

## **The grand question: do entrance examinations determine graduate student academic success?**

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### **ABSTRACT**

This article discussed the accuracy of nationally normed entrance examinations such as the Millers Analogy Test and the Graduate Record Examination at predicting graduate student academic success in Master's and Doctoral programs. Academic success was defined as maintaining the required minimum or higher graduate program grade point average and completion of the graduate program. Kuncel, Hezlett, and Ones (2004) study had mixed outcomes as to the effectiveness of these entrance examinations foreseeing graduate student academic success. More specifically, the study pointed to the shortcomings of these tests not being able to predict specific abilities that are needed to succeed in graduate school such as creative ability and practical ability. Students admitted to graduate programs with no entrance examination scores were shown to attain a slightly higher-grade point averages as opposed to the students that took the entrance examinations therefore, "the need for greater flexibility in what is required in an admissions application" should be considered (Gibson, Leavitt, Lombard & Morris, 2007, p. 1). Other studies found entrance examinations to be a moderate forecaster of the grades students could earn within their first semester of attendance (Moneta-Koehler, Brown, Petrie, Evans & Chalkley, 2017). The overall consensus in the majority of the studies advised admission committees to contemplate reducing the dependence on entrance examination scores as a predictor as to how graduate students would fare in graduate school.

Keywords: Graduate students, Academic Success, GRE, MAT, Grade Point Average

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## **INTRODUCTION**

Due to the extraordinarily extensive practice of using the Millers Analogy Test (MAT) and Graduate Record Examination (GRE) as a major determining factor of graduate school admission for well over five decades now, one has to question if these examinations are still valid predictors of how a potential student will perform in graduate school. Keep in mind there is an emphasis on the word “still.” And should a student be admitted to a specific program just because a particular score was attained? Numerous studies over the years have shown varying degrees of outcomes as to the validity of these examinations.

Although research such as Freeley, Williams, and Wise (2005) and Sternberg and Williams (1997) has shown discrepancies pertaining to the use of these entrance examinations to predict graduate students’ academic success, these tests continue to be a trusted source by which admission committees rely heavily on as a deciding factor for student admission. However, this single factor isn’t normally the only one that is taken into consideration, but the score(s) becomes a prominent factor of consideration. Just because an individual can perform well on a standardized entrance test, how does that relate a person’s propensity for academic success? The individual with the higher scores may be a good test taker, whereas another candidate that didn’t fare very well may not be a good test taker, but possesses just as much promise of succeeding in graduate school as the person that scored highly on the entrance examination. So, what does an inverse low score say to the committee? Does it tell the committee not to waste their time on the person with a low score, as they won’t be as academically successful as the individual that achieved a much higher score?

## **OBJECTIVE OF THIS PAPER**

The intent of this paper is twofold: 1.) raise valid questions and concerns that should be taken into consideration where a minimum score(s) must be achieved on an entrance examination to be favorably considered and ultimately accepted into a graduate school program. 2.) explore how one construct such as an entrance examination predicts an individual’s propensity to be academically successful in graduate school.

## **PROS AND CONS OF USING AN ENTRANCE EXAMINATION**

With the enlightened philosophies existing in America today, why are the ivory towers still operating with these twentieth century premises that entrance examinations are able to predict graduate student success? Peter Sacks (2003) contemplated a similar line of thoughtful inquiry as he asked,

...how did the ‘testing culture,’ as I came to call it, become such an entrenched part of American life? Why even in modern America and its seemingly progressive attitudes about education and democracy, do institutions continue to allocate opportunities to individuals on the basis of performance on such gatekeeping test? (p. 11)

Sacks also hypothesized that institutions make the assumptions in favor of test scores being an accurate predictor of an individual’s abilities to succeed and doesn’t question the validity of their assumptions.

Sampson and Boyer's (2001) study stated the emphasis on the GRE being a major deciding factor of predicting graduate student academic success was only a small factor in this prediction. "What it boils down to is accountability, dollars, and prestige. The desire for accountability by governing boards has caused institutions to associate graduate student quality with performance on nationally normed examinations such as the GRE" (Sampson & Boyer, 2001, p. 6). Funding the institutions of higher learning becomes the driving force behind the usage of a nationally normed tests. According to Sampson and Boyer, the public commissioners for the ivory towers can wield more sway for funding from the state legislators by requiring the powers that be at the universities demand these tests such as the GRE be a requirement for admission purposes, as these tests are "easily quantifiable" (p. 6). The money, in the campus administrators' mind, should be spent on students that will most likely succeed academically and give back to society as they become gainfully employed due to their education attainment (Sampson & Boyer 2001).

According to Kuncel, Hezlett and Ones (2004) study, the MAT has been shown to be an acceptable forecaster of graduate student performance. Kuncel et al. discovered the MAT was positively associated with the time to completion of the graduate degree along with "... a valid predictor of several aspects of graduate student performance as well as measures of job performance, potential, and creativity" (p. 156). Time to completion did not mean they would necessarily finish their degree faster. According to their study, students scoring high on the MAT were apt to use their time in graduate school completing other activities not directly related to their course of study, but to research for example and thereby not finishing the degree in a timely fashion. Kuncel et al. stated if the ultimate goal for the graduate program to amass rapid completers then the MAT would not be a valid measure of student success. If the measure was to "finish at higher rates, acquire field-specific knowledge, are well regarded by the faculty, produce research and are viewed as creative..." then the MAT can be considered to weigh in as a positive predictor of graduate student success (p. 157). In essence, in this case, it depends on what a graduate program considers successful.

Other studies have taken a slightly different stance where entrance examinations are a part of the graduate program entrance process is concerned. Flexibility in the requirement of entrance testing as an option should be considered as an alternative route for admission for some students. Gibson, Leavitt, Lombard, and Morris' (2007) study revealed that students with no entrance examination in their admission files were found to "have slightly higher-grade point averages than..." those students who had taken an entrance examination (p. 2). Their study found no compromise of overall student quality where the test scores were nonexistent in the students' application files.

As in Sacks 2003 study, Gibson et al. (2007) observed older students having strong objections to the requirement of the entrance examination. Most of these adult returning students have been out of school for many years and find themselves "out of practice" where test taking was concerned (p. 5). Test anxiety is a concern to the older students more so than the traditional graduate students. These older students often times do not pursue an advanced degree due to the testing requirement. They are of the mindset "why should I have to sit through a test that takes several hours to complete in order to prove myself when I have been successful in the workforce for many years?" Ultimately, the outcome of the study concluded in favor of tailoring the application process, as the students in their study that were granted admission without an entrance examination often times fared as well and sometimes better than the students who had

taken the entrance test. In essence, why require these tests when factors point to a different route that could be taken and the outcome be the same?

Another factor was considered in the Freeley, Williams, and Wise (2005) study as to whether or not the GRE was ill equipped to judge graduate student success: The test has limited ability to measure specific abilities needed to succeed in graduate school. One major ability that is often times overlooked is "...creative ability or practical ability. Creative abilities are used when one supposes, theorizes, and hypothesizes; practical abilities are used when one applies or does...knowing what to do, how to do it, and the decision to do it" (p. 4). Freeley et al. stated this to be an important ability to possess when considering how many students are All But Dissertation (ABD). Basically, motivation is vital to graduate student success, but entrance examinations do not have the ability to measure this ability. The examinations have never claimed to measure this aspect of graduate student success, yet it can mean the difference between success and failure.

A 2017 study by Moneta-Koehler, Brown, Petrie, Evans, and Chalkley, found the GRE to be lacking severely in "...predicting who will graduate...pass the qualifying exam, have a shorter time to defense, deliver more conference presentations, publish more first author papers, or obtain an individual grant or fellowship" (p. 1). However, their study did suggest that the GRE scores were a bit more likely to predict a student's first semester grades. Ultimately, the study suggested to the admission committees to not rely on the entrance examination to paint a clear picture of how well the potential student will perform in their graduate program. Moreover, proponents of the GRE stated that its "scores do not consist of all the important variables in predicting an individual's success in a graduate program" (Sampson & Boyer, 2001, p. 3)

Sarah Leverett-Main's study (2017) discussed the various screening methods utilized by graduate schools in the United States and asked what they actually predicted. According to her literature review, psychology and counseling students' graduate school success could not be consistently predicted on the basis of GRE scores. As far back as Adedi's (1991) and Goldberg and Alliger's (1992) studies found that it had "been difficult for researchers to find a relationship between GRE scores and any of the measures of successful performance in graduate education" (as cited in Leverett-Main, 2017, p. 209).

House and Johnson's pilot study in 1993 concluded GRE scores along with undergraduate GPA could not ascertain whether students in psychology would complete their program or not. It was suggested that age may play a large part in graduate school success. Older students exhibited higher achievement levels than the entrance examination may have forecasted. The test had predicted younger graduate school students would outperform the older students grade wise. The outcome of the study theorized GRE scores most likely were not able to predict success factors for the older adult returning students.

Thompson and Kobrak discovered using students' GPA in their first three graduate courses were better predictors as to how well a student would perform than an entrance examination (as cited in Oldfield, Kenneth, Hutchinson and Janet study, 1996). Ultimately, their theory held that the GRE was not a practical tool in which to reject a graduate student's entrance into a program. The granting of a probationary acceptance for a specified period of time before admitting the student fully into the program might be a better route to go. According to Oldfield et al., the "GRE is practically useless..." (p. 5).

## **WHAT DOES ETS REPORT?**

Interestingly, the Educational Testing Service (ETS) which proctors the GRE counsels use of the general test scores to be used with caution. According to ETS, the test can't predict specific skills needed to be successful in the various graduate programs and "discourages the use of a cutoff score" (Moneta-Koehler, Brown, Petrie, Evans, & Chalkley, 2017, p. 2). The emphasis here would be on 'specific skills' can't be predicted. Previously, studies from "the ETS' own data sources have indicated the GRE General Test Scores were "slightly to moderately predictive" of the graduate students' first year grade point average (Grandy, 1994).

According to a more recent report from the 2014 ETS GRE Board Research Report, a different prediction about the test and its validity surfaced. After ETS performed their own study the conclusion was, without a doubt, the test was a valid predictor of graduate student success. "In terms of higher education policy for graduate admissions, the results of this study demonstrate that scores from the GRE revised General Test are valid for predicting...academic performance..." (p. 8). The report also added, "The validity evidence from this study indicates that, compared to other information that applicants may submit (e.g., UDPA, the GRE) revised General Test captures information about a candidate that is well-aligned with skills desired by and necessary for success..." (p. 9).

## ONE THEORY OVER ANOTHER

What is one to make of all of this information touting one theory one way and another theory yet another way? What is the answer to this dilemma? In retrospect, the researcher is not necessarily suggesting entrance examinations be totally dismissed. These tests could still be part of the decision-making process, albeit a very minor measure of the process in which informed decisions can be made about potential candidates.

With that being said, which path is the better one to proceed down that would benefit the aspiring graduate students attempting to gain entrance to the university of their choice? Several options do exist out there according to the literature. For one example, an option to revise these tests was considered. The theory was that since the GRE and the MAT have been around for so many decades, why not update these tests to reflect the diversity of the student body entering graduate school? Sampson and Boyer (2001) suggested a revision was needed, as more and more "false negatives" were surfacing. A false negative refers to students that had a sufficient undergraduate GPA but their GRE scores indicated that these students would not be successful in graduate school. As far back as 1997, a study by Sternberg and Williams concluded, gender was a factor that flawed the GRE predictors of graduate school success. The authors inferred "that there is a need to develop better theory-based tests" (p. 630).

Other studies have noted not only a gender bias but a cultural bias as well. According to the GRE score reports, minority students scored considerably lower than that of their non-minority fellow students. Ultimately, according to the entrance examination, these students would not perform as well academically in graduate school. Studies as far back as 2001, have called for a change to the processes of the decision-making formula that has been espoused for so many years by the university admission committees. Sampson and Boyer's (2001) study pertaining minority students' success in graduate school found the following:

In observing the range of GRE scores of these graduate students, it becomes clear that according to some graduate school admissions policies, some students should not have been admitted...let alone actually graduate...This strongly suggests the necessity of focusing on other factors...such as Sedlacek's Noncognitive Variables and other



variables such as individual persistence, motivation, reasoning skills, creativity, interpersonal skills, writing skills and prior achievement...Some of these skills cannot be measured through standardized tests and are never considered in admission decisions. (p. 6).

## **PARTING THOUGHTS**

If one has been around post-secondary educational institutions for a few years, chances are faculty and staff have witnessed instances where students were attempting to gain acceptance to a particular program only to be ultimately rejected due to the attained low entrance examination score(s). This author has in fact encountered numerous situations over the years where students were denied entrance to graduate school due to low entrance examination scores. One particular situation that stands out was when a student graduated Magna Cum Laude with a 3.795 GPA from her Bachelor's Degree program. She subsequently applied to the same university she graduated from with her Bachelor's Degree to a graduate program there. The GRE was taken by the student. She scored below the minimum the university had set. Although she was a proven entity from this same university, she was told "no, you did not meet the minimum score, so you are denied entrance into the graduate program." The student was devastated that her beloved university from which she graduated with high honors, would turn her down because of low test scores and was dismissed by the admission committee without another thought. Six months later, the student applied to a private Catholic college for admission to their graduate program. This program was the same type of program she applied to at the previous university. After seeing her low scores that she had taken previously, the admission committee requested that she either retake the GRE or as another option, she could take the MAT. The student took the MAT and scored just slightly below the college's minimum requirement. However, the admission committee decided to take a leap of faith and she was admitted to the graduate program at the Catholic college. Fast forward eighteen months later, this student completed the graduate program with a 4.0 GPA. In essence, the entrance examination minimum numbers didn't actually predict how well she would perform in graduate school. In the end, she proved them wrong.

This one instance shows how basing one's future academic success on a set of numbers such as the GRE or MAT score reports seems rather unjust and highly irrational. Would not a more accurate picture be painted of an individual when considering the person as a whole rather than using an entrance examination score as the major deciding factor in whether the potential student will or will not be successful in graduate school? Would this not level the playing field to where the individual is considered rather than just that number? Has our society progressed to the point of where we are no longer individuals, but numbers? Each person has something unique to contribute to society, so why not allow that person to do so? This is not to say stop using the entrance examinations, but don't base someone's future on just that aspect alone.

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