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THE PREDICTABILITY OF PRE- AND POST-UNIVERSITY MEASURES FOR PGAT PERFORMANCE OF TEACHERS OF STUDENTS WITH LEARNING DISABILITIES

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ABSTRACT

The purposes of this study were: (1) determine the current Post-Graduate Aptitude Test (PGAT) performance status of teachers of students with learning disabilities (LD), and (2) to investigate the relationship between teachers of students with LD's performance in PGAT, and demographics variables (years since graduation, age, gender), pre-university measures (General Aptitude Test [GAT], Standard Achievement Admission Test [SAAT]), and post-university measures (Cumulative Grade-Point Average [CGPA], Teacher Licensure General Exam [TLGE] score, Teacher Licensure Specialization Exam [TLSE] score). The study sample included 2453 preservice and inservice teachers of students with LD, who have taken the PGAT. A multiple regression analysis was conducted to investigate the relationship between pre- and post-university measures and the PGAT performance of teachers of students with LD. The results revealed that the combined model of pre-university and post-university measures significantly predicted teachers of students with LD's performance in the PGAT. The overall regression model was statistically significant, $F = 475.63$, $p < .001$, explaining approximately 49.3% of the variance in PGAT scores ($R^2 = .493$). The findings also indicated that GAT was strongest predictor in the entire model ($\beta = .42$, $p < .001$). For every one-point increase in the GAT score, the PGAT score is predicted to increase by 0.56 points, highlighting the dominant role of general aptitude in this assessment. The implications for policy, research, and practice are highlighted and discussed.

KEYWORDS: Teacher of Students with LD, Post-Graduate Aptitude Test, General Aptitude Test, Standard Achievement Admission Test, Cumulative Grade-Point Average, Teacher Licensure General Exam, Teacher Licensure Specialization Exam.

1. INTRODUCTION

Worldwide, the number of students applying for postgraduate programs have increased over the years. In Saudi Arabia specifically, professionals and students have an increasing interest postgraduate education, especially in the education sector. In response to the demand for postgraduate education, the number of universities and postgraduate programs through the past two decades have increased drastically (Alghamdi & Al-Hattami, 2014; Hamdan, 2017). This expansion has encouraged universities to set rigorous admission criteria and higher standards to accept students into postgraduate programs (Hamdan, 2017). Therefore, the selection process in Saudi higher education institutions, especially when it comes to graduate education programs, is rigorous and can possibly be challenging.

Since graduate programs in Saudi Arabia commonly encounter a challenging task while reviewing and considering applicants to be accepted into the program, they use multiple measures and criteria to whether or whether not admit those students; graduate programs usually ask students to submit their personal statements, two to three recommendation letters, transcripts, and curriculum vitae (CV), and some ask for an interview. They also require students to submit they undergraduate GPA, achievement tests, and aptitude tests (Al Alwan et al., 2013; Al Qurashi et al., 2025). However, Saudi postgraduate programs only consider two measures: undergraduate GPA and the standardized aptitude tests, which is Post-graduate General Aptitude Test (PGAT).

Graduate programs in general aim to admit applicants who have the potential to become professionals who add value to the job market and may become transformative leaders in their fields (Al-Asmar et al., 2021; Kool et al., 2016). This goal has resulted in increasing the admission standards (Hudson et al., 2020); one of the possible solutions that ensure the right comparability of graduate applicants is standardized aptitude testing. Standardized aptitude tests are critical for admitting postgraduate students because of multiple factors.

First, unlike achievement tests, which measure students' gained knowledge of the classrooms' curriculum, aptitude tests measure students' verbal and quantitative abilities (Alnahdi, 2015; Koljatic et al., 2013). Second, aptitude tests commonly predict students' readiness for graduate programs at the university. Third, these tests are an indication of students' future academic success and achievement (Evans, 2015; Vista & Alkhadim, 2022), including

getting a good GPA, graduating on time, and overall productivity throughout their graduate journey (Rankin, 2022). Fourth, aptitude tests create more fair, realistic, objective, reliable, and transparent admission procedures (Curabay, 2016; Kuryseva et al., 2024). In this paper, I focus on PGAT, which is the official aptitude test for graduate programs in higher education institutions in Saudi Arabia.

1.1. *Post-Graduate General Aptitude Test (PGAT)*

PGAT, which is similar to Graduate Record Examination (GRE), is a standardized and mandatory test that is taken by students seeking postgraduate admission (Master's or Doctorate) in Saudi Arabian higher education institutions (Education and Training Evaluation Commission, 2026). This test, designed and constructed by the National Center for Assessment (NCA) at the Education and Training Evaluation Commission (ETEC), helps graduate programs with identifying and selecting applicants who have the potential to succeed in and navigate graduate school. It can also predict applicants' future achievement in graduate programs (e.g., graduate GAP, overall performance, graduation). PGAT is divided into five sections, verbal, quantitative, critical thinking, figures, and logic sections; each section contains 24 multiple-choice questions, totalling of 120 questions. This test, therefore, measures students' verbal, and quantitative, and logical abilities, such as reading and comprehending texts, distinguishing the logic structure of linguistic expressions, solving mathematical-based problems, perceiving logical, spatial and non-spatial relationships, analyze, induct, and interpret the results (Education and Training Evaluation Commission, 2026).

PGAT is administrated digitally and available in Arabic language. It should be mentioned that PGAT's psychometric characteristics were examined and validated by Qiyas, and they were satisfactory. Using multiple methods, Dadandari and Almeri (2025) verified that validity and reliability of PGAT. They found that the correlation coefficients between the scores and each sub-test of the test (verbal, quantitative, and logical) and the total scores were high (0.88, 0.78, and 0.82, respectively); in regard to construct validity, all items revealed acceptable to significant correlations with the sub-test scores they belong to; Dadandari and Almeri (2025) also estimated the internal consistency of the overall test and sub-test scores using Cronbach's alpha; the values for the verbal, quantitative, and logical sections for females were (0.74, 0.64, 0.61, and 0.84)

and (0.78, 0.67, 0.60, and 0.86) for males and the total scores.

1.2. Related Literature

To the researcher's knowledge, no studies have been conducted on PGAT within the context of Saudi Arabia; therefore, the following literature can be directly or indirectly related to PGAT. Many of the studies identified within the Saudi context focused on the predictability of the general aptitude test (GAT), Scholastic Achievement Admission Test (SAAT), and high school grade point average (HSGPA) for undergraduate students' achievement. In fact, multiple research teams (e.g., Al Alwan et al., 2013; Alghamdi & Al-Hattami, 2014; Alnahdi, 2015; AlQataee, 2014) have found a significantly positive relationship between pre-university measures (GAT, SAAT, HSGPA) and university achievement, such as first semester GPA, first year GPA, or cumulative GPA. In the following lines, the studies presented are related to undergraduate measures within the Saudi Arabian context as well as other studies focused on GRE, which is similar to PGAT.

Al-Qahtani and Alanzi (2019) compared the predictive value of university admission measures (high school grades, aptitude test scores, achievement test scores) on university's GPA over three years of students enrolled in health and non-health science majors at Imam Abdulrahman Bin Faisal University (IAU) during the 2012-2013 academic year. They found significant positive relationship between the three admission measures and the annual GPA scores for both the health and non-health colleges. The researchers concluded that high school grades significantly predicted of the annual GPA scores, while aptitude test scores were not significant predictors of the annual GPA scores of students studying in the health and non-health colleges. Using a cross-sectional study of 2019, Alhifany et al. (2020) investigated the relationship between the following predictors: HSGPA, GAT, SAAT, preparatory year GPA, pharmacy GPA, and all courses' grades, and the Saudi Pharmacists Licensure Examination (SPLE) scores of 105 pharmacy graduates in a Saudi college. The findings revealed a significant correlation between preparatory year GPA and pharmacy GPA with SPLE scores ($r = 0.228$, $p = 0.0193$ and $r = 0.533$, $p < 0.0001$, respectively).

Alhurishi et al. (2021) examined the relationship between high school GPA, aptitude test (APT) score, achievement test (ACT) score, and the current college GPA of 1634 students enrolled in the following Saudi health colleges: College of Applied Medical Sciences,

College of Nursing, and Prince Sultan bin Abdulaziz College for Emergency Medical Services. The results indicated a significantly positive correlation between HSGA, ACT, and APT, and students' current college GPA; the researchers also found that the regression model revealed that the aforementioned predictors explained 26.5% of the variance in students' cumulative GPA at the graduation time. Furthermore, Al-Asmar et al. (2021) examined the correlation between high school GPA and graduating academic achievement of 828 dental students enrolled at the University of Jordan between 2010 and 2014. The results indicated a significant but weak correlation ($r = 0.3$) between high school GPA and graduating academic achievement. In addition, Vista and Alkhadim (2022) examined the correlation between pre-university measures (high school GPA, GAT, and SAAT) and university success, specifically preparatory year GPA, cumulative GPA, and graduation) of 330,684 undergraduate students across 23 universities in the Kingdom of Saudi Arabia. The results revealed that pre-university measures were significant predictors for university success.

Kurysheya et al. (2024) investigated the predictability of GRE for GPA of 167 master's students majoring in Science, Technology, Engineering, and Mathematics (STEM) at a European university. They found that GRE significantly predicted master's students success and GPA. Similarly, Klieger et al. (2014) examined the relationship between GRE and cumulative GPA of 24,000 master's and doctorate applicants; they also found that GRE significantly predicted cumulative GPA. Althewini (2025) studied the relationship between two admission measures (GAT and SAAT) as well as English proficiency, and the performance a required introductory physics course of 250 students enrolled in a Saudi university. The findings revealed that the **abovementioned** variables significantly predicted students' performance in the physics course, they all explained 29.3% of the variance in physics performance. Al Qurashi et al. (2025) investigated the relationship between undergraduate GPA and the Saudi Medical Licensing Exam (SMLE) performance of 729 medical graduates from the College of Medicine, King Saud bin Abdulaziz University for Health Sciences (COM-KSAU-HS). Through a cross-sectional study, they reported the difference in medical students' performance over the years from 2015/2016 to 2021/2022. The results revealed a significant positive relationship between the overall GPA and SMLE score, meaning graduates' GPA could predict SMLE performance.

1.3. Rational and Significance

Within the aforementioned literature, it is evident that most studies within the Saudi context (e.g., Alhurishi et al., 2021; Al-Qahtani and Alanzi, 2019; Vista & Alkhadim, 2022) have focused on the predictability of pre-university measures (e.g., GAT, SAAT, GPA) for undergraduate students in higher education institutions. Other studies (Klieger et al., 2014; Kuryshaya, 2024), out of the Kingdom of Saudi Arabia, studied the predictability of GRE for graduate students' future achievement. Only one study (Al Qurashi et al., 2025) focused on the association between undergraduate GPA and the SMLE for graduates in the schools of medicine. However, none of these studies have focused on investigating teachers' performance of PGAT, specifically within the education sector. In the case of teachers of students with learning disabilities (LD), they will be educating students with LD, so they must seek higher education and further professional development opportunities that enable them to enhance their theoretical and practical knowledge. The strongest professional indicator of their readiness for graduate education is PGAT. However, it is questionable what factors contribute most to their performance in PGAT.

This study is significant for the following factors. First, based in the Saudi Vision 2033 and the Ninth **National** Development Plan, the Saudi government indicated that higher education institutions must prepare professional graduates who can contribute to the government's ambitious projects that have been launched to transform the society and empower the citizens to be well-educated (Ministry of Economy and Planning, 2010). Second, with the advancement in inclusive education and development of the Law on the Rights of Persons with Disabilities (2023), higher education institutions within the Kingdom of Saudi Arabia stressed on the criticality of teacher education programs' graduates; in order to ensure the aforementioned rights, teachers of students with LD should be ready for postgraduate education since they will be eventually responsible of a vulnerable group, which are students with LD. PGAT can ultimately serve as a fair and accurate, standardized benchmark to select students with the necessary intellectual capacity for postgraduate studies.

Third, based on the identified literature, no study has been conducted to investigate the pre-university and post-university factors contributing to the PGAT performance of teachers of students with LD. Therefore, more researcher is needed regarding the relationship between pre-university and post-

university measures and the PGAT performance of teachers of students with LD. This study fills the gap through determining the most significant predictors of the PGAT performance of teachers of students with LD. This study can ultimately serve teachers education programs, policymakers, schools as well practitioners in multiple ways. The results of this study can enable universities to change their admission criteria and reform their teacher education curriculums, help policymakers with developing and improving policies related to teacher education, and empower schools to develop inclusive education curriculums, settings, and practices.

1.4. Purpose and Research Questions

The purposes of this study were: (1) determine the current PGAT performance status of teachers of students with LD, and (2) to investigate the relationship between teachers of students with LD's performance in PGAT, and demographics variables (Years since Graduation, Age, Gender), pre-university measures (GAT, SAAT), and post-university measures (Cumulative Grade Point Average [CGPA], Teacher Licensure General Exam score [TLGE], Teacher Licensure Specialization Exam score [TLSE]) through addressing the following questions:

- (1) What is the current status of teachers of students with LD's performance in the PGAT?
- (2) To what extent do the following demographic variables (Years since Graduation, Age, Gender) predict teachers of students with LD's performance in PGAT?
- (3) To what extent do pre-university measures (GAT score, SAAT score) predict teachers of students with LD's performance in PGAT?
- (4) To what extent do post-university measures (CGPA, TLGE score, TLSE score) predict teachers of students with LD's performance in PGAT?
- (5) To what extent do the combined pre- and post-university measures predict teachers of students with LD's performance in PGAT?

2. METHODS

2.1. Research Design

A quantitative correlational research design was utilized in this study, which aims to identify the factors that most predict PGAT performance of teachers of students with LD who graduated from Saudi Arabian higher education institutions during the years 2020-2022. The correlation design enables for investigating the relationship between the following variables: demographics variables (Age, Gender, Years since Graduation), pre-university

measures (GAT, SAAT), and post-university measures (CGPA, TLGE score, TLSE score) and teachers of students with LD's performance in PGAT.

2.2. Sample and Procedure

The data were requested and obtained from the National Center for Assessment (NCA) in the Education and Training Evaluation Commission (ETEC). The sample included 2453 who teachers of students with LD; some of them were preservice teachers while others were inservice teachers. The teachers studied in 19 public and private universities and took the PGAT in 2020-2021 or 2021-2022. The sample contained 1036 females (42.2%) and 1417 males (57.8%).

2.3. Measures

2.3.1. Age

Age was represented with birthdate (e.g., 2001); however, the birthdates were converted to represent ages (e.g., 37 years).

2.3.2. Gender

The gender was represented as female or male.

2.3.3. Years since Graduation

The graduation date represents the number of years since the teacher graduated from the university. In the raw data, the graduation date was represented by the exact year of graduation; however, the exact years were converted into the number of years since graduation.

2.3.4. General Aptitude Test (GAT)

The GAT is a general cognitive ability test developed by the NCA at ETEC. Students usually take such test before or after graduating from high school because it is an admission requirement for the Saudi universities. It measures two different cognitive areas: the verbal (GAT-V) and quantitative (GAT-Q). The GAT-V contains 65 multiple-choice questions covering three content-specific domains: analogy (21 items), sentence completion (17 items), and reading comprehension (27 items). The GAT-Q includes 55 multiple-choice items covering five content areas: arithmetic (20 items), geometry (13 items), algebra statistical and analytical (15 items), and comparison questions (7 items). Previous studies (e.g., Dimitrov, 2013; Dimitrov et al., 2015; Dimitrov & Shamrani, 2015) have shown that GAT is a reliable test since the alpha reliabilities range from 0.73 to 0.82 for both verbal and quantitative sections. The total score of the GAT was used in this study.

2.3.5. Standard Achievement Admission Test (SAAT)

The SAAT is standard achievement admission test developed and administered by Qiyas in (ETEC). It focuses on the content of the three-year scientific curriculum of high schools in Saudi Arabia. For the high school science track, it covers and assesses four main areas: Biology, Chemistry, Physics, and Mathematics for the high school humanities track, it covers the following main subjects: Hadeeth (Prophet's Tradition) and Islamic Culture, Monotheism and Jurisprudence, Arabic Syntax, Morphology and Literature, History, and Geography. The SAAT paper-based comprises of 110 multiple-choice questions, while the SAAT computer-based contains 88 questions, which are distributed as follows: 20% of each subject for the first year of the high school syllabus, 30% of each subject for the second year of the high school syllabus, and 50% of each subject for the third year of the high school syllabus. The testing time for each section is 25 minutes. Previous literature (e.g., Tsaousis et al., 2018) have indicated that SAAT is reliable test, with alpha reliabilities ranging from 0.62 to 0.74. The total score of the GAT was used in this study.

2.3.6. Cumulative Grade Point Average (CGPA)

CGPA is the GPA that teachers of students with LD obtain at the time of graduating from the university. The CGPA is represented on scale of 4, 5, or 100 depending on the university. However, it was converted into 100 in this study to account for the university's GPA variations.

2.3.7. Performance in the Teacher Licensure General Exam (TLGE)

The TLGE is a standardized test that measures the teacher's theoretical and practical knowledge within the education field. This test represents the scores that teachers of students with LD attained after taking the TLGE. This test consists of three domains: (1) professional values and responsibilities, (2) professional knowledge, and (3) professional practice. The total score of the TLGE was used in this study. It should be noted that the three domains include the 10 standards:

- Commitment to Islamic values and ethics, and strengthening the national identity and the profession ethics
- Continuous professional development
- Professional interaction with educators/colleagues and society
- Familiarity with linguistic, quantitative, and

digital skills

- Knowledge of students and their learning
- Knowledge of content specialization and

teaching methods

- Knowledge of general teaching methods
- Lesson planning and implementation
- Creating interactive and supportive learning

environments for students

- Assessing/evaluating students'

performance (Professional Standards and Tracks for Teachers in Saudi Arabia, 2017).

2.3.8. Performance in the Teacher Licensure Specialization Exam (TLSE)

The TLSE is a standardized test that measures the teacher's theoretical and practical knowledge in their own specializations (in this case, the LD specialization). This test represents the scores that teachers of students with LD attained after taking the TLSE. The total score of the TLSE was utilized in this study. It should be noted that the TLSE includes 18 standards (with 108 indicators):

- Philosophy, concepts, policies and foundations
- General causes of disability, developmental characteristics and individual differences
- Principles and methods of measurement, evaluation and diagnosis in special education
- Individualized educational program and its implementation procedures
- The concept of early intervention and its applied practices
- The concept of inclusive education and its applications
- Positive behavior support programs (PBS)
- Mastering the roles of counseling, collaborative teamwork, and teamwork in special education
- The teacher develops independent skills and offers transition programs for students with disabilities
- The concept and importance of family partnership in special education
- Knowledge about the general foundations in field of learning disabilities
- Knowledge of the general characteristics of students with learning disabilities
- Knowledge of how students with learning disabilities learn
- Knowledge of teaching methods for students with learning disabilities
- Designing comprehensive learning programs in the field of learning disabilities
- Providing learning opportunities for

students with learning disabilities

- Reinforcing learning for students with learning disabilities

• Knowledge of the concept and methods of measuring, diagnosing, and evaluating students with learning disabilities (Professional Standards for Teachers of Students with Learning Disabilities, 2020).

2.3.9. Post-Graduate General Aptitude Test

PGAT, designed and constructed by the NCA is a standardized and mandatory test that is taken by students seeking postgraduate admission (Master's or Doctorate) in Saudi Arabian higher education institutions (Education and Training Evaluation Commission, 2026). PGAT is divided into five sections, verbal, quantitative, critical thinking, figures, and logic sections; each section contains 24 multiple-choice questions, totalling of 120 questions. It measures students' verbal, and quantitative, and logical abilities, such as reading and comprehending texts, distinguishing the logic structure of linguistic expressions, solving mathematical-based problems, perceiving logical, spatial and non-spatial relationships, analyze, induct, and interpret the results (Education and Training Evaluation Commission, 2026). The PGAT's psychometric characteristics were examined and validated by NCA, and they were satisfactory. Dadandari and Almeri (2025) found that the internal consistency of the overall test and sub-test scores using Cronbach's alpha; the values for the verbal, quantitative, and logical sections for females were (0.74, 0.64, 0.61, and 0.84) and (0.78, 0.67, 0.60, and 0.86) for males and the total scores. The total score of PGAT was used in this study.

2.4. Data Analysis

Based on the provided data and research questions, various statistical methods (descriptive, regression) were utilized to analyze the research questions. The Statistical Package for Social Science (SPSS) software version 26 was utilized to analyze all data. All analyses were conducted using $p < .001$ as a level of statistical significance. Descriptive statistics were calculated to: (1) offer more insights related to the research questions and (2) explain the sample based on background information (e.g., scores of the PGAT, years since graduation, gender, etc.). The following steps were performed before analyzing the data: (1) birthdates were converted into ages, (2) graduation years were converted into years since graduation, and (3) universities did not have the same CGPA limits (of 4, 5, or 100), so they were all

converted into percentages of 100.

2.4.1. Research Question 1

What is the current status of teachers of students with LD's performance in the PGAT? Descriptive statistics (e.g., mean, standard deviation, frequencies, and percentages) were utilized to provide insights about teachers of students with LD's performance in the PGAT.

2.4.2. Research Question 2

To what extent do the following demographic variables (Years since Graduation, Age, Gender) predict teachers of students with LD's performance in PGAT? A multiple regression analysis was utilized to investigate the correlation between the Years since Graduation, Age, Gender and teachers of students with LD's performance in the PGAT.

2.4.3. Research Question 3

To what extent do pre-university measures (GAT score, SAAT score) predict teachers of students with LD's performance in PGAT? A multiple regression analysis was conducted to examine the correlation between GAT scores, SAAT scores, and teachers of students with LD's performance in the PGAT.

2.4.4. Research Question 4

To what extent do post-university measures (CGPA, TLGE score, TLSE score) predict teachers of students with LD's performance in PGAT? A multiple regression analysis was administrated to examine the correlation between CGPA, TLGE score, TLSE score, and teachers of students with LD's performance in the PGAT.

2.4.5. Research Question 5

To what extent do the combined pre- and post-university measures predict teachers of students with LD's performance in PGAT? A multiple regression analysis was conducted to examine the correlation between pre-university measures (GAT,

SAAT), and post-university measures (CGPA, TLGE score, TLSE score), and teachers of students with LD's performance in the PGAT.

3. RESULTS

Based on the research questions, the result section was divided into five parts. First, descriptive statistics of participants' demographics (age, gender, and years since graduation) and study's variables: GAT score, SAAT score, CGPA, TLGE score, TLSE score, and PGAT score of teachers of students with LD are presented and described. Second, the regression coefficients of the association between participant's demographics (age, gender, and years since graduation) and PGAT score are explained. Third, the regression coefficients of the relationship between pre-university measures (GAT, SAAT) and PGAT score are provided and described. Fourth, the regression coefficients of the association between post-university measures (CGPA, TLGE score, TLSE score) and PGAT score are provided and explained. Finally, the regression coefficients of the relationship between the combined pre-university and post-university measures and PGAT score are presented and discussed.

3.1. Research Question 1: What is the current status of teachers of students with LD's performance in the PGAT?

As presented in Table 1, the number of male participants ($n = 1417$, 57.8%) was higher compared to female participants ($n = 1036$, 42.2%). The participants' mean age was 31.50 years old ($SD = 2.99$), while the average of years since graduation was 8.70 ($SD = 3.52$). In regard to pre-university measures, the participants attained a mean score of 71.01 ($SD = 7.44$) in GAT and 66.79 ($SD = 8.34$) in SAAT. For the post-university measures, the participants obtained a mean score of 83.31 ($SD = 12.25$) in CGPA, 54.92 ($SD = 12.19$) in TLGE, and 51.90 ($SD = 10.10$). Regarding the PGAT score, the participants' average score was 68.23 ($SD = 9.94$).

Table 1: Descriptive Statistics for Study Variables (N = 2453).

Variable	Mean	SD	Min	Max
Age	31.50	2.99	26.00	43.00
Years since Graduation	8.70	3.52	4.00	19.00
GAT score	71.01	7.44	51.00	92.00
SAAT score	66.79	8.34	46.00	98.00
CGPA	83.31	12.25	36.50	100.00
TLGE score	54.92	12.19	26.00	93.00
TLSE score	51.90	10.10	22.00	86.00
PGAT score	68.23	9.94	37.00	94.00
Gender	N		%	
Male	1417		57.8%	

Female	1036	42.2%
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Note. GAT = General Aptitude Test, SAAT = Standard Achievement Admission Test, CGPA = Cumulative Grade-Point Average, TLGE = Teacher Licensure General Exam, TLSE = Teacher Licensure Specialization Exam, PGAT = Post-Graduate Aptitude Test

3.2. Research Question 2: To what extent do the following demographic variables (Years since Graduation, Age, Gender) predict teachers of students with LD's performance in PGAT?

As shown in Table 2, the multiple regression analysis indicated significant insights into the predictive power of demographic variables (Age, Gender, and Years Since Graduation) on PGAT performance. The regression model was statistically significant, $F = 108.07$, $p < .001$, indicating that the combination of these demographic variables significantly predicted teachers of students with LD's performance in the PGAT. The model explained approximately 11.7% of the variance in PGAT performance ($R^2 = .117$). While this percentage might seem modest, it is substantial for demographic predictors alone in educational research.

The individual relationship between demographic predictors and the PGAT was further assessed and examined. Age was not a significant predictor of PGAT performance ($\beta = -0.04$, $p = .137$), implying once gender and years since graduation are accounted for, age does not independently influence PGAT score. Gender was the strongest predictor in the model ($\beta = .35$, $p < .001$). The positive correlation coefficient ($B = 6.97$) indicated that females scored significantly higher than males in the PGAT, with an average difference of nearly 7 points when controlling for other variables. Additionally, there was a significant positive relationship between years since graduation and PGAT performance ($\beta = .07$, $p = .007$). Interestingly, for every additional year since graduation, PGAT scores increased by 0.20 points. This suggests that "time since graduation" contributes positively to PGAT performance rather than leading to knowledge decay (Table 2).

Table 2: Regression Coefficients of the Relationship between Demographic Variables and PGAT Performance.

Predictor	B	SE	β	t	p	CI 95%	
Age	-0.14	0.09	-0.04	-1.49	.137	-.319	.044
Gender	6.97	0.47	0.35	14.75	<.001	6.047	7.900
Years Since Graduation	0.20	0.07	0.07	2.70	.007	.054	.339
Model Summary	R = .342 $R^2 = .117$ $F = 108.07$ $p < .001$						

Note. ** Significant at 0.001.

3.3. Research Question 3: To what extent do pre-university measures (GAT score, SAAT score) predict teachers of students with LD's performance in PGAT?

As shown in Table 3, the multiple regression analysis revealed that pre-university measures (GAT Score, SAAT Score) are powerful predictors of teachers of students with LD's performance in the PGAT. The overall regression model was statistically significant, $F = 874.18$, $p < .001$, indicating that the combination of these two standardized scores effectively predicted PGAT outcomes. Notably, this model explains approximately 41.6% of the variance

in PGAT scores ($R^2 = .416$), representing a very high predictive capability compared to demographic variables.

The individual relationship between predictors and the PGAT performance was further investigated. GAT score emerged as the strongest predictor in the model ($\beta = .52$, $p < .001$). The unstandardized coefficient ($B = 0.69$) suggests that for every one-point increase in the GAT score, the graduate's PGAT performance is expected to increase by approximately 0.69 points when other factors are held constant. This high correlation underscores the stability of general cognitive aptitude over time, from pre-university to postgraduation stages. SAAT score was also a significant positive predictor ($\beta = .18$, $p < .001$).

.001). For every one-point increase in the SAAT score, PGAT performance increases by 0.21 points. While its influence is less pronounced than the GAT, its

statistical significance confirms that high school academic achievement remains a relevant indicator of later cognitive aptitude (Table 3).

Table 3: Regression Coefficients of the Relationship between Pre-University Measures (GAT, SAAT) and PGAT Performance.

Predictor	B	SE	β	t	p	CI 95%
GAT score	0.69	0.03	0.52	25.21	< .001	[0.63, 0.74]
SAAT score	0.21	0.02	0.18	8.68	< .001	[0.16, 0.26]
Model Summary	R = .645 R ² = .416 F = 874.179 p < .001					

Note. ** Significant at 0.001.

Note. Dependent Variable: PGAT Performance

Note. GAT = General Aptitude Test, SAAT = Standard Achievement Admission Test

3.4. Research Question 4: To what extent do post-university measures (CGPA, TLGE score, TLSE score) predict teachers of students with LD's performance in PGAT?

As presented in Table 4, the multiple regression analysis indicated that post-university measures (CGPA, TLGE score, TLSE score) significantly predicted teachers of students with LD's performance in the PGAT. The overall regression model was statistically significant, $F = 417.14$, $p < .001$, explaining approximately 33.8% of the variance in PGAT scores ($R^2 = .338$).

The individual relationship between predictors and the PGAT performance was further examined. TLGE score was the strongest predictor among post-university measures ($\beta = .29$, $p < .001$). For every one-

point increase in the TLGE, PGAT performance is expected to increase by 0.24 points. This suggests a significant overlap between the general professional knowledge required for licensure and the cognitive abilities assessed by the PGAT. TLSE score was a significant positive predictor ($\beta = .22$, $p < .001$) PGAT performance. For every one-point increase in the TLSE, there is a corresponding 0.22-point increase in PGAT performance. This indicates that specialized knowledge in LD is positively associated with the cognitive aptitude measured in post-graduate testing. CGPA (university GPA) was a significant but relatively weaker predictor compared to the licensure exams ($\beta = .19$, $p < .001$). A one-unit increase in GPA results in a 0.15-point increase in the PGAT score (Table 4).

Table 4: Regression Coefficients of the Relationship between Post-University Measures (CGPA, TLGE score, TLSE score) and PGAT Performance.

Predictor	B	SE	β	t	p	CI 95%
CGPA	0.15	0.02	0.19	9.66	< .001	[0.12, 0.18]
TLGE	0.24	0.02	0.29	13.53	< .001	[0.21, 0.27]
TLSE	0.22	0.02	0.22	9.99	< .001	[0.17, 0.26]
Model Summary	R = .582 R ² = .338 F = 417.139 p < .001					

Note. ** Significant at 0.001.

Note. Dependent Variable: PGAT Performance

Note. CGPA = Cumulative Grade-Point Average, TLGE = Teacher Licensure General Exam, TLSE =

Teacher Licensure Specialization Exam

3.5. Research Question 5: To what extent do the combined pre- and post-university measures predict teachers of students with LD's performance in PGAT?

As shown in Table 5, The results of the multiple regression analysis indicated that the combined model of pre-university and post-university measures significantly predicted teachers of students with LD's performance in the PGAT. The overall regression model was statistically significant, $F = 475.63$, $p < .001$, explaining approximately 49.3% of the variance in PGAT scores ($R^2 = .493$). The individual relationship between predictors and the PGAT performance was further assessed and investigated.

GAT emerged as the strongest predictor in the entire model ($\beta = .42$, $p < .001$). For every one-point increase in the GAT score, the PGAT score is predicted to increase by 0.56 points, highlighting the dominant role of general aptitude in this assessment. SAAT, however, was the weakest predictor in the

model; the SAAT score remained statistically significant ($\beta = .07$, $p < .001$). For every one-point increase in the SAAT, there is a corresponding 0.09-point increase in the PGAT score, indicating that prior achievement in high school subjects still holds a predictive value. In addition, CGPA was a statistically significant predictor ($\beta = .10$, $p < .001$) of PGAT performance. A one-unit increase in GPA results in a 0.08-point increase in the PGAT score, suggesting that overall academic performance during undergraduate studies contributes to aptitude performance (PGAT) and possibly future postgraduate success. TGLE score significantly predicted PGAT performance ($\beta = .15$, $p < .001$). For every one-point increase in the TGLE, the PGAT score increases by 0.12 points, showing the importance of general pedagogical and professional knowledge for aptitude exams. Finally, TLSE score was a significant positive predictor ($\beta = .15$, $p < .001$) of PGAT. A one-point increase in the TLSE correlates with a 0.15-point increase in the PGAT, indicating that specialized academic knowledge in LD is a key factor in the aptitude exam (Table 5).

Table 5: Regression Coefficients of the Relationship between Pre- and Post-University Measures and PGAT Performance.

Predictor	B	SE	β	t	p	CI 95%
GAT score	0.56	0.03	0.42	20.90	< .001	[0.50, 0.61]
SAAT score	0.09	0.02	0.07	3.54	< .001	[0.04, 0.13]
CGPA	0.08	0.01	0.10	5.57	< .001	[0.05, 0.11]
TLGE score	0.12	0.02	0.15	7.63	< .001	[0.09, 0.15]
TLSE score	0.15	0.02	0.15	7.81	< .001	[0.11, 0.19]
Model Summary	R = .702 R ² = .493 F = 475.630 p < .001					

Note. ** Significant at 0.001.

Note. Dependent Variable: PGAT Performance

Note. GAT = General Aptitude Test, SAAT = Standard Achievement Admission Test, CGPA = Cumulative Grade-Point Average, TLGE = Teacher Licensure General Exam, TLSE = Teacher Licensure Specialization Exam

4. DISCUSSION

The purposes of this study were: (1) determine the current PGAT performance status of teachers of students with LD, and (2) to investigate the relationship between teachers of students with LD's

performance in PGAT, and demographics variables (Years since Graduation, Age, Gender), pre-university measures (GAT, SAAT), and post-university measures (CGPA, TLGE score, and TLSE score. Previous literature (e.g., Alhifany et al., 2020; Althewini, 2025) have only focused on the

predictability of pre-university measures (e.g., GAT, SAAT) or only used one measure (e.g., Al Qurashi et al., 2025) to predict the licensure exam performance in the medical field. This study, therefore, investigated academic and professional variables and factors that can predict the PGAT performance of teachers of students with LD.

Building on the study's findings, there are few insights that should be posed and addressed. First, the participants' PGAT average score was 68.23 (SD = 9.94). This score is alarming since most special education departments in Saudi higher education institutions require a minimum score of 65 and above. The aforementioned average score (68.23) is slightly above the common required score. Second, the participants' mean age was 31.50 years old (SD = 2.99); this indicates that older teachers do not commonly take the PGAT, meaning older teachers of students with LD are less interested in pursuing postgraduate education (master's or doctorate). This finding should be taken seriously by schools and education stakeholders in general since continuing education is crucial part of teachers' professional development and education.

Third, gender was significant predictor of PGAT ($\beta = .35$, $p = <.001$). Females significantly scored higher than males in PGAT, which is a persistently common finding in Saudi education system; this finding is common across other aptitude and achievement tests; for example, Al Qurashi et al. (2025) found that females scored higher than males in the Saudi Medical Licensing Exam (SMLE). Fourth, years since graduation was strong predictor of PGAT performance ($\beta = .07$, $p = .007$). This finding indicates that time since graduation can be associated with better performance in PGAT rather than leading to losing knowledge. The other insight taken from such finding is that PGAT is an aptitude test, so time since graduation does not have a strong impact on the PGAT's actual performance.

Fifth, when examining the relationship between pre- and post-university measures and PGAT performance of teachers of students with LD, GAT appeared to be the most significant predictor ($\beta = .42$, $p < .001$). This possibly indicates that teachers with higher aptitude can have higher performance in GAT, and those teachers are more likely to have high scores in PGAT as well. Overall, as stated in previous section, pre- and post-university measures significantly predicted PGAT performance of teachers of students with LD, and they roughly explained 49.3% of the variance in PGAT scores ($R^2 = .493$); although this model is useful, this leaves half of the variance unexplained, meaning there are other

factors (e.g., personal traits, professional development) can be included in this model.

4.1. Limitations

Although this study posed some insightful results, there are few limitations. First, not all participants' demographics were available to be considered for this study; one of these demographics is their socioeconomic status and region; learning about such variables can provide more insights into the study. Second, the researcher did not have access to the information related to teacher education programs, where teachers graduated from. Having information about university-related variables and teacher education programs' curriculums can help with building a better model for predicting PGAT performance of teachers of students with LD, thus reaching to more insightful outcomes and results. Third, teachers' teaching experience was not provided or their current status as teachers (preservice or inservice teachers). Having such information would reveal the difference in PGAT performance between inservice or preservice teachers.

4.2. Implications and Recommendations

This research offers several implications and suggestions for policy, research, and educational practice. Firstly, more studies are needed on PGAT since it is a required admission exam for students applying for postgraduate education in Saudi higher education institutions. By conducting such studies, research institutions can periodically refine and revisit PGAT. This research can guide NCA at ETEC to reassess the validity and reliability of such exam. Conducting multiple studies on PGAT can ultimately help policymakers make evidence-based decisions (e.g., suggesting the minimum score of PGAT for admission). Secondly, the results of this study should provide insights for special education teacher education programs at Saudi universities regarding the current performance of teachers of students with LD's performance in PGAT. This in turn can encourage teacher education programs to collaborate alongside researchers to update and improve their existing curriculums, methodologies, as well as their practices. In addition, the results may promote undergraduate teacher education programs to provide their preservice teachers with professional development opportunities on PGAT to enhance their performance in such exam.

Third, future researchers should look into the connection between factors that were not considered or integrated in the current study; these factors can

include but not limited to: length of teaching experience and socioeconomic-related factors of teachers. Fourth, it is essential to explore the institutional factors that possibly correlate with teachers of students with LD's performance in PGAT. In other words, upcoming research should examine university-based factors and pinpoint the key elements within higher education institutions that significantly influence the preparation of teachers of

students with LD and their scores in PGAT. Lastly, a qualitative investigation of teachers' opinions and viewpoints regarding the PGAT performance would be worthwhile. This could be a useful chance for the NCA at ETEC to review, update, and improve the current standards and criteria for PGAT, which should guarantee improved PGAT results and comprehensive data-based policymaking.

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