

Becoming a Teacher: Grit, Sense of Efficacy, and Academic Performance of Pre-Service Teachers

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ABSTRACT:

Beyond academic achievement, effective teaching requires confidence and perseverance. This descriptive correlational-quantitative study examined the level of grit, sense of efficacy, and academic performance among 125 pre-service teachers from a state university in the Philippines. Grit and sense of efficacy were measured using standardized instruments. Academic performance was assessed based on the general weighted average (GWA). Results revealed that the respondents exhibited a moderate level of grit ($M=3.25$, $SD=0.39$), with mean scores of 3.22 ($SD=0.38$) for Consistency of Interest and 3.29 ($SD=0.49$) for Perseverance of Effort. The participants demonstrated a high sense of efficacy ($M=8.04$, $SD=0.74$), particularly in student engagement ($M=8.08$, $SD=0.77$), instructional strategies ($M=8.05$, $SD=0.76$), and classroom management ($M=7.99$, $SD=0.77$). Moreover, the respondents attained a Very Good level of academic performance with a mean GWA of 89.41 ($SD=3.09$). Findings indicated no significant differences in grit, sense of efficacy, and academic performance when grouped according to sex, age, and academic program ($p > .05$). Likewise, no significant relationships were found between grit and academic performance ($r=0.129$, $p=0.076$), sense of efficacy and academic performance ($r=-0.046$, $p=0.063$), and grit and sense of efficacy ($r=0.138$, $p=0.063$). The study recommends strengthening teacher preparation programs through targeted interventions that cultivate perseverance, self-efficacy, and holistic professional development.

Keywords: grit, efficacy, academic performance, pre-service teachers

1. Introduction

Becoming a skilled and effective educator is a transformative journey marked by personal growth and professional development. Pre-service teachers, those at the threshold of their teaching careers, embark on this voyage with the aspiration of nurturing young minds and fostering a love for learning. Nevertheless, this

journey is full of challenges, and success in education depends on a complex interplay of individual qualities, academic performance, and pedagogical efficacy. The Commission on Higher Education (CHED), through the CHED Memorandum Order (CMO) No. 30, series of 2004, on the "Revised Policies and Standards for Undergraduate Teacher Education Curriculum,"

and further stipulated in Section 1 of CMO 78, series of 2017, illustrates the role of quality pre-service teacher education in ensuring quality education. Preparing pre-service teachers in the Philippines for the primary and secondary education sectors is a responsibility entrusted to Higher Education Institutions (HEIs). It becomes paramount to establish the highest standards when defining the pre-service teacher education curriculum's objectives, components, and processes.

This study supports CHED's commitment to quality teacher education in the Philippines. Accordingly, it examined how grit and sense of efficacy relate to the academic performance of pre-service teachers. Teacher preparation programs were designed to equip aspiring educators with the knowledge, skills, and pedagogical insights necessary for the classroom. However, the psychological dimensions of teacher development have been overlooked within this context. Grit is a trait-level passion for and perseverance in pursuing long-term goals (Barrientos-Oradini et al., 2022, cited in Duckworth et al., 2007). The construct of grit has been defined from two sub-dimensions. There is passion, which refers to the tendency to remain committed to the same goals for months and years or, in other words, to have consistency in long-term interests. On the other hand, there is perseverance of effort, which refers to the tendency to work diligently toward the objectives despite the obstacles that arise (Duckworth et al., 2021). The concept of sense of efficacy, as conceptualized by Albert Bandura (1977), is related to an individual's belief in their ability to impact student learning and their effectiveness as teachers. It encompasses a person's view of their competence (Resuelo et al., 2023). Both grit and a sense of efficacy were fundamental psychological attributes that could profoundly shape an individual's academic journey and professional growth.

The gap emerged from the limited exploration of these psychological factors within the specific context of pre-service teacher education. While grit and a sense of efficacy (Riddle, 2018; Luthans

et al., 2018; Fabelico & Afalla, 2020; Dekker et al., 2021; Sulla et al., 2022) had been extensively investigated together within the broader fields of psychology and education, there needed to be more studies that delved deeply into their roles in the journey of becoming a teacher. Furthermore, the researchers built upon the foundational work of scholars like Duckworth, Bandura, and others who had examined the roles of grit and a sense of efficacy in various educational contexts. The study intended to investigate the relationships between grit, sense of efficacy, and academic performance among pre-service teachers in a state university and explore the potential implications of these psychological attributes for their future effectiveness as educators. Specifically, this study sought to answer the following questions. (1) What is the demographic profile of the pre-service teachers in terms of sex, age, and academic program? (2) What is the level of grit among pre-service teachers in terms of its dimensions, consistency of interest and perseverance of effort? (3) What is the level of pre-service teachers' sense of efficacy in terms of its sub-scales, efficacy in student engagement, efficacy in instructional strategies and efficacy in classroom management? (4) What is the level of academic performance among pre-service teachers? (5) Are there significant differences between grit, sense of efficacy, and academic performance among pre-service teachers when grouped according to the demographic variables? (6) Are there significant relationships between pre-service teachers' grit, sense of efficacy, and academic performance during their teacher education program?

2. Methodology

A descriptive correlational-quantitative research design was adopted to investigate the relationships between grit, sense of efficacy, and academic performance among pre-service teachers in a state university. The 125 pre-service teachers in a state university, Negros Occidental, Philippines, were the study's potential participants, particularly those who were enrolled in their practice teaching program on three campuses for the Second Semester, Academic

Year 2022-2023. The total population (N=586) was based on records of a certain university. Purposive sampling was used for the quantitative data collection. The names of the entities and the participants were undisclosed to protect their

identities. Table 1 shows the distribution of participants per campus based on the Registrar's Office records and those who provided their consent to be part of this research undertaking.

Table 1. Distribution of Participants

Campus	Total Number	Those who	%
Campus A	16	16	12.8
Campus B	164	45	36.0
Campus C	406	64	51.2
Total	586	125	100.00

The level of grit among pre-service teachers was assessed using the Grit Scale developed by Duckworth et al. (2007). The scale comprises 12 items with two sub-scales. Pre-service teachers used a 5-point Likert scale to express their agreement, with 1 indicating "very much like me" and 5 indicating "not at all like me." The overall scale has an acceptable internal consistency ($\alpha = 0.85$) and for each dimension (perseverance of effort, $\alpha = 0.78$; consistency of interest, $\alpha = 0.84$). To calculate the score, sum up all the points and divide the total by 12. The scale ranges from a maximum score of 5, indicating "extremely gritty," to a minimum score of 1, signifying "not gritty at all." The Teachers' Sense of Efficacy Scale (TSES) was used to measure the pre-service teachers' sense of efficacy formulated by Tschannen-Moran and Anita Woolfolk Hoy (2001). TSES is designed to better understand what creates difficulties for pre-service teachers in school activities. It has 24 items categorized into three distinct yet interconnected factors. With each item, the pre-service teachers gauged their capacity to affect the outcome using a 9-point Likert scale, where 1 represented "Nothing," 3 denoted "Very Little," 5 indicated "Some Influence," 7 signified "Quite a Bit," and 9 represented "A Great Deal." The overall TSES has a high internal consistency ($\alpha=0.94$) and for each sub-scale (efficacy in student engagement, $\alpha=0.87$; efficacy in instructional strategies, $\alpha = 0.91$; efficacy in classroom management, $\alpha=0.90$). To calculate the scores, the unweighted means were determined by averaging the items

associated with each respective factor. Three categories were identified from the scale to determine the efficacy level of each pre-service teacher (low sense of efficacy:1-3; moderate sense of efficacy:4-6, and high sense of efficacy:7-9) (Tschannen-Moran & Hoy, 2001). Pre-service teachers' academic performance was evaluated based on their general weighted average (GWA) scores from official academic records. The GWA provides a non-subjective measure demonstrating good internal reliability and criterion-related validity (Luthans et al., 2018, cited in Bacon & Bean, 2006; Korbin et al., 2008). GWA is the most widely studied academic performance index (Luthans et al., 2018, cited in Richardson et al., 2012).

Academic performance levels were categorized as Excellent (95-100), Superior (90-94), Very Good (85-89), and Good (80-84). Additional data were sourced from the officially reported Student Lists of pre-service teachers for the Second Semester of Academic Year 2022-2023 across three distinct campuses within a state university. Before data collection, approval was sought from the Dean of the College of Education. Orientation and Informed Consent Form (ICF) administration was conducted with assistance from the Dean and program chairpersons. After participants provided their consent, the survey forms were distributed to them with assistance from their respective program chairperson. The administration time frame was only one month. Afterward, data scoring, coding, and interpretation commenced.

The assumption of normality for parametric analyses was assessed through skewness and kurtosis values. Psychometric evaluation is considered acceptable when skewness and kurtosis values fall within the range of -2 to +2 (Luthans et al., 2018, cited in George & Mallery, 2010). The pre-service teachers' sense of efficacy, grit, academic performance, and demographic variables yielded skewness and kurtosis values between -2 and +2, indicating that the data is relatively normal and the basic assumption of parametric testing is fulfilled. The frequency distribution and percentage were used to determine the demographic profile (e.g., sex, age, academic program) of the pre-service teachers. Descriptive statistics (e.g., mean, standard deviation) were used to summarize the grit, sense of efficacy, and academic performance among pre-service teachers. The Independent-Samples T-Test was used to determine the significant differences between the mean scores of grit, sense of efficacy, and academic performance when grouped according to sex and age. A One-way Analysis of Variance (ANOVA) was used to determine the significant differences between the mean scores of grit, sense of efficacy, and

academic performance when grouped according to academic program. Correlation Analysis, particularly the Pearson correlation coefficient, was employed to examine the relationships between grit, sense of efficacy, and academic performance.

3. Results

Demographic Profile of Pre-Service Teachers

Table 2 presents the demographic characteristics of the participants ($n = 125$). Females comprised 74.4% ($n = 93$) of the respondents, while males accounted for 25.6% ($n = 32$). Most participants (84.0%, $n = 105$) belonged to the early adulthood age group (18–24 years old), whereas 16.0% ($n = 20$) were classified under middle adulthood (25–64 years old). In terms of academic program, 46.4% ($n = 58$) were enrolled in Bachelor of Secondary Education (BSEd), followed by Bachelor of Technology and Livelihood Education (BTLEd) at 20.0% ($n = 25$), Bachelor of Technical-Vocational Teacher Education (BTVTEd) at 12.8% ($n = 16$), Bachelor of Elementary Education (BEEd) at 10.4% ($n = 13$), and other programs at 10.4% ($n = 13$).

Table 2. Demographic Profile of the Pre-service Teachers

Demographic Variables	<i>f</i>	%
Sex		
Male	32	25.6
Female	93	74.4
Total	125	100.0
Age		
Early Adulthood (18-24 years old)	105	84.00
Middle Adulthood (25-64 years old)	20	16.00
Total	125	100.0
Academic Program		
Bachelor of Elementary Education (BEEd)	13	10.4
Bachelor of Secondary Education (BSEd)	58	46.4
Bachelor of Technical-Vocational Teacher Education (BTVTEd)	16	12.8
Bachelor of Technology and Livelihood Education (BTLEd)	25	20.0
Others (e.g., BSNEd, BECEd, BPED)	13	10.4
Total	125	100.0

Level of Grit Among Pre-Service Teachers

Table 3 shows the level of grit among pre-service teachers. The mean score for Consistency of

Interest was 3.22 ($SD=0.38$), while Perseverance of Effort obtained a mean score of 3.29 ($SD=0.49$). The overall grit score was 3.25 ($SD=0.39$), described as Moderately Gritty.

Table 3. Pre-service Teachers' Level of Grit

Scale	Sub-scales	n	$\bar{x}$	<i>SD</i>	Level
Grit	Consistency of Interest	125	3.22	0.38	Moderately Gritty
	Perseverance of Effort	125	3.29	0.49	Moderately Gritty
	Overall	125	3.25	0.39	Moderately Gritty

Level of Sense of Efficacy Among Pre-Service Teachers

Table 4 presents the level of sense of efficacy among pre-service teachers. Efficacy in Student Engagement obtained a mean score of 8.08

(SD=0.77), Efficacy in Instructional Strategies obtained 8.05 (SD=0.76), and Efficacy in Classroom Management obtained 7.99 (SD=0.77). The overall mean score was 8.04 (SD=0.74).

Table 4. Pre-service Teachers' Sense of Efficacy

Scale	Sub-scales	n	$\bar{x}$	<i>SD</i>	Level
Teachers' Sense of Efficacy	Efficacy in Student Engagement	125	8.08	0.77	High Sense of Efficacy
	Efficacy in Instructional Strategies	125	8.05	0.76	High Sense of Efficacy
	Efficacy in Classroom Management	125	7.99	0.77	High Sense of Efficacy
	Overall	125	8.04	0.74	High Sense of Efficacy

Level of Academic Performance

Table 5 presents the academic performance of pre-service teachers. The mean Grade Weighted

Average (GWA) was 89.41 (SD=3.09), corresponding to a Very Good level.

Table 5. Pre-service Teachers' Level of Academic Performance

Scale	n	$\bar{x}$	<i>SD</i>	Level
Academic Performance	125	89.41	3.09	Very Good

Differences Between Grit and Demographic Variables

Table 6 presents the differences between grit and demographic variables. No significant differences were found in grit according to sex ($p=0.18$), age ($p=0.33$), and academic program ($p=0.056$).

Table 6. Differences between Pre-service Teachers' Grit and Demographic Variables

Variables	Test	<i>F</i>	<i>p</i> -value	Decision
Sex	Independent Samples T-test	0.00	0.18	Retain H0
Age	Independent Samples T-test	3.63	0.33	Retain H0
Academic Program	ANOVA	2.37	0.05	Retain H0

*Significant: $p\text{-value} < 0.05$

Differences Between Sense of Efficacy and Demographic Variables

Table 7 shows the differences between sense of efficacy and demographic variables. No significant differences were found according to sex ($p=0.56$), age ($p=0.47$), and academic program ($p=0.84$).

Table 7. Differences between Pre-service Teachers' Sense of Efficacy and Demographic Variables

Variables	Test	<i>F</i>	<i>p-value</i>	Decision
Sex	Independent Samples T-test	4.76	0.56	Retain H0
Age	Independent Samples T-test	0.69	0.47	Retain H0
Academic Program	ANOVA	0.35	0.84	Retain H0

*Significant: $p\text{-value} < 0.05$

Differences Between Academic Performance and Demographic Variables

Table 8 presents the differences between academic performance and demographic

variables. Results revealed no significant differences according to sex ($p=0.39$), age ($p=0.87$), and academic program ($p=0.21$).

Table 8. Differences between Pre-service Teachers' Academic Performance and Demographic Variables

Variables	Test	<i>F</i>	<i>p-value</i>	Decision
Sex	Independent Samples T-test	1.07	0.39	Retain H0
Age	Independent Samples T-test	4.61	0.87	Retain H0
Academic Program	ANOVA	1.50	0.21	Retain H0

*Significant: $p\text{-value} < 0.05$

Relationships Among Grit, Sense of Efficacy, and Academic Performance

Table 9 presents the relationships among grit, sense of efficacy, and academic performance. The relationship between grit and academic

performance yielded $r=0.129$ ($p=0.076$). The relationship between sense of efficacy and academic performance yielded $r=-0.046$ ($p=0.063$). The relationship between grit and sense of efficacy yielded $r=0.138$ ($p=0.063$).

Table 9. Relationships between Grit, Sense of Efficacy, and Academic Performance

Variables	<i>r</i>	<i>p-value</i>	Decision
Grit and Academic Performance	0.129	0.076	Retain H0
Sense of Efficacy and Academic Performance	-0.046	0.063	Retain H0
Grit and Sense of Efficacy	0.138	0.063	Retain H0

*Significant: $p\text{-value} < 0.05$

4. Discussion

Demographic Characteristics of the Participants

When participants responded to the survey, the calculated mean age was 23.14 years, with a standard deviation of 2.08. The age range among the participants spanned from the youngest, at 21 years old, to the eldest, at 35 years old. This broad spectrum of ages within the pre-service teacher group indicates the inclusivity of individuals at different life stages pursuing a career in

education. Notably, the highest percentage of participants, amounting to a substantial eighty-four percent (84.0%), fell within the age bracket of 18 to 24 years. The prevalence of early adults in the study suggests a keen interest in teacher preparation programs among those in the early stages of their adult lives. Sixteen percent (16.0%) of participants were categorized as middle with an age bracket of 25 to 64 years. It indicates that individuals from different life stages have chosen to pursue teaching. Thus, the age profile reveals a predominantly early adult cohort.

In terms of academic programs, approximately ten percent (10.4%) of participants enrolled in a Bachelor of Elementary Education (BEEd). It revealed a strong interest in preparing educators for the foundational years of education. The largest contingent, constituting forty-six percent (46.4%) of the pre-service teachers, enrolled in a Bachelor of Secondary Education. This dominant representation delineated a strong focus on preparing secondary school teachers. Approximately thirteen percent (12.8%) of participants enrolled in a Bachelor of Technical-Vocational Teacher Education (BTVTEd) degree. This proportion revealed a significant interest in preparing teachers for technical and vocational education. A substantial twenty percent (20.0%) of participants enrolled in Bachelor of Technology and Livelihood Education (BTLED). It disclosed the importance of equipping students with technology and livelihood skills for future careers. A notable ten percent (10.4%) of participants were grouped in "Others" comprising the Bachelor of Special Needs Education (9), Bachelor of Early Childhood Education (3), and Bachelor of Physical Education (1). Bachelor of Special Needs Education signifies a commitment to addressing the diverse educational needs of students with disabilities or special requirements. The limited representation in the Bachelor of Early Childhood Education suggests that early childhood education remains a niche specialization within the pre-service teacher cohort. This minimal representation in the Bachelor of Physical Education indicates that the path to becoming a physical education teacher attracted only a small fraction of the sample participants. Thus, participants show diverse academic interests and career goals.

Level of Grit Among Pre-Service Teachers

Grit, defined as the ability to maintain passion and perseverance in the pursuit of long-term goals, is a critical trait in the field of education (Duckworth, 2016). Results indicated that, on average, pre-service teachers exhibited a moderate level of grit as measured by these dimensions. Specifically, the mean score for

"Consistency of Interest" was 3.22 (SD=0.38), and the mean score for "Perseverance of Effort" was 3.29 (SD=0.49). The overall measure of grit has a mean score of 3.25 (SD=0.39), falls within the moderately gritty range. Moderately Gritty indicates a moderate level of grit. Individuals within the moderately gritty range typically exhibit a commendable level of determination in pursuing their aspirations. They demonstrate a remarkable ability to remain steadfast and resolute in facing obstacles and setbacks, showcasing their unwavering commitment to realizing their overarching, long-term ambitions. Their unyielding dedication is a notable trait, enabling them to persevere through adversity, adapt to changing circumstances, and progress steadily toward their desired objectives. This resilience and passion serve as powerful driving forces that empower them to overcome challenges and stay focused on the path to success. These findings align with the study of Argon & Kaya (2018) conducted in various schools in Turkey (n=360) and reported similar moderately gritty among educators with an overall mean score of 3.85 (SD=0.85). However, one of its dimensions, perseverance of effort was found to be gritty with a mean score of 4.28 (SD=0.75) (Argon & Kaya, 2018). However, grit levels can vary across different cultural and educational contexts (Duckworth et al., 2007).

Level of Sense of Efficacy Among Pre-Service Teachers

The data revealed that these individuals, expressed a high level of sense of efficacy across the spectrum of teaching competencies assessed. The pre-service teachers' mean scores for each dimension further illustrate the extent of their confidence. In terms of "Efficacy in Student Engagement," participants scored an impressive 8.08, with a standard deviation of 0.77, indicating that their self-assessments consistently leaned towards the high end of the efficacy scale. In the realm of "Efficacy in Instructional Strategies," pre-service teachers earned a mean score of 8.05 (SD=0.76). In the area of "Efficacy in Classroom Management," the mean score remained at 7.99 (SD=0.77). Pre-service teachers felt well-

prepared to handle the complexities of classroom dynamics. The result of the teachers' sense of efficacy remains consistently high, with a mean score of 8.04 (SD=0.74). The findings of this study signify that pre-service teachers view themselves as proficient in engaging students, employing effective instructional strategies, and handling classroom environments, and maintain a high sense of efficacy.

Level of Academic Performance

The fact that their mean Grade Weighted Average (GWA) score of 89.41 aligns precisely with the state university's specified range of 85-89 for the "Very Good" level indicates their consistently strong performance throughout their academic journey. Achieving such a level of academic excellence reflects their commitment to scholarly pursuits and their ability to excel in their coursework. It suggests that these pre-service teachers possess the theoretical knowledge necessary for effective teaching and have demonstrated the ability to excel academically.

Differences Between Grit and Demographic Variables

When examining the influence of sex, categorized as female and male, on grit levels using an Independent Samples T-test, the statistical analysis revealed an F-value of 0.00 and a p-value of 0.18. In this case, the decision was to retain the null hypothesis, suggesting that there was no statistically significant difference in grit levels between female and male pre-service teachers. This finding indicates that both sexes exhibited similar levels of grit in their pursuit of long-term goals. The analysis considered age groups, specifically early adulthood and middle adulthood, also using an Independent Samples T-test. The F-value was calculated as 3.63, and the associated p-value was 0.33. The decision was to retain the null hypothesis, indicating that there was no statistically significant difference in grit levels between these two age groups among pre-service teachers. This result suggests that regardless of whether they were in the early or middle stages of adulthood, pre-service teachers demonstrated comparable levels of grit.

Nevertheless, the analysis explored the impact of academic program differences on grit levels, utilizing an Analysis of Variance (ANOVA). The F-value obtained was 2.37, and the corresponding p-value was 0.056. In this case, while the p-value was close to conventional significance levels, the decision was not to reject the null hypothesis. This suggests that the differences in grit levels among pre-service teachers from various academic programs did not reach statistical significance. However, the proximity of the p-value to the significance threshold warrants further exploration and might indicate a potential trend that could benefit from more in-depth investigation. The analysis of demographic variables and their association with pre-service teachers' grit levels showed that sex and age did not have a statistically significant influence on grit levels. It suggests the need for additional research to explore potential trends in grit levels within different academic programs. The results substantiate the study of Hwang et al. (2018) at the Open University in Korea (N=509) that the demographic variable, age had both direct and indirect effects on grit and academic success of the students.

Differences Between Sense of Efficacy and Demographic Variables

As stipulated in Table 7, when investigating the impact of sex, categorized as female and male, on sense of efficacy using Independent Samples T-test, the analysis returned an F-value of 4.757 with a p-value of 0.564. In this instance, the p-value exceeded conventional significance levels, leading to the decision to retain the null hypothesis. This suggests that there was no statistically significant difference in sense of efficacy between female and male pre-service teachers. The examination extended to age groups, distinguishing between early adulthood and middle adulthood, and their influence on sense of efficacy using another Independent Samples T-test. The F-value was calculated as 0.694, and the associated p-value was 0.472. Once again, the decision was to retain the null hypothesis, indicating that there was no statistically significant difference in sense of

efficacy between these two age groups among pre-service teachers. This finding revealed the universal nature of self-efficacy beliefs among pre-service teachers, irrespective of whether they find themselves in the early or middle stages of adulthood. More so, the analysis delved into the domain of academic programs, categorizing participants into distinct groups such as BEEd, BSEd, BTVTEd, BTLEd, and "Others," including programs like BSNEd, BECEd, and BPEd. An Analysis of Variance (ANOVA) was employed to explore potential differences in sense of efficacy. The F-value obtained was 0.353, and the corresponding p-value was 0.842. The p-value indicated a lack of statistical significance. Thus, the decision was made not to reject the null hypothesis, suggesting that the sense of efficacy among pre-service teachers from various academic programs did not differ significantly. This implies that regardless of their specific academic program, pre-service teachers exhibited similar levels of confidence in their ability to engage, instruct, and manage classrooms effectively. The analysis of demographic variables and their association with pre-service teachers' sense of efficacy underlines the consistent and unwavering nature of their self-efficacy beliefs. Sex and age demonstrated no statistically significant influence on sense of efficacy. The impact of academic programs similarly lacked statistical significance. However, these findings differ from the study conducted by Fabelico & Afalla (2020). In their study, they discovered that the levels of teachers' grit, sense of efficacy, and performance were quite comparable across various demographic characteristics, including age, gender, civil status, number of dependents, educational attainment, length of service, teaching status, and academic rank. Teachers demonstrated remarkable consistency in these crucial qualities. Despite the consistency seen in qualities like grit and self-efficacy, the impact of burnout was influenced by the extent of teachers' family commitments.

Differences Between Academic Performance and Demographic Variables

When examining the potential impact of sex, categorized as female and male, on academic performance using an Independent Samples T-test, the analysis revealed an F-value of 1.07 with a p-value of 0.39. The p-value exceeded conventional significance levels, leading to the decision to retain the null hypothesis. This suggests that there was no statistically significant difference in academic performance between female and male pre-service teachers. This outcome indicates a fundamental point of equity within the educational context where both sexes demonstrated similar levels of achievement in their coursework. The analysis extended to age groups, distinguishing between early adulthood and middle adulthood, and their influence on academic performance using Independent Samples T-test. The F-value was calculated as 4.61, and the associated p-value was 0.87. However, this analysis yielded a similar result to the previous one, as the p-value was significantly higher than the significance threshold, leading to the decision to retain the null hypothesis. This implies that there was no statistically significant difference in academic performance between these two age groups among pre-service teachers. This result negates the study of Bazelais et al. (2018), who reported that in their study, the overall model was significant, with age and GPA emerging as the sole significant predictors of academic performance. In contrast, the current study's findings suggest a variation in the factors influencing academic performance within its specific context. While Bazelais et al.'s research indicated that age and GPA were the determinants, the current study's outcomes indicate a more nuanced picture. This discrepancy stresses the need to consider the specific circumstances and participant characteristics in understanding the multifaceted relationship between predictors and academic success. Furthermore, the analysis explored the potential impact of academic programs, categorizing participants into distinct groups such as BEEd, BSEd, BTVTEd, BTLEd, and

“Others,” including programs like BSNEd, BECEd, and BPED. An Analysis of Variance (ANOVA) was employed to investigate potential differences in academic performance across these programs. The F-value obtained was 1.50, and the corresponding p-value was 0.21. Likewise, the p-value exceeded the conventional significance levels, resulting in the decision to retain the null hypothesis. This suggests that the differences in academic performance among pre-service teachers from various academic programs did not reach statistical significance. Regardless of their specific academic program, pre-service teachers achieved comparable levels of academic success. This finding revealed the idea that academic program choice did not significantly influence academic performance among pre-service teachers.

Relationships Among Grit, Sense of Efficacy, and Academic Performance

Grit and academic performance revealed a correlation coefficient (r) of 0.129 with a p-value of 0.076. The proximity of the p-value to the significance threshold suggests the existence of a potential trend. This suggests the possibility of a modest, positive correlation between pre-service teachers' grit levels and academic achievements, prompting further investigation to ascertain the validity of this observation. Similarly, the study conducted by Zamarro et al. (2018) disclosed that careless answering behaviors and various key attributes were negatively correlated with self-reported grit, self-control, and teacher-reported grit, self-control, and homework completion among the participants. These attributes were also negatively correlated with performance on the diligence and frustration tasks by the anticipated hypothesis, indicating that lower levels of effort on the survey corresponded with lower performance levels in these tasks. This indicates the importance of conscientious survey participation in the context of academic performance and behavioral attributes (Zamarro et al., 2018, cited in Duckworth and Kern, 2011; Galla et al., 2014). Furthermore, grit did not correlate significantly with academic performance (GPA) and academic honors. Still,

correlations with the remaining school outcomes were low but significant (Christopoulou et al., 2018, cited in Ivcevic & Brackett, 2014). It is further supported by Bazelaïs et al. (2018) that neither grit nor mindset was predictive of academic achievement, drawing from a sample of pre-university students ($N=309$) with possible implications in educational psychology (Bazelaïs et al., 2018). Contrary to the result of Hwang et al. (2018), grit was found to be positively related to the academic performance of university students in Korea, giving the construct some cross-cultural applicability. Nevertheless, it transpired that the persistence in effort exhibited a negative correlation with academic maladjustment. Likewise, the perseverance of effort had a positive indirect effect on academic performance. Additional factors like conscientiousness and self-control exhibited positive correlations with grit attributes, adversely affecting academic maladjustment through perseverance of effort (Hwang et al., 2018). Additionally, these findings provide a contrast with the study conducted by Oducado (2021), which established significant connections between psychological resources like self-directed learning readiness ($p=0.000$), self-esteem ($p=0.000$), and grit ($p=0.023$), and academic performance of specific groups of college students. This indicates the vital role these attributes play in supporting students' academic success, particularly in the context of nursing school. While the current study's results on grit and academic performance deviate from these findings, they nonetheless contribute to the broader understanding of how various psychological factors can impact academic performance and illustrate the importance of strategies to support students' success, particularly in nursing. The analysis explored the relationship between a sense of efficacy and academic performance, revealing a correlation coefficient (r) of -0.046 and a p-value of 0.063. Despite the negative correlation coefficient, implying a potential inverse relationship between a sense of efficacy and academic performance, the p-value did not attain statistical significance. This result suggests that if any relationship exists

between a sense of efficacy and academic performance, it is tenuous and inconclusive based on this analysis. This finding aligns with the study of Bhati and Behera (2021), which also concluded a negligible positive relationship between academic self-concept and academic performance among pre-service teachers. Their study, like the current one, determined that academic self-concept does not significantly impact these individuals' academic performance. This consistency in findings revealed the notion that academic self-concept may not be a strong predictor of academic success among pre-service teachers, and other factors or variables may play more prominent roles in influencing their performance in teacher training programs. Apparently, a direct and significant relationship existed between self-efficacy scores and student's academic performance, suggesting that enhancing self-efficacy can lead to improved academic outcomes (Resuelo et al., 2023, cited in Tiyyuri et al., 2018). The previous study asserted a substantial relationship between self-efficacy scores and students' academic performance. However, the results do not support this notion in this context. This discrepancy indicates the need to consider the intricacies of various study populations and settings. Grit and sense of efficacy showed a weak positive, non-significant correlation ($r = 0.138$, $p = 0.063$). This implies the potential presence of a positive association between pre-service teachers' levels of grit and their self-efficacy beliefs. This finding aligns with the study of Morris (2017), which similarly concluded that grit, as a personality trait, may not be a significant determinant of success. Morris's study suggested that while grit may play a role, its impact on behavior and success might be relatively minimal. It suggests that while grit is essential, other factors and behaviors may contribute significantly to one's achievements and outcomes. In contrast, this finding departs from the predictive correlational study conducted by Riddle (2018), which involved students completing their student teaching phase at a Mid-Atlantic private university. Riddle's study identified a moderately significant positive correlation between grit and self-efficacy,

signifying a connection between these attributes in predicting students' experiences during their clinical fieldwork. However, within its specific context, the current study's results challenge this correlation. As Creswell (2013) suggests, correlation coefficients between 0.35 and 0.65 are helpful for limited predictions. Therefore, this discrepancy also indicates a limited predictive relationship between grit and self-efficacy in the context of the current study.

5. Conclusion

The study's findings provided dynamics within the group of pre-service teachers under investigation. Most participants were females, early adults, and enrolled in the Bachelor of Secondary Education program. They exhibited moderate grit, reflecting their commendable determination and passion for long-term goals. They displayed a high sense of efficacy, indicating strong confidence in their ability to effectively engage, instruct, and manage classrooms. Moreover, their academic performance level was rated as "very good." The analysis of significant differences revealed no statistically significant variations in grit, sense of efficacy, or academic performance when pre-service teachers are grouped according to demographic variables such as sex, age, or academic program. This implies that regardless of their gender, age group, or specific academic program, pre-service teachers in this study maintain a consistent level of grit, sense of efficacy, and academic performance. Furthermore, the study's exploration of relationships between grit, sense of efficacy, and academic performance among pre-service teachers revealed no statistically significant correlations between these variables. Despite indications of potential associations, such as a positive but non-significant link between grit and academic performance and subtle connections between grit and self-efficacy, as well as between self-efficacy and academic performance, none of these relationships achieved statistical significance. This suggests that within this group of pre-service teachers, these factors may operate independently.

Based on the findings and conclusions of the study, several recommendations can be made to enhance the pre-service teacher education. Given the consistent levels of grit, sense of efficacy, and academic performance across demographic groups, teacher education programs can focus on designing tailored support programs that cater to the specific needs of individual pre-service teachers. These programs could include mentoring, coaching, or workshops to address each student's unique challenges and goals. Collaborative efforts between teacher education programs and other academic disciplines can be encouraged. For instance, integrating elements of psychology and sociology into teacher training may help pre-service teachers develop a deeper understanding of education's social and psychological aspects, potentially enhancing their effectiveness in the classroom. Longitudinal studies can be conducted to gain a more comprehensive understanding of the development and impact of grit, sense of efficacy, and academic performance. Following pre-service teachers throughout their entire educational journey and into their early years of teaching could provide valuable insights into the long-term effects of these traits on their professional growth. Teacher education programs can incorporate components related to mental health and well-being. Promoting strategies for stress management, self-care, and maintaining a healthy work-life balance can help pre-service teachers navigate the challenges of the teaching profession more effectively. Given the

diverse nature of classrooms, teacher education programs should consider enhancing training in diversity, equity, and inclusion. This can help pre-service teachers develop cultural competency and the ability to create inclusive learning environments that meet the needs of all students. Future studies can explore the potential moderating or mediating factors influencing these relationships. Additionally, investigating the impact of interventions designed to boost grit and a sense of efficacy on academic performance could provide valuable insights. Professional development opportunities for pre-service teachers can help refine their teaching skills and stay updated with the latest educational practices and technologies. This can contribute to their overall effectiveness as educators. Building stronger partnerships between teacher education institutions and K-12 schools can provide pre-service teachers with more opportunities for practical classroom experience. These collaborations can help bridge the gap between theory and practice and better prepare future teachers for the realities of teaching. Likewise, establishing mentoring programs that pair pre-service teachers with experienced educators can facilitate a smoother transition into the teaching profession. Mentors can provide guidance, share insights, and offer support as pre-service teachers embark on their careers. Moreover, encouraging pre-service teachers to engage in continuous self-reflection can help them develop a growth mindset.

References

- Argon, T., & Kaya, A. (2018). Examination of grit levels of teachers according to personal variables. *Journal of Education and Training Studies*, 6(3a), 45. <https://doi.org/10.11114/jets.v6i3a.3157>
- Barrientos-Oradini, N. P., Rubio, A., Araya-Castillo, L., Boada-Cuerva, M., & Vallejo-Velez, M. (2022). Passion and perseverance: How the components of grit affect the probability of starting a business. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.906701>
- Bhati, K. and Behera, L. (2021). Academic self-concept and academic performance among pre-service teacher trainees. *Educational Quest: An Int. J. Edu. Appl. Soc. Sci.*, 12(2):115-121. 10.30954/2230-7311.2.2021.8
- Christopoulou, M., Lakioti, A., Pezirkianidis, C., Karakasidou, E., & Stalikas, A. (2018). The role of grit in education: A systematic review. *Psychology*, 09(15), 2951–2971. <https://doi.org/10.4236/psych.2018.915171>
- Commission on Higher Education (CHED). (2004). CMO No. 30, series of 2004. Revised Policies and Standards for Undergraduate Teacher Education Curriculum. <http://ched.gov.ph>

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- Commission on Higher Education (CHED). (2017). CMO No. 78, series of 2017. Revised Policies, Standards and Guidelines for Bachelor of Technology and Livelihood Education. <http://ched.gov.ph>
- Dekker, I., Schippers, M., & Van Schooten, E. (2021). Reflective goal setting improves academic performance in teacher and business education: A large-scale field experiment. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3778544>
- Duckworth, A. (2016). *Grit: The power of passion and perseverance*. Scribner/Simon & Schuster.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit Scale [Database record]. APA PsycTests.
- Duckworth, A. L., Quinn, P. D., and Tsukayama, E. (2021). Revisiting the factor structure of grit: A commentary on Duckworth and Quinn (2009). *J. Pers. Assess.* 103, 573–575. doi: 10.1080/00223891.2021.1942022
- Fabelico, F., & Afalla, B. (2020). Perseverance and passion in the teaching profession: Teachers' grit, self-efficacy, burnout, and performance. *Papers.ssrn.com*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3655146
- Hwang M. H., Lim H. J., Ha H. S. (2018). Effects of grit on the academic success of adult female students at Korean Open University. *Psychological Reports*, 121, 705-725. <https://doi.org/10.1177/0033294117734834>
- Luthans, K. W., Luthans, B. C., & Chaffin, T. D. (2018). Refining Grit in Academic Performance: The Mediational Role of Psychological Capital. *Journal of Management Education*, 43(1), 35–61. <https://doi.org/10.1177/1052562918804282>
- Morris, D. (2017). Teaching self-efficacy. *Oxford Research Encyclopedia of Education*. doi:10.1093/acrefore/9780190264093.013.86
- Oducado, R. M. (2021). Academic performance and the role of self-directed learning, self-esteem, and grit among nursing students. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3850519
- Resuelo, B. E., Reynoso, M. M., & Demapula, M. C. T. (2023). Motivation and self-efficacy in java programming among B.S. Information technology and B.S. Information systems students. *Journal of Namibian Studies*, 33, 5338–5360. <https://doi.org/10.59670/jns.v33i.3173>
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353–387. <https://doi.org/10.1037/a0026838>
- Riddle, R. (2018). A predictive correlational study of the relationship between grit and self-efficacy beliefs among pre-service teachers. *Doctoral Dissertations and Projects*. 1723. <https://digitalcommons.liberty.edu/doctoral/1723>
- Sulla, F., Aquino, A. & Rollo, D. (2022). University students' online learning during covid-19: The role of grit in academic performance. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.825047>
- Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education*, 17, 783- 80
- Zamarro, G., Nichols, M., Duckworth, A., & D'Mello, S. (2018). Further validation of survey effort measures relevant character skills: Results from a sample of high school students. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3265332>

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8. Author Declaration

The authors declare no conflicts of interest related to this study. The content of this manuscript is original.