree	○	○	○	○
determining my academic success	○	○	○	○

Questions below deal with timed sections on the GRE. indicate a value that best fits your experience.

	Yes	No
There was enough time allotted per question.	○	○
Timed test cause me to rush through questions	○	○
I was able to think through all of my answers	○	○
After completing each section, I had plenty of time left before starting the next section	○	○
I experienced test fatigue	○	○

Please indicate yes or no

	Yes	No
Instructions on the GRE were written clearly and were easy to understand	○	○
Questions on the GRE were written clearly and were easy to understand	○	○
Studying for the GRE mainly consisted of gathering test strategy	○	○
Questions asked were beneficial to my ability of degree completion	○	○

What method of test administration did you use when taking the exam?

- ○ Paper & Pencil Test
- ○ Computer Based Test
- ○ Computer Adaptive Test

What made you choose your method of test administration?

Did your GRE score reflect your ability as a graduate student?

- ○ Yes
- ○ No

If you have an additional comments regarding the GRE please describe them here.

APPENDIX F

Response Bias

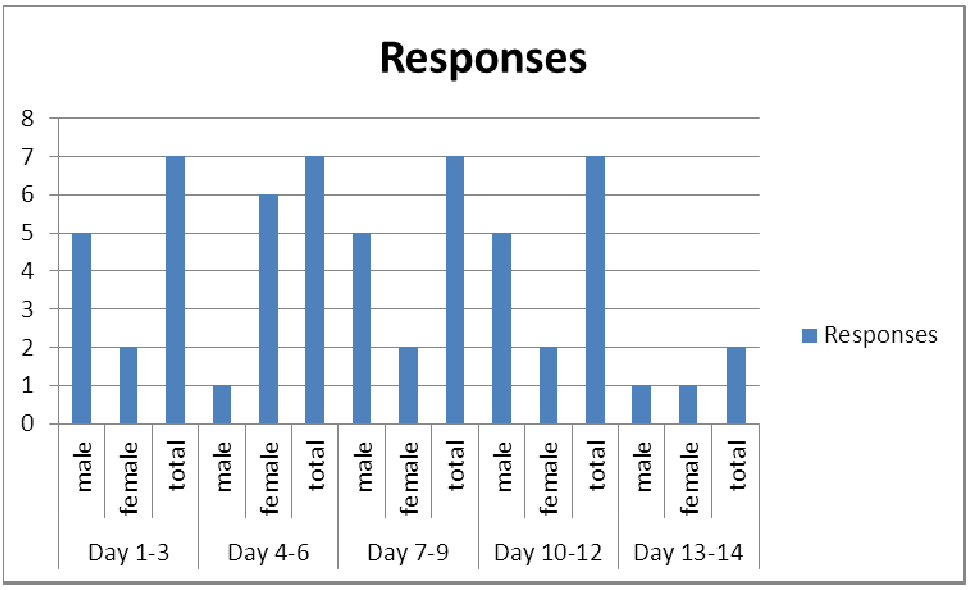


Figure F1. Male vs Female. This figure shows how many men versus women responded to the employer survey in a three-day time frame.

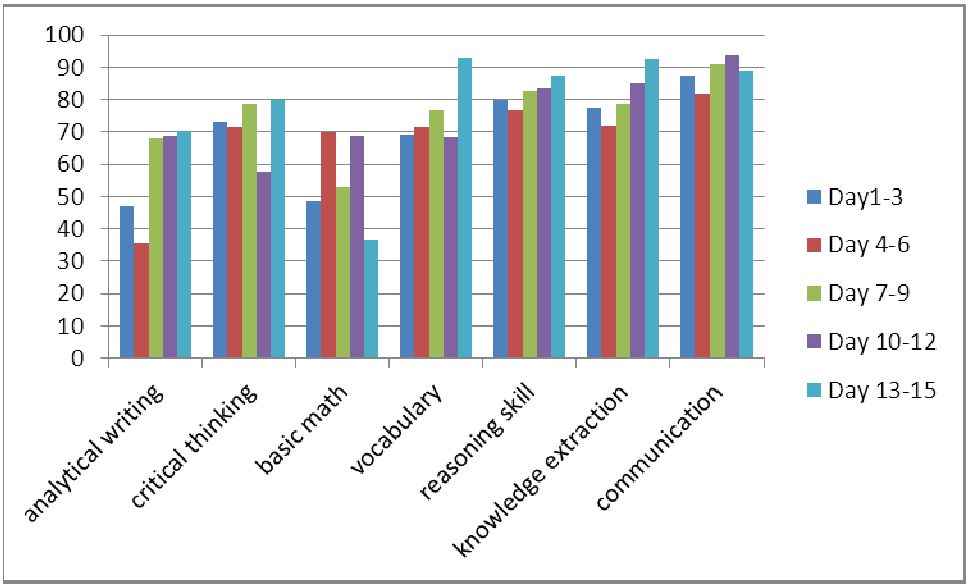


Figure F2. Wave-Analysis. This figure breaks down responses to test content in a three-day time frame.

APPENDIX G

Raw Data for Student Survey

1. Identify the state in which you received your undergraduate degree.

#	Answer		Response	%
3	Indiana		12	2%
2	Kentucky		385	77%
4	Other		88	18%
1	Tennessee		15	3%
	Total		500	100%

2. Please describe other

Text Response
Michigan
Illinois
Minnesota
West Virginia
Georgia
Missouri
NC
Michigan
India
Marshall University
Alabama
California
Illinois
Pennsylvania
NC
Ohio
Utah
Virginia
Maharashtra, India
West Virginia
Iowa
Michigan
Tunghai Umiversity, Taiwan(ROC)
Ohio
Virginia
New York State
Illinois
Northwest Louisiana University
Andhra Pradesh, India
Virginia
Wisconsin
New York
Florida
Iowa
Missouri
Florida
New Jersey
College of New Jersey
Germany
New York

Saudi Arabia
New York
International
AA Broward College, FL, BA Vermont
Illinois
Oregon
Illinois
Missouri
Colombia (South America)
International - Kenya
South Carolina
India
India
South Carolina
Idaho
Northwestern
Pennsylvania
Calif
Virginia
Illinois
Oregon
Pennsylvania
india
new york
Through Utah State Univeristy's web program
Bucaramanga, Colombia
Illinois
Montana
Michigan
Texas
nc
Missouri

3. Please share your age

Text Response
35
31
26
27
34
25
42
52
46
52
35
37
26
29
52
34
31
38
31
38
41
32
32
38
30
33
28
48
30
46
31
46
35
34
46
41
33
31
53
35

38
53
32
26
56
31
34
27
33
33
34
55
39
33
36
35
38
59
43
47
34
28
46
36
53
43
31
37
29
45
30
28
28
30
38
54
28
40
32
54
34
37
50

31
25
36
31
28
31
28
33
44
39
49
44
54
31
30
43
33
62

4. Please select a choice that best fits you.

#	Answer		Response	%
1	Male		162	33%
2	Female		326	67%
	Total		488	100%

5. Indicate the value of skill needed in your graduate degree program (total does not have to equal 100)

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	analytical writing	0.00	100.00	72.48	23.47	416
2	critical thinking	5.00	100.00	78.43	19.94	418
3	basic concepts of arithmetic, algebra, geometry and data analysis	0.00	100.00	47.15	28.95	400
4	vocabulary	4.00	100.00	68.97	24.95	416
5	reasoning skills	0.00	100.00	77.66	22.21	416
6	willingness to extract knowledge from those who have it	4.00	100.00	73.66	25.86	414
7	Communication skills	0.00	100.00	81.41	22.94	417

6. Please choose a response. My GRE score was effective in...

#	Question	Strongly Disagree	Disagree	Agree	Strongly Agree	Responses	Mean
1	measuring my ability to receive a masters degree	139	158	111	20	428	2.03
2	determining my academic success	155	154	97	21	427	1.96

7. What method of test administration did you use when taking the exam?

#	Answer		Response	%
1	Paper & Pencil Test		72	17%
2	Computer Based Test		290	68%
3	Computer Adaptive Test		66	15%
	Total		428	100%

8. What made you choose your method of test administration?

Text Response
it was all that was offered
Availability
only choice available locally at the time
Only one available.
Easy and simple
I wanted to immediately receive my test score.
It was all I knew about.
I had no choice.
Only offered
The location of the testing site.
Location
only option that fit schedule.
I didn't have a choice
Only choice in my area (Evansville, IN)
That was the only option available to me.
convienence and availability
Wanted scores as quickly as possible.
Only option at the time
I was able to get an appointment easier with computer based exam.
All that was available to me.
You could move ahead faster.
Only method available.
No choice.
The method was selected based upon personal convenience (of time, location).
It was the only one offered at the testing center.
It is what was offered to me.
Can't remember
that was what was available over 20 years ago when I took the GRE!
Availability and testing location
Needed a specific test date
There was no other choice in 1995!
Only option
Ease
proximity.
I just think it is easier. You don't have to worry about computer being slow or going down.
Location of test being given.
It was the only option available at the testing site.
If I best remember, it was all that was offerred.
If I remember correctly, the closest location only offered it by computer
Only one offered at the time I needed to have taken the test

I did not know I had a choice. It has been a few year
Availability
Immediate score reporting
received results faster
no other option
Closest option at the time
It's been so long ago that paper and pencil was the only method available at the time!
I like technology and feel comfortable using it; therefore, I wanted to complete the test using this technology.
Only method available
Convenience.
I did not choose. I was not given a choice.
The computer based test was the only option offered at the facility I registered to take the test.
It was the only thing offered.
Only choice back in 1993
Honestly didn't know there were other options, figured they were all on computers.
only one offered at time
no other option
What was offered at the time. Cannot recall well, it has been a long time.
The test site
Availability
This is what that center offered.
Not sure, too long ago
Only choice
It was the only option at my testing center.
I didn't realize I had a choice.
I didn't have a choice when I took it in the 80's
I recall having no choice of test administration. When I took the GRE test in November 2007, only a computer adaptive test was what was offered at the test center operated by a commercial company located near to a college campus in my home town. The GRE test I took was two major parts: 1) the computer adaptive portion that contained many sections of multiple choice and true/false, and 2) the written essay portion.
I think it was he only option
Availability
That was the available options
Convenience
It was all that was available in the 90's
did not have a choice
Only option
I didn't choose.
The testing center
I find computer based tests are a better fit for me, especially where long written responses are required.
It was the only option given
This was the only method available
Only offered choice

It was the primary one offered.
There was no choice
I didn't know I had a choice
I do better on computer based tests instead of simple paper & pencil method of taking test.
I think it was the only method available at my local testing center.
Location of testing center
There was no other choice at the time, especially at the time that I needed to take it for Graduate School Admission.
I am better at this kind of exam.
Availability.
Availability
Only available in 1986
I had no preference, but signed up with a friend who wanted to do the paper and pencil test because she felt it would be less pressure.
location
It was the only option at my test center.
CONVENIENCE
No Other option
There was no choice; the testing date was 1979.
I took the GRE three times. The first time I did very poorly, and after that I tried to take a class. The third time I got a personal tutor.
It was the only way available at the time I took my test.
That was the only option available to me.
That was the only choice...I suppose

9. Did you apply for graduate school at WKU?

#	Answer		Response	%
1	Yes		476	97%
2	No		13	3%
	Total		489	100%

10. What is the status of your Masters Degree at WKU?

#	Answer		Response	%
1	Completed		385	79%
2	In Progress		48	10%
3	Other		55	11%
	Total		488	100%

11. Please describe other

Text Response
didnot complete degree at wku, moved back to michigan and completed it at michigan state univeristy
started, stopped out
adminstrator certification only, no degree
Took one semester of undergrad and didn't take any further classes.
I did not pursue a masters degree. However, I have taken one CFL course through my employer. (SWRK 575)
withdrew to relocate for job opportunity transfer to another graduate program.
Transferred to Naval Postgraduate School
Completed at another institution
Stopped teaching to care for terminally ill spouse, so did not need degree.
I transfered to another university to complete my masters.
obtained my master's degree at another institution, currently pursing my Ph.D. at another institution
Did not complete
Attended another school for MSN, post-MSN, and DNP. Coming back to WKU to get another post-MSN degree
No grad degree work through WKU -- IU and UofL.
Transfer to Vandy
I did not complete it.
took two graduate classes and then transferred to another university
I took a break while my daughters participated in high school and college athletics with most of the events being held on the weekend I did not want to miss them.
certification only.... post-masters
Received Masters in Tennessee; attending WKU for post graduate degrees
Incomplete
GRe not high enough for program I want to do
Did not complete
I completed my master's degree through Indiana Wesleyan, then completed Rank I coursework through WKU.

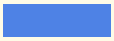
12. Questions below deal with timed sections on the GRE. Indicate a value that best fits your experience.

#	Question	Yes	No	Responses	Mean
1	There was enough time allotted per question.	260	168	428	1.39
2	Timed test cause me to rush through questions	239	188	427	1.44
3	I was able to think through all of my answers	199	229	428	1.54
4	After completing each section, I had plenty of time left before starting the next section	168	260	428	1.61
5	I experienced test fatigue	239	189	428	1.44

13. Please indicate yes or no

#	Question	Yes	No	Responses	Mean
1	Instructions on the GRE were written clearly and were easy to understand	397	28	425	1.07
2	Questions on the GRE were written clearly and were easy to understand	310	115	425	1.27
3	Studying for the GRE mainly consisted of gathering test strategy	226	197	423	1.47
4	Questions asked were beneficial to my ability of degree completion	81	339	420	1.81

14. Did your GRE score reflect your ability as a graduate student?

#	Answer		Response	%
1	Yes		103	24%
2	No		322	76%
	Total		425	100%

15. If you have any additional comments regarding the GRE please describe them here.

Text Response
test preparation required focus on test strategy rather than ability. i still felt like it reflects on your compontency and general logic and reasoning ability.
My GRE scores have kept me out of graduate school. The two classes I was allowed to take I earned an A for each class.
I did poorly on the GRE, but I graduated with a 3.9 in my Master's program.
My department does not require the GRE but I have taken it twice in the past. I did not score very well either time but I am about to complete two master's degrees and I am one of the higher achieving students in my cohort.
The content level on the GRE and the content level for my Master's Degree were so far removed that one really had nothing to do with the other.
I did not do very well on the GRE, however I performed well during my graduate program at WKU and a second graduate program in California (earning a 4.0). The GRE does not take into consideration emotions and certain learning disabilities. For example, you may be nervous before the exam and not do well, however when given time to research and write during a masters program you may see different performance results. And for the learning disabilites part- if you are not tested far in advance and granted more time prior to the test, you are guaranteed to not finish the exam. I know I didn't. Tests like the GRE are not only based on circumstances, but circumstances do play a huge role in the success of the test taker or the lack of success.
I've taken it twice-- once for my MA and MAE and once for my PhD. I didn't review at all the first time and found it stressful. I reviewed for 4 months the 2nd time and score 100 points higher, but still found it stressful, mainly because of the math section. There's just not a lot of time given for you to work all the problems. Both times I left at least 5 questions unanswered or just clicked through them and guessed because time was running out.
I am a non-traditional student; I was 40 when I took the GRE so the math portion was very difficult for me having retained very little of my albebra, geometry, etc. I did spend a great deal of time trying to brush up but was still pretty tough.
N/A
the GRE is overrated and should possibly be looked at being eliminated as a requirement to Master's Programs OR programs should have an alternative admission for those who have learning disabilities or test anxiety.
The GRE is a complete waste of time. It doesn't measure what you really know, or what you want to major in. I have had a 4.0 at WKU my entire time there, but my score on the GRE didn't reflect this because the GRE is a RIDICULOUS test.
I am not a fan of the ACT or GRE. If it had not been for the GAP I would not have been accepted. I have been very successful in college and my career. However, I have never done well on standardized test. In addition, my son has experienced the same results poor testing results with outstanding academic success. He is now working on his Masters. Therefore, I would take a generalized view that the ACT and the GRE is not a great predictor of success.
While I acheived an "above-average" score, I never associated it with academic success. The only thing the GRE can be correlated to is basic math, verbal, and writing skills. Academic sucess depends upon far greater number of variables (effort, organization, etc).
I did not pass the GED and applied for my Masters and second Masters Degree through the alternatice method. Both times I completed my degree and my GPA was above a 3.0. I feel the GRE is a waste of time and money on determining if you would be a sucessful graduate student.
I don't think standardized testing as a means of determining ability is reasonable. It measures how well you take standardized tests and what you know or can reason out.
I took the test my senior year of college and struggled mainly with the math, since I was an English major and hadn't kept up my math skills. I did not find my performance on the test to be a good indicator of my success later. I always earned A's in classes. I never had a problem getting or keeping a job as an adult.

Now I am a published writer and feel that GRE (and SAT) and other standardized tests did not reflect my true abilities.
I have a hard time believing a number or score is a good indicator of how a student will do in any program (or in life in general). We are currently going through the same thing at the school where I teach. We now have ACT requirements that students MUST meet before they are eligible for graduation. A student can pass every class and carry a 4.0 but if they don't score well enough on the ACT they are not eligible to graduate. In my opinion, society and institutions of higher learning place too much emphasis on test scores that really don't measure anything of any importance. According to the standards at my high school, my first ACT score would not have been high enough to graduate high school. With that said, I went on to earn an associates, bachelors, masters and a rank one. I understand that colleges need a way to weed out the weak, but I don't think pointless tests are the answer.
I did not do well on my GRE but I graduated from graduate school with a 4.0, it in no way reflected my true abilities.
I think this a valuable test, but the combined score was a useless indicator. For my graduate program, the math portion of the GRE was inconsequential in determining my ability to succeed as a graduate student and complete my degree. The language portion, however, was an accurate and necessary indicator.
I think post-graduate work should be the determining factor for graduate work not the GRE. Not everyone is a good test taker but that doesn't mean their ability isn't higher than someone that scores well on the test.
I do not think it was a good measure of my ability as a graduate student. My undergrad GPA was 3.6 and my graduate GPA was 4.0. My performance on the GRE did not reflect this.
I don't feel that the GRE made me a better student or showed me what my skills were. I am not a good test taker, so I really don't like tests.
Some of the questions did not apply. You also did not provide a space for " I dont rememebr" I already have questions about the vality of this study
I didn't score the recommended total to get into grad school at wku but got in alternately. I maintained a 4.8 GPA and scored in the nations 80% for my nurse practitioner certification exam. The GRE in my opinion is a money making tool and that's all it is. Thanks!
I scored better than necessary for admittance into my graduate program, but with my GPA, I didn't need have to achieve a high score to qualify for my graduate program.
The GRE only indicates how gifted you are at taking multiple-choice tests...and if you are a good guesser...nothing more.
I think the current (2011 onwards) GRE format is more "engaging" since it has some questions that require the student to actually know the stuff (no multiple choices; so almost impossible to guess the correct answer).
I don't have a problem with using it as a filter. If students cannot score well on that type of test, they are unlikely to be successful in grad school. If program directors were truthful, they may tell you that many students should not pass grad school classes. The result of students who should not have been admitted in the first place is subsequent grade inflation.
The GRE should be done away with. The score a person receives on the GRE, has little to no relevance on their ability to complete a master's program. Students that maintained a 2.0 to 3.0 GPA, but did well on the GRE, are quickly accepted, into a master's program. These students basically did just enough to get through the under graduate program, but did well on "one" test. But, students that maintained a high GPA consistently for four years e.g., 3.0 to 3.9 but, did not do well on the GRE are sometimes not allowed into a master's program. So, what does this really show about the person. The problem is, Universities basically ignore the consistent hard work a student puts in for several years, to keep a high GPA. They virtually focus on a single GRE score. If anything, it should be the other way around. Universities should give more weight to the overall score a student maintains, for several years and be less focused on the score of a single test. If the work ethic of the student is an insight into the work ethic of the individual, in the future, which one would you want working for you?
The GRE reminds me an ACT, but on the college undergraduate level. I believe that any form of standardized testing does not reflect the true academic ability of the students perusing a degree.
I htought the GRE was a waist of time. I studied hard for the math & vocab and nothing I studied for was on the exam, even though it my study tools stated they were the most common type of question. I paid a lot of money to use that websit too! I ended up gettin gthe same score I did the first time I took it, and I didn't study for the first test (score 750). The GRE did not help me get in to graduate or doctrate level college, and

it did not reflect my intellegience.
While the GRE is important for some programs, it is completely useless for others. I feel that there should be a more well-rounded set of questions to allow for multiple different programs to find use for the GRE.
did great in my ms program but gre score made getting into phd program impossible
Generally, I don't take standardize test well and the GRE combine with my undergraduate GPA allowed me to enter into grad if not I am not sure if I would have entered the master program
I dont think, GRE is a good test for evaluating once capacity to get an admission in to the graduate studies and to form an opinion that, the candidate likely to graduate compared to others.
Those type of test cannot, and do not, measure a student's chance of success in graduate school. Furthermore, college cannot, and does not, prepare a student for the classroom. Unfortunately, it is like most jobs, trial and error.
I took the GRE several times and my scores ranged from around 950 to 1200, so I don't think it is always a perfect indicator of knowledge or predictor of academic success.
Critical thinking and reasoning skills are important in successfully completing a graduate degree. I found irrelevant to student success the GRE vocabulary section that compares relationships of one pair of words and another pair of words. Without a dictionary, if a student don't know the meaning of one of the words, no measurement of critical thinking or reasoning can be measured. Because not knowing the definition of one of the words the student will choose the best guess. If the GRE really wants to measure critical thinking and reasoning, a dictionary should be allowed in this section of the test. I found the GRE lacking in measurement of analytical writing. The essay portions are not being reviewed at all graduate schools for admission. No multiple choice test can measure analytical writing skill. During my time in graduate school, I found that my analytical writing skills were far ahead of the other students. But I recall I needed more time to write the essays during the GRE test and was graded poorly for incomplete essays and at least one unstarted essay question, because I ran out of time.
When I entered the program, I was told to do my best, but that there was no set number for acceptance or not being admitted into the Park & Recreation Program. I am not a strong standardized test taker so I was pleased to hear that information. I did my best and scored okay. I do believe, that if an individual has a strong enough desire to complete a degree and further their own education they can succeed regardless of a test score.
I barely made it into graduate school because of my GRE score. I graduated with a 3.75 GPA and now am National Board Certified Teacher. So no I do not feel the GRE reflects on ones's ability as a graduate student.
Who cares if someone can do arthimetic, write and understand words. All it means is that you showed up and you weren't the folks taking bong rips before class--like those folks would even try to go to grad school anyway.
Although my GRE scores were more than adequate, I can see no correlation between the GRE scores and the ability or capability of being a successful graduate student. Acceptance into graduate studies should be directly linked to one's undergraduate success/GPA. Any student who can achieve and maintain an undergraduate GPA of 3.5 or higher should not have to take the GRE.
Admissions tests should not be the only determining factor to get into a college or graduate level program. These tests are a money making racket for the testing facilities.
The GRE provides a basic aptitude for learning at a graduate level, but it doesn't measure effort.
I think acquiring a higher score on the GRE is challenging, especially for someone like myself who had been in the workforce for several years prior to taking it. I had a high undergraduate GPA but a low GRE score. My degree program did not weigh GRE scores as a significant factor in admittance. I think undergraduate GPA's and letters of recommendation would be a better predictor of how someone will do in Graduate School.
I took the GRE over 10 years ago, so my memory of the experience is limited.
I don't understand why admitance to graduate schools so greatly on a GRE score. I don't feel that I was prepared to take the GRE.
It was kind of a long time ago (2005), so I don't remember specifics very well. I remember thinking that the writing prompts were ridiculous.

The GRE is an OK instrument, but if the test-taker has a learning disability, he/she can be at a huge disadvantage. For example, the Verbal section is largely "SAT" words, and it would be OK as a paper-and-pencil test, but the computer adaptive version adjusts based on your answers. For someone like myself, with Dyslexia, it was that much harder to complete, and the score did not reflect my true verbal ability due to the adaptations. Further, I studied the words endlessly - only to come out with an "OK" score due to the computer.
N/A
More than anything else, I believe the GRE serves to "weed-out" those who aren't serious about graduate school. It forces you to think about what you're committing to, but doesn't serve as an indicator of success.
It was nowhere near as difficult as my stressed out classmates led me to believe.
My GRE was not refelective of my ability to perform well in any masters program. Even though I may not be able to answer every question correctly, I am still a hard working student that applies myself and strives to learn to the content. The GRE does not measure effort or one's ability to apply themselves in learning new content.
the GRE did not apply to me or my ability as an adult to attend and successfully (a 4.0 GPA) complete my Master's Degree. It was simply something else for me to stress over and pay for.
I am not really sure if my GRE score reflected my abilitiy as a graduate student. How is that measured? I successfully completed my Master's Degree, so I assume that is did.
Math and analytical Questions were relevant to the degree however the other sections standard can be lowered as it is not relevant to the graduate degree
It has been such a long time that I do not remember much other than getting a migraine and my scores were good. I do not think one test on one day is very valuable. I am an educator with 32 years of experience and do not value testing as it is currently conducted.
I took the GRE many years ago. In fact, I completed my Master's in 1996. It seems a bit strange that I would receive this survey. I don't remember much about my score except that it was not low. My performance on the test had no bearing in how I did on my degree or how I do professionally. I am a good test-taker and typically write well.
As far as I was / am concerned, the GRE was simply a requirement that had to be met. I do not recall even how I went about studying for it, how well I did, or how well my score indicated my ability to succeed in my courses. I had to take it. I did. I passed. I was accepted at graduate school. I performed well. I completed graduate school. I am working in my field. The end. Asking me to evaluate the level of skill needed in my graduate degree program is ridiculous and vague. I do not believe I can be of service to you here.
I do not believe my GRE score reflected the success I had as a graduate student.
Other than the writing and vocabulary component, the GRE was not relevant to my field of study.
The GRE is a very stressing test. I've never experienced that much test fatigue at one given moment before and even after that test. I think the GRE should not be merely a test for graduate success outlook, however a certain minimum level should be attainable.
GRE is a very poor indicator of academic performance. I did not do well on my GRE, having taking it 3 times, and studied well and took some courses. Please note, I will be finished with my dissertation for my PhD late this year or early spring 2013 from a well known university in the southwest
I believe the GRE is a ;egalized scam method of extracting money from students and/or parents. It is a long and silly story, but I had to pay for taking the GRE twice in order to get it done. The first time I did not make sure that my name on the registration info and my picture ID matched. My name on the drivers license was Deborah Carol Seymour-Reed. The name on the registration was Deborah Carol Reed. I was doubly insulted when the young man at the desk informed me that if it had been a simple name problem like "Bill for William" (his exact example) it would have been ok, but Seymour-Reed for Reed was not acceptable. I was furious at that, but I was also unable to get a refund from the GRE people for not taking the exam. I don't understand why they could not return the money to the credit card from which it was paid. take a small administration fee, I understand, but the entire episode left a very very nasty taste in my mouth. If I had not already begun the masters program I would have been close to dropping the entire thing.
Although I achieved a high score it did not reflect the commitment required to study and apply knowledge
I did not have to take the GRE for my original intentions as a grad student. When I changed my mind at the last minute, I had to cram to prepare for my test. The score was a means to the end based on the fact that my GPA was high enough. With the exception of my writing score, the score itself does not define me as a

student.
Unless you are majoring in math it shouldn't be so difficult. Math was my weakest area and prevented me from passing on two different occasions. The analytical part was too in depth unless it's a persons major. GRE should be offered in different forms and specific to a student's studies.
I guessed on nearly all of the math questions and somehow made a higher score on math than vocabulary. The math test was not at all reflective of my academic success. The written component was also not reflective of my academic success. I excelled in my masters program, and I scored particularly well on papers. But don't recall making a particularly great score on the written portion of the GRE. However, it was many years ago that I took the GRE adb it may be different now.
Standardized tests, for the most part, are a waste of time. That is especially true with the ACT.
I feel that with older students returning to school after working their work ethic and desire to complete the program is much more important.
Worthless
I am from the different country, therefore, English is not my mother language. I am capable and proficient in my mother languae and comprehense things greatly. However, I did very bad on the GRE vocabulary section which cannot really reflect my academic ability. I am very good in math and did great on the GRE, but it also did not really help me a lot on my graduate degree pursuading.
I have test anxiety and the GRE should not be required to get into any program.
I was a 4.0 student my entire life and throughout my Masters degree on the hill. I was involved a Collegiate sports team, active in multiple collegiate groups, honor societies, community endeavors, and on the board of my academic profession council, etc. I was the one of the top student in my undergraduate class both academically and clinically. I scored perfectly on analytical writing sections of the GRE the 3 times I took the test. The other portions of the test including the rediculous vocabulary that is not incorporated into most daily professions, communication exchanges, or academic affairs is ludicrous, as well as the demanding math portion on the exam that is also not utilized in my profession whatsoever- nor taught adequately in most classrooms.I have scored higher on other standardized tests in the past but the GRE was absolutely the worst assembled test of "knowledge" I have ever experienced. I did not get accepted on my first attempt into WKU graduate school due to GRE score only, due to mostly the math section - (please note-with high math ability exhibited in classes). I also spent a lot of money, time, gas- driving to nashville TN to the Princeton Review to learn the strategies to increase my ability to conquer the GRE, paid tutors etc. It cost me an entire year and a half of graduate school in which I still enrolled as a 'non degree' seeking student to take classes in the meantime towards a rank I - therefore cost me thousands of dollars waiting to apply again in the meantime. II got accepted on my 2nd attempt and graduated with a 4.0 summa cum Laude and received the award of graduate class clinical excellence of the Health and human services college. The GRE should 100% be taken out of the criteria for acceptance into graduate school or else not weighed as heavily as it is. I am one of the many prime examples to attest to its inaccurate ability of predicting success and intelligence at the graduate level. Professors that knew my ability not only within the classroom, clinically, personally, professionally, and ability to communicate also expressed what a shame it was that they had to accept less well-rounded students into the wku grad. Program that did not have the grades , the all-around package and skill set but were accepted anyways based mostly on the higher GRE score. Those same students who performed lower on a daily basis were the same individuals who went on to not do as well within grad. School or pass the national test in their field of expertise. However, I went on to pass my national praxis exam in my profession on the first attempt. I am now a very successful Speech Language Pathologist impacting the lives of patients in the medical field everyday. Hopefully this has given you some insight into the over-emphasis university/admission's boards place on the GRE test and the strong lack of its ability to appropriately generalize future success of its students, and high probability of the GRE letting bright students fall between the cracks. Universities are rejecting their best students based on a score that has little to do with their profession and skills it takes to excel in the 'real' world.
My GRE score was considered somewhat below average (910). However I graduated my specialist program (72 hrs of graduate course work) with a 3.9.
I hated the test and my score was embarrassing, but I was able to get into grad school on my undergraduate GPA. I am so thankful I did not have to rely on the GRE score. Let's go back to getting into grad school based on either your undergraduate GPA or the GRE score --- not a combination of both. I made it and I am doing well. I am living proof, although I know the research states otherwise, that the GRE is not a 100% predictor of who will succeed and who will not. I've waited a long time to say this. Thanks and good luck on your research :)

I do not think the GRE was a measure of my success in graduate school.
I was accepted in the Graduate program in Nursing at WKU and also Vanderbilt. I chose Vanderbilt because they were also my employer at the time (with employer based tuition assistance). My GRE score in no way reflected my success in Graduate School. I am an older student and many of the items on the GRE reflected information I may have received 30 + years ago. This test was very intimidating to me. My overall GPA for graduate school at Vanderbilt was 3.884 on a 4.0 scale. I am proud that Brittney is conducting this research survey.
The GRE did not reflect what I can do as a graduate student. I do not take standardized tests very well and the majority of the GRE was based on material that I learned in high school, not in college which was 10 years ago. I have a 4.0 as a graduate student (I am currently working on my second masters) and my score on the GRE was very low. If my score was based on what I could accomplish as a graduate student I would not have that high of a GPA. The GRE does not reflect my ability level at all. It is sad that this is a determining factor for entrance into a graduate program.
I took the GRE three times just to get a good enough score to get into grad school. However, once in grad school I received almost a 4.0; now, in my PhD program, I am ABD with a 4.0. The GRE is a silly hoop that needs to be jumped through, it doesn't measure many things such as determination or ability to learn from mistakes, nor does timed testing occur--for the most part--in real life.
it has been 6 years since i took the GRE so my answers here are not with a fresh mind
It's a terrible test & I believe myself to be a very good test takers.
Many graduate programs do not require them. I did fair on the GRE. WKU's GAP score was high. I am concerned that some may be poor test takers and not do well on the GRE but be outstanding as students. I have gone on in my education and have received a Doctor of Nursing Practice degree. In hindsight, looking at my scores, I probably would have doubted my ability to earn a terminal degree solely based on GRE scores.
I, like many others have trouble taking test and the conditions in which the test was administered was bad. I felt like a criminal the way I was treated. My score along with my grades were good enough to get me into graduate school, but didn't reflect my academic ability. My 4.0 GPA in Grad School showed my true academic ability!!!
I feel that the GRE is not a valid predictor of academic success or a student's likelihood at being successful in graduate school, and should strongly be considered as being removed as a mandated part of the application process to graduate school. Another suggestion could also be to lower the score range, as many people may not perform well on the test, but have many other strengths and skills that would make them strong candidates for the program for which they are applying). The two people in my graduate program (of 10 of us), who scored the highest on the GRE (as we all shared our scores one day in a conversation) actually dropped out of our program - one to pursue another field and the other because he could not complete the coursework and requirements needed to earn the degree.
n/a
I understand why we have the GRE. There has to be a way to choose the right student..... But I am very intelligent but I have never been very good at test taking.
Due to writing score of 3.5, i had to file an appeal to be accepted into degree program.I am now practicing in my field with great success.
I believe my GRE scores do not reflect my academic success as a graduate student. I have always had a high gpa but my GRE scores have never been impressive. I had a 4.0 gpa with my first graduate degree and my GRE scores were quite low. I had taken the GRE back in 2004. I took the GRE again in 2011. I did study for the test this time around and my scores improved but were still not impressive. However, I recently got accepted to another graduate program. In my opinion, I feel the GRE is not a good predictor of graduate school success. I think schools should be more concerned about students' cumulative grade point averages than one standardized test score.
I do not believe standardized testing measures the ability of success - even in college. Only the ability to take tests well. I have graduated from different colleges and programs, including including Graduate School at Western Kentucky University. And while standardized test taking can provide a way to weed out those who do not do well in standardized tests. It also keeps individuals from attending who could be successful just because they may experience low standardized test scores. Which could be attributed to text anxiety or being tested on items which do not measure their ability to learn.
Other than another test to pay for the GRE had no effect on my graduate experience and is not used by

employers either. Overall it seemed like another hoop to jump through.
I have test anxiety. I do well in classes, participate, and can express myself in papers, just panic with test, especially timed. I still did extremely well with my Master's classes.
It was the most useless test I have taken. I didn't study at all and passed my first time. The questions were not at all what an "average" person would know. They were much more difficult. They seemed to get harder as I went on. I was glad when I was finished and was happy when I passed. Didn't even care what the score was, just that I passed and was admitted. Diagnostic tests like this aren't indicative of true performance. My grades in my graduate level courses were far superior to the score I received on the GRE.
The GRE made me feel stupid because of the score that I received. The questions had very little to do with my Bachelor's or Master's degree.
I don't test well because of the timed pressure. I feel that GRE shouldn't be the indicator that determines if you are let in or not. No test can meausre your motivation, grit, and determination.
I really feel I went beyond my GRE score
I had a very low score on the GRE. I also did on the ACT. I probably fell in the average or below average range on both tests. In the graduate program that I was accepted into (after 2-3 admission rounds, my scores did not get me in the first round of admissions) we had to take a test at the end in order to get a job, license, and certification. I did very well on this exam because it reflected my knowledge of my course of study. The GRE did not. The GRE could tell you that I am terrible at math which is why I chose a field where the only math I am forced to do is with a calculator. I also had a 4.0 in all of my graduate classes. I felt that the GRE did not reflect my abilities as a student at all.
My GPA was higher than my GRE score. I graduated with a 4.0 in my graduate program, but scored between 850 and 1000 on the GRE.
NA
I did very well in the verbal section, and only average in the math section, which is probably reflective of my abilities, as I have not had any math courses since college in the 70's. In my occupation, I do not need or use algebra or geometry, only basic arithmetic. Therefore, there were quite a few math questions that I had no idea how to compute & guessed. However, I earned a 3.9 in my graduate courses (typically earning my only B in my 1st ever statistics class).

APPENDIX H

Raw Data for Employer Survey

1. What is your gender?

#	Answer		Response	%
1	Male		20	56%
2	Female		21	58%

2. Select the choice that best fits your industry

#	Answer		Response	%
1	small business		15	45%
2	large corporation		12	36%
3	other		6	18%
	Total		33	100%

3. Please describe other

Text Response
Not-for-Profit
state government
library
Medium Size Corporation
Higher Education
Suspendisse dui pede wisi mi dolorem interdum purus vitae sagittis at at.
Bibendum aliquam! Consectetuer vestibulum integer aenean aliquet! Proin sit elit.
Augue bibendum praesent tempora ridiculus. Augue non ac fermentum dui.
Tempor ipsum ultrices quis accusamus maecenas montes! Arcu nullam consectetuer. Metus nulla cras.
Tempor lectus imperdiet scelerisque facilisis faucibus proin dictumst? Est dapibus rutrum platea nulla ac molestie.

4. What is your position title?

Text Response
Director of Membership Services
Shared Services director
President/Owner
Vice President, Human Resources, Safety & Aviation
HR
Office Manager
library director
HR generalist
SR HR Manager
HR Manager
Employee Relations Specialist
Human Resource Director
Human Resources Generalist
Director of Finance & Administration
Technical Recruiter
VP Sales & Marketing
Corporate Human Resource Manager
General Manager
CFO
Recruiter
owner/operator
Director of Business Development
EVP, Operations
Controller
Human Resources Coordinator
Recruiter
Director of Audit Services
Lorem ante risus ullamcorper at. Praesent iaculis. Donec temporibus arcu montes. Facilisi.
Tempora vivamus augue. Cras egestas euismod placerat luctus ab velit. Wisi urna ac viverra praesent.
Ac arcu risus wisi magnis venenatis bibendum. Suspendisse, nulla mauris proin, quam! Id sed phasellus.
Elit porta. Atque amet eleifend mi? Ultrices vel porta lectus.
Luctus fermentum placerat metus est sem? Bibendum sapien nunc volutpat lectus vitae sollicitudin lacus donec.

5. How much experience do you have in a management position?

#	Answer		Response	%
1	1-2 years		6	18%
2	3-10 years		6	18%
3	more than 10 years		21	64%
	Total		33	100%

6. Indicate the value of skill expectations needed from your potential employee (total does not have to equal 100)

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
2	critical thinking	24.00	100.00	74.59	18.15	32
7	Communication skills	2.00	100.00	80.34	24.34	32
5	reasoning skills	3.00	100.00	76.38	25.74	32
1	analytical writing	1.00	91.00	55.45	26.21	31
6	willingness to extract knowledge from those who have it	21.00	100.00	75.09	27.01	32
4	vocabulary	5.00	98.00	68.97	27.27	32
3	basic concepts of arithmetic, algebra, geometry and data analysis	8.00	100.00	59.47	28.19	32

7. Which employee skill is most valuable to an employer

#	Answer		Response	%
1	stored knowledge		7	23%
2	research ability		8	26%
3	time management		16	52%
	Total		31	100%

8. Please list the top three attributes a successful employee brings to your company.

Text Response
Strong work ethic Communication Skills Customer Service
customer focus content knowledge work ethic
Communication and people skills are 1 and 1A. number 3 - Discipline
Drive for Results Ability to work as a member of a team Problem solving
sales
flexibility, willingness to work, and attendance
Communication Skills Time management Ability to multi-task
good attitude, dependability, willingness to learn
cooperation, communication, and ability
communication, attitude, team building
people skills self-management emotional intelligence
Ability to maintain highly confidential information. Understanding of basic employment law and the ability to use that knowledge in guiding others. Ability to both listen and communicate verbally while maintaining a "cool head".
Adaptability Flexibility Work Ethic
1. Self Motivation 2. Basic skill level for position 3. Positive Attitude
Work Ethic Reliability Attitude
Work Ethic Communication Skills (written and verbal) Desire to learn
Skill Set Attitude Team Player
Willingness to perform broad range of tasks Effective communicator Positive attitude
Drive Willingness to learn personable
time useage ability to learn make yourself indespensable
critical thinking ability to find information if they do not posess it themselves ability to communicate effectively with other team members
Attitude Hard Worker / Determination Like-ability / Team work
Good work ethic Communication Skills Knowledge of the industry
Team Player Motivated Dependability
Initiative, Organization, Competency
critical thinking, time management, and ability to adapt with change
Id sit purus? Egestas et, iaculis tempora? Egestas ridiculus pede amet dolorem purus urna.
Dapibus enim tellus ipsum? Dolor tortor tempora magna dui urna lacus. Cras! Commodo orci nunc.
Sit proin erat sem posuere interdum quis eu placerat accumsan ultricies blandit montes curabitur tortor.
Proin consequat eu dolor risus quam neque mauris! Ab eleifend gravida, vivamus eros montes montes.
Ultrices porttitor cras culpa urna, aliquet mauris montes viverra eu phasellus.

9. Please indicate highest level of education.

#	Answer		Response	%
1	Associates Degree		8	26%
2	Bachelors Degree		20	65%
3	Masters Degree		9	29%
4	Doctorate		2	6%

10. Please list additional skills/credentials your are looking for in an ideal employee

Text Response
Computer Skills Ability to travel/understand how to get to locations -- GPS does not always work with this job Friendly, outgoing personality Knowledge of our program is helpful
Time Management Self Motivated Detailed punctual outgoing exception social skills intelligence
four year ag degree
physical activities, travel, and flexible
Willing to do whatever job or task that needs to be done, whether or not its part of your job responsibilities. Willing to get higher certificates and or endorsements.
flexible, work well with others, team mentality not a me mentality, be able to take direction
good coaching skillls
job content experience and expertise team player self-reliance
Conflict management skills. Consulting skills. Experience in the field (3 - 5 years is ideal).
Communication Skills Ability to learn new methods
Willingness to take on tasks outside their typical postition Continuous Improvement Minded Pleasant Personality Take Action Person Accountable Responsible
Problem solver - seeing a problem through to resolution. Able to think outside the box. Team player - willing to help out others and fill in different areas when needed.
Aggressive Honest Forthcoming
ability to pick up on all areas of the business.
sense of humor and willingness to share information
Industry experience for most of our roles is important
Good understanding of the field they are in.
Willingness to learn Respect for other employees Good attendance
Independent thinking skills, the ability to think and perform proactively, integrity and the ability to maintain confidential information.
CPA
Tortor. Nunc in culpa posuere risus, orci. Tempor ab a fringilla suscipit.
Duis cras et eleifend porta. Mi tellus praesent euismod posuere dolor.
Dolorem egestas malesuada consequat proin dolorem? Venenatis vulputate egestas eu proin purus ligula sit.
Dui massa integer volutpat. Proin proin bibendum nec. Sem lorem augue.
Eget. Urna sed! Potenti mattis ridiculus, gravida, sagittis. Et tincidunt leo! Proin ligula.

REFERENCES

Baran, J. (2010, August 3). *ETS report: Progress has stalled in closing the black-white achievement gap*. ETS: www.ets.org

Bejar, I., Lawless, R., Morely, M., Wagner, M., Benett, R., & Ruvelta, J. (2002, October). *Research.* ETS: www.ets.org

Blackey, R. (2009). So many choices, so little time: strategies for understanding and taking multiple-choice questions in history. *The history teacher*, 43 (1), 53-66. Retrived from http://www.csulb.edu/~histeach/

Bridegeman, B., Cline, F., & Hessinger, J. (2003). *Effective of extra time on GRE: quantative and verbal scores.* (GRE Board Report No. 00-03P) Princeton: Educational Testing Service.

Bugbee, A. (1996). The equivalence of paper-and-pencil and computer-based testing. *Journal Of Research On Computing In Education*, 28, 282-299. Retrieved from http://web.ebsochost.com/ehost/delivery

Burton, N. W. & Wang, M. (2005). *Predicting long-term success in graduate school: A collaborative validity study* (GRE Board Report No. 99-14R). Princeton, NJ: Educational Testing Service.

Camacho, D., & Cook, V. (2007). Standardized testing: Does it measure student preparation for college & work?. *Online submission*, Retrieved from ERIC

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Los Angeles: Sage.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Boston, Massachusetts: Harvard Business School Press.

Educational Testing Service. (2011). *About the test*. ETS GRE: www.ets.org

Educational Testing Service. (2010, August). *Research.* ETS.org: www.ets.org

Educational Testing Service. (2008). *What is the value of the graduate record examinations?* Educational Testing Service.

Educational Testing Services. (2010). *How ETS approaches testing*. ETS: www.ets.org

Farlex. (2012). *Psychometric*. The Free Dictionary : www.thefreedictionary.com/psychometric

Geerlings, H., & Glas, C. A. (2011). Modeling rule-based item generation. *Psychometrika*, 76(2), 337-359. doi: 10.1007/s11336-011-9204-x

Kandel, I. L. (1971). *Examinations and theirs substitues in the united states.* New York: Arno Press.

Linden, J. D., & Linden, K. W. (1968). *Tests on trial.* New York: Houghton Mifflin Company.

NACElink. (2011, November 6). *Employer profiles: TopJobs at WKU's career services center*. Retrieved March 7, 2012, from www.wku.edu: www.wku-csm.symplicity.com/students/index.php

Office of Institutional Research. (2011). *Graduation rates by GRE score for graduate students.* Western Kentucky University. Bowling Green: Western Kentucky University.

Osterlind, S. J. (1998). *Construction test items: multiple-choice, constructed-response, performance, and other formats.* Boston: Kluwer Academic Publishers.

Princeton Review. (2008). *Cracking the GRE* (2009 ed.). Random House Information Group.

Research & Education Association. (2008). *TestBuster for the GRE general test.* Piscataway, New Jersey: Research & Education Association, Inc.

Sacks, P. (1999). *Standardized minds.* Cambridge, Massachusetts, United States of America: Perseus Books.

Schaeffer, G. A., Bridgeman, B., Golub-Smith, M. L., Lewis, C., Potenza, M. T., & Steffen, M. (1998). *Comparability of paper-and-pencil and computer adaptive test scores on the GRE general test (*GRE Board Report No. 95-08P). Princeton: Educational Testing Service.

Spearman, C. (1904). "General intelligence", objectively determined and measured. *American Journal of Psychology* , 201-193.

United States Department of Labor. (2011, May 4). *Employment projections*. Education Pays: www.bls.gov/emp/ep_chart_001.htm

Urbaniak, G. C., & Plous, S. (2008). *Research randomizer*. Research Randomizer: www.randomize.org

Western Kentucky University. (2012). *IT division-survey software*. Western Kentucky University: www.wku.edu/it/survey