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## Relationship Between Traditional Graduate Admission Criteria and Student Academic/Clinical Outcomes for Speech-Language Pathology Graduate Students

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# Relationship Between Traditional Graduate Admission Criteria and Student Academic/Clinical Outcomes for Speech-Language Pathology Graduate Students

## Abstract

Speech-language pathology graduate admission committees frequently try to identify candidates who will succeed academically and clinically in graduate school while ensuring career readiness. This retrospective study focused on graduate admission criteria and student academic and clinical outcomes for eighty students who completed a graduate program in speech-language pathology from 2016 to 2020. Statistical analysis was used to determine if relationships existed between traditional admission criteria and students' academic and clinical outcomes. This study found the objective admission variables (i.e., undergraduate GPA and GRE scores) significantly correlated with academic outcomes. Specifically, undergraduate GPA (uGPA) correlated to graduate GPA (gGPA), and the GRE scores correlated to Praxis speech-language score. No correlation was found between non-cognitive (objective) admission criteria and student academic or clinical outcomes.

## Keywords

Traditional Graduate Admission, Student Outcomes

## Cover Page Footnote

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Today's economic and employment landscape is bringing more attention to the need for advanced education. A variety of entry-level careers are now requiring an advanced degree, thus increasing the demand for master's degree programs (Okahana et al., 2018; Torpey & Torrell, 2015). Graduate admission decisions, unlike undergraduate admission, are typically decentralized, and the decisions are often made by a small department or a selected committee within a specific department (Kent & McCarthy, 2016; Orfield, 2014). The demand for speech-language pathologists is on the rise, according to the U.S. Bureau of Labor and Statistics, and growing at a rate of 19%, much higher than the 3% growth of most occupations. (Bureau of Labor Statistics, 2023). In the 2021-2022 academic year, there were 307 accredited graduate programs in speech-language pathology in the United States. Of those graduate programs, there were a total of 54,893 applicants, with 22,845 (41%) receiving offers of admission (Council of Academic Programs in Communication Sciences and Disorders [CAPCSD] and the American Speech-Language-Hearing Association [ASHA]), 2023). Speech-language pathology graduate admission committees are presented with the challenging task of reviewing a large number of highly qualified applicants, with limited variability, for a relatively small number of openings (Forrest & Naremore, 1998; Halberstam & Redstone, 2005; Tekieli Koay et al., 2016; Troche & Towson, 2018).

Despite the increasing number of applicants, graduate admission criteria across programs within the United States have been relatively consistent. A 2019 study of graduate admissions criteria found that the most frequently requested admission materials consisted of transcripts, undergraduate grade point average (uGPA), standardized test scores (e.g., the Graduate Record Examination [GRE]), letters of recommendation, and a personal statement (Michel et al., 2019). Graduate programs often rely on academic performance across an undergraduate degree program to determine "success" in graduate studies. Okahana and colleagues (2018) reported that over 99% of graduate programs require transcripts and use them to evaluate past academic performance. In addition, 84% of professionally focused graduate program directors reported successful completion of undergraduate coursework as an essential aspect of the admission process.

The emphasis on academic variables for determining graduate admission into speech-language pathology programs has been reinforced by research for more than two decades. Forest and Naremore (1998) found that uGPA could determine graduate success with 93.3% accuracy. Halberstam and Redstone (2005) found a strong link between uGPA in communication disorders coursework and gGPA, as well as faculty ratings of student clinical performance (high/low). In addition, they found a significant correlation between overall uGPA and gGPA (Halberstam & Redstone, 2005). Furthermore, Guiberson and Vigil (2020) found that 85% of speech-language pathology graduate programs use a minimum grade point average as part of the screening process, and 73% reported that uGPA was the most important variable in screening decisions. Despite these findings, there is a need to examine the relationship between uGPA and graduate outcomes (gGPA, Praxis, and clinical outcomes) to ensure that uGPA continues to be a consistent predictor of graduate student performance.

In addition to uGPA and standardized entrance examinations such as the GRE, graduate admission committees often request application materials such as letters of recommendation and personal statements. Letters of recommendation continue to be a part of the admission criteria for graduate programs across disciplines (Halberstam & Redstone, 2005; Kuncel et al., 2014; Michel et al., 2019; Okahana et al., 2018). Halberstam and Redstone (2005) completed a correlation study

examining how admission material, including letters of recommendation, correlated to academic outcomes and positive clinical ratings. Their findings indicated that letters of recommendation were effective in predicting how students would perform academically in graduate school. Kuncel and colleagues (2014) studied recommendation letters and graduate outcomes, such as gGPA, by running a meta-analysis that found a modest correlation between the two variables. This study suggested that programs develop a systemic structure around recommendation letters to ensure they are assessing the correct constructs, specifically around motivation and persistence (Kuncel et al., 2014).

Okahana and colleagues (2018) reported that personal statements were used by graduate programs to assess cognitive (objective) and noncognitive (subjective) characteristics. This study found that 54% of participating graduate programs require personal statements as part of the graduate admission process. The most common use (89%) was to assess applicants' written communication skills. However, over 70% of program directors reported using personal statements to assess noncognitive skills such as curiosity and creativity. Murphy and colleagues (2009) found that personal statements are not effective in predicting academic success when contrasted with uGPA and GRE scores. However, the authors suggested that the power in personal statements was around noncognitive skills and ensuring "program fit" (Murphy et al., 2009). Halberstam and Redstone (2005) explored the predictive value of speech-language pathology graduate admission materials, looking at objective and subjective measures. Their research indicated that personal statements were effective in predicting gGPA but were less effective in predicting clinical performance. Nonetheless, the authors found that personal statements can be a helpful part of the admission review for speech-language pathology.

While the correlation between uGPA and academic performance seems clear, the relationship between uGPA and letters of recommendation and personal statements needs additional research. In addition, the relationship between these variables and clinical performance remains unclear. In the studies that have been conducted, clinical skills have been defined differently, such as the use of clinical grades, clinical educator/faculty ratings of the student's clinical skills, or use of the Praxis speech-language score (Baggs et al., 2015; Kjelgaard & Guarina, 2012; Halberstam & Redstone, 2005). Reisfeld and Kaplan (2022) completed a systematic literature review to predict clinical success in Graduate Health Science fields, including speech-language pathology. They determined that there is no clear outcome measure for clinical skills, and therefore, the lineage of admission criteria to student's clinical outcomes are unclear.

The traditional approach to admission has focused on academic metrics such as GPA, GRE, and other quantifiable data. The Association of American Medical Colleges (AAMC) has challenged the traditional approach to graduate admission. It has provided guidance to assist the graduate committee in moving toward a holistic graduate admission process. AAMC defines Holistic review as a flexible, individualized way of assessing an applicant's capabilities by which balanced consideration is given to applicant's experiences, attributes and academic metrics in identifying individuals who may contribute to your school's mission, goals and learning environment (AAMC, 2023, p.1)

While previous research has examined the relationship between many of the traditional admission variables individually, there is a need for additional research that examines the relationships across

variables. Limited studies have looked at admission criteria and their relationship to student academic and clinical outcomes. The purpose of this study was to determine if there was a relationship between traditional intake criteria including uGPA, GRE, personal statements and letters of recommendation, and student's academic (gGPA, Praxis for SLP) and clinical outcomes.

## Method

**Participants.** Archived data was utilized from a Midwestern metropolitan university speech-language pathology graduate program. This retrospective quantitative study used de-identified student data collected as part of the application process along with program outcomes from fall 2014 entry to 2020 summer graduation. The sample was comprised of eighty students who entered and completed the speech-language pathology graduate program between Fall 2014- Summer 2020. Four students began the program but did not complete the program. One was dismissed and the other three withdrew during or following one semester of the program for personal reasons. These four students were not included in the analysis as post-data was unavailable. The remaining students included in the study were 99% female, 92% white, and 94% were traditional graduate students. The diversity of the student population was limited; eight percent identified as being of racial/ethnic diversity, and only one male completed the program during this time.

The national average for uGPA admitted into a speech-language pathology graduate program during the 2021-2022 ranged from 3.11-3.99 (CAPCSD & ASHA, 2023). The students in this study had an average undergraduate uGPA of 3.7. The average Praxis Speech-Language Pathology score for the students in this study was 175, which is close to the 2020-2021 national mean of 174 (ASHA, 2021). Table 1 highlights the descriptive statistics for the cohort in this study.

**Table 1**

*Descriptive Statistics of Participants Admission and Outcome Criteria*

Criteria	Mean	Minimum	Maximum
Undergraduate GPA	3.7	3.08	4.0
GRE- Verbal Reasoning	149.6	138	162
GRE- Quantitative Reasoning	146.9	137	155
GRE – Analytical Writing	3.86	2.5	5.5
Graduate GPA	3.84	3.3	4.0
Praxis	175	163	190
Clinical Diagnostic Skills	4.43	3.84	4.94
Clinical Treatment Skills	4.48	3.74	4.86
Clinical Professional Practice	4.53	4.14	4.79

*Note. Participants (n=80)*

## Procedures

**Admission Criteria.** The following admission data collected by the program included uGPA, GRE scores (analytical writing, verbal reasoning, and quantitative reasoning), two letters of recommendation, and a statement of purpose. The statement of purpose asked the students to describe their long-range goals in the profession, explain what distinguishes them from other candidates, explain their experiences with individuals with special needs, and summarize a research-based article within their area of interest within the field of communication disorders. Two faculty members rated the students' statement of purpose, during the application process, on a 1-4 point scale (4 = Outstanding; 3 = Strong, 2 = Average, 1 = Fair). A student's statement of purpose was considered "Outstanding" if they addressed each of those attributes in a thorough manner that aligned with the goals of the profession. Student statements of purpose that addressed some aspects of these attributes were then rated accordingly from Strong, Average, to Fair. The faculty ratings were averaged and then put into two categories for analysis: high (3-4.0) and low (1-2.9).

In addition to the statement of purpose, two letters of recommendation were collected as part of the admission process for each candidate. The letters were reviewed by two faculty members. The scores range from 0-4-point scale (4 = Outstanding; 3 = Strong, 2 = Average, 1 = Fair). A letter of recommendation was considered "Outstanding" if it was written by a faculty member who was familiar with the student and addressed the student's potential for academic and/or clinical success in speech-language pathology at the graduate level. Recommendations that partially addressed the student's potential for success or were from people with limited experience in speech-language pathology were scored lower. For this study, the scores were averaged, and then for analytical purposes, the ratings were put into two categories: high (2.5-4) and low (1-2.4).

**Student Outcomes.** Program outcome data included gGPA, Praxis speech-language score, cumulative clinical evaluation score, and self-report of preparation to practice. Taking the Praxis Speech-Language Pathology test is a required component of the graduate program. The cumulative clinical evaluation is part of the program requirements to ensure students are clinically competent and meet the Council on Academic Accreditation (CAA) and Council for Clinical Certification (CFCC) clinical standards for entry into the profession. There are three areas of the cumulative clinical evaluation: Evaluation Skills, Treatment Skills, and Professional Practice, Interaction & Personal Qualities. The rubric for Evaluation Skills and Treatment Skills are separated into subscores in each of the "Big Nine" areas of communication disorders. (i.e., articulation, fluency, voice and resonance, language, cognition, hearing, swallowing, social communication, and communication modalities.) The student is scored by their clinical educator during each clinical experience throughout their graduate program. The rating in each of the three areas is on a 1-5 rubric, with five being the highest score. All students must meet minimal benchmarks (3.0) across all domains and items. This tool serves to ensure students possess clinical competency across the breadth and depth of speech-language pathology diagnostic categories as part of their master's degree requirements. Students complete an exit survey upon completion of the graduate program. As part of this survey, students report if they feel prepared in the areas of diagnostics and intervention.

## Results

A Pearson correlation was run on parametric data to look for a linear relationship between admission criteria and graduate outcomes. The correlation coefficient can range from -1 to +1 with -1 indicating a perfect negative correlation, +1 indicating a perfect positive correlation, whereas 0 indicates no correlation. The results indicated four positive correlational relationships between admission criteria and academic and clinical outcomes (see Table 2).

**Table 2**

*Pearson r Correlation Matrix for Cognitive Admission Criteria and Student Outcomes*

Admission Criteria	gGPA	Praxis	Clinical dx	Clinical tx	Clinical prof
uGPA	.252*	.170	-.050	.079	.130
GRE – V	-.131	.418**	.103	.001	.082
GRE- Q	.131	.186	.169	.059	.162
GRE -W	.183	.299**	.221*	.176	.162

*Note.* \*Correlation is significant at the .05 level; \*\*Correlation is significant at the .01 level

The lowest correlations were between uGPA and gGPA ( $r = .252$ ) and GRE-Analytical Writing and Cumulative Clinical Diagnostic Skills rating ( $r = .221$ ). The highest correlations were with two sections of the Graduate Record Examination (GRE) and the Praxis speech-language exam. The GRE-Verbal Reasoning and Praxis speech-language exam had the highest correlation ( $r = .418$ ) and the GRE-Analytical Writing and Praxis exam had a moderate correlation ( $r = .299$ ).

Point Biserial Correlation was used to measure the strength and direction of association that may exist between a continuous variable and a dichotomous variable. Admission criteria of personal statements and letters of recommendation were grouped by high and low ratings. Personal statements were scored on a four-point scale by two raters and then averaged, high, rating of 3 or above ( $n = 37$ ) and low, rating below 3 ( $n = 42$ ). Letters of recommendation were rated using a four-point scale by two raters and then averaged for a final score, a high rating of 2.6 or above ( $n = 29$ ) and low rating of 2.5 or below ( $n = 41$ ). Table 3 illustrates the p values for point biserial correlations where the dichotomous variable for admission criteria compared to a continuous variable for outcome measures (graduate GPA, Praxis speech-language score, clinical diagnostic skills, clinical treatment skills, and clinical professional practice, interaction, and personal qualities). No significant correlations were found.

**Table 3***Point Biserial Correlation for Noncognitive Admission Criteria and Student Outcomes*

Noncognitive Criteria	gGPA	Praxis	Clinical dx	Clinical tx	Clinical Prof
Personal Statement (high/low)	.200	.111	-.014	-.023	-.080
Letter of Recommendation (high/low)	.158	.090	-.006	.063	.056

*Note.* No significant correlations ( $p < .05$ ) were found.

**Discussion**

The results of the study showed that there was a limited statistical relationship across the variables utilized in traditional admission that determines graduate school performance in speech-language pathology. Given the lack of a relationship across the variables, the variables that did correlate became more meaningful despite the low correlations. The relationship between uGPA and gGPA was low (.252). However, it does add some support to previous research (Forest & Naremore, 1998; Halberstam & Redstone, 2005; Reisfeld & Kaplan, 2022; Troche & Towson, 2018), which has found uGPA to be a predictor for gGPA.

The correlations between the GRE Verbal Reasoning and Analytical Writing subscales and the PRAXIS scores were unsurprising, as we would expect a student who does well on a standardized test would perform well on similar tests. These results align with previous research which found a correlation between GRE and Praxis scores (Baggs et al., 2015; Reed, 2007). Considering the relationship between these measures it is worth noting that the GRE has documented biases that may negatively impact some applicants (Kovacs, 2022). As speech-language pathology graduate programs consider transitioning to holistic admissions approach, programs must be reflective of potential barriers and biases that may exist. The lack of a correlation between subjective measures, including letters of recommendation and statement of purpose, and gGPA and clinic evaluations was somewhat surprising; however previous research has been inconclusive in the relationship between these variables. Indeed, the subjective nature of evaluating letters of recommendation, purpose statements, and clinical evaluation performance can make it difficult to quantify their relationships accurately. Previous research has also struggled to identify a relationship between these noncognitive variables (Reisfeld & Kaplan, 2022).

A relationship between GRE -Analytical Writing and Cumulative Clinical Diagnostic Skills rating ( $r = .221$ ) was found. A recent systematic review by Reisfeld and Kaplan (2022) examined graduate admission and clinical skills on health professions, including speech-language pathology. They found that the link between GRE and clinical performance was weak to not existing in the studies they reviewed. However, there was no consistency in how clinical skills were measured across these studies which may impact their validity when compared.

**Limitations.** The results from this study provide additional insight into the relationship between traditional admission criteria and student outcomes; however, there are several limitations to consider in the analysis of this study. The data was collected as a retrospective review of records



from one Midwest speech-language pathology graduate program, with a limited sample size and similar demographic. Future research should examine the relationships between these variables in more diverse settings and across additional universities.

Subjective measures, which included letters of recommendation, personal statements, and clinical evaluations, were utilized without assessing interrater reliability. This could potentially account for inconsistent evaluations and is a significant limitation of this study. In addition, the rubric utilized for letters of recommendation and personal statements may be more in line with academic outcomes and limited in predicting clinical outcomes. Future studies analyzing subjective measures of admission criteria should examine interrater reliability to ensure consistency of evaluation outcomes. Furthermore, some outcome variables, such as the cumulative clinical evaluation (diagnostics, treatment, and professional practice), are based on the program's chosen rating scale. Items rated are cross walked with CAA and CFCC standards; however, measurement of cumulative clinical practice may differ by program.

**Implications.** This study adds to research investigating the relationship between graduate admission criteria and student outcomes (academic and clinical). The results from this study provide additional support of the relationship between uGPA and gGPA. In addition, a correlation between GRE and Praxis-SLP was found. This relationship was expected as both are standardized assessments. However, there is a need for additional research around subjective admission criteria measures, including letters of recommendation and personal statements. Specifically, institutions should assess interrater reliability when evaluating these measures and continue to conduct research to determine if there is a relationship to student performance in graduate school. Sedlack (2004) stated that raters must be trained and reliable on scoring student's personal statement in order for ratings to be valid indicator of the applicant's success. Even though there was no relationship between subjective measures and student outcomes in this study these measures are valuable and warrant additional investigation.

There has been increasing recognition of the importance of identifying graduate students that best fit the institution's graduate program's mission, vision and goals. This approach brings a fundamental change from the traditional admission process of focusing on academic metrics to expanding the criteria to consider characteristics beyond academic achievement (Mandulak, 2022; Wong et al., 2021). While the results from this study continue to support the use of uGPA for graduate school consideration, it also demonstrates the need for more research on the use of subjective measures to facilitate the move towards a more holistic approach to the graduate admission process.

## **Disclosures**

There are no financial or nonfinancial relationships associated with the submission of this manuscript as it pertains to all of the authors.

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