ACADEMIC PERFORMANCE AS PREDICTOR OF LICENSURE EXAMINATION RESULTS AMONG BACHELOR OF SECONDARY EDUCATION MAJOR IN SCIENCE GRADUATES

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ABSTRACT: *This study examined the relationship between competency-based assessments (CBAs), academic performance, and the Licensure Examination for Teachers (LET) results among Bachelor of Secondary Education (BSED) Science graduates. The research was prompted by the consistently high LET passing rates of the program, with 100 percent in 2018, 87.5 percent in 2019, and 90 percent in 2022 under the old curriculum, and a perfect 100 percent passing rate in 2023, 2024, and 2025 under the new curriculum. Despite this sustained success, limited studies have specifically investigated the academic predictors of LET performance among Science majors. Utilizing data from 57 graduates, the study employed Spearman rank-order correlation due to the non-normal distribution of GPA. Findings revealed statistically significant low positive correlations between CBA 1 and LET General Education ($r = 0.272$, $p = 0.041$), GPA and LET General Education ($r = 0.331$, $p = 0.012$), and GPA and LET Overall Rating ($r = 0.288$, $p = 0.030$). In contrast, CBAs 2 and 3, as well as GPA correlations with LET Professional Education and Major (Science) components, were not statistically significant. Regression analysis further confirmed that GPA significantly predicted LET General Education and Overall Rating, explaining 11.1 percent and 8.0 percent of the variance, respectively. These findings suggest that academic performance, particularly GPA, serves as a modest yet meaningful predictor of licensure outcomes in general education and overall LET performance. The results highlight the importance of strengthening core academic preparation and improving the alignment of institutional assessments with LET standards in science teacher education programs.*

Keywords: Licensure Examination for Teachers, academic performance, GPA, competency-based assessment, science education, teacher preparation, BSED Science.

1. INTRODUCTION

The Licensure Examination for Teachers (LET) serves as a pivotal credentialing mechanism for aspiring educators in the Philippines, gauging both their academic preparation and professional readiness. As the principal gateway to the teaching profession, LET performance is widely regarded as an essential measure of teacher education program effectiveness. In recent years, particular attention has been given to identifying academic indicators that may predict licensure outcomes, thereby enabling teacher education institutions (TEIs) to refine curricular, instructional, and assessment practices.

At Negros Oriental State University (NORSU), the Bachelor of Secondary Education (BSED) major in Science program has consistently demonstrated impressive LET passing rates. Under the old curriculum, the program recorded 100% in 2018, 87.5% in 2019, and 90% in 2022. Under the new curriculum, a perfect 100% passing rate was sustained for three consecutive years: 2023, 2024, and 2025. While these results affirm the program's strength, they also raise critical questions regarding which academic performance variables contribute most significantly to this sustained success. The consistently high performance provides a unique opportunity to analyze which factors may serve as reliable predictors of LET outcomes, especially among Science majors. This specialization demands rigorous academic and pedagogical training.

Numerous studies have established the predictive role of academic performance in licensure examinations. Dela Peña [1] found that among BSED Values Education majors, Competency-Based Assessments (CBAs) in Professional Education were more predictive of LET outcomes than those in General Education or Specialization. Similarly, Tacadena-Muico *et al*. [2] emphasized the positive relationship between General Weighted Average (GWA), On-the-Job Training (OJT) grades, and LET success among BEED graduates. Other scholars, such as Dionio et al. [3], further substantiated the significant role of academic indicators, particularly GWA, in predicting licensure performance, while also acknowledging variability in the predictive strength of teaching competencies.

However, limited studies have focused specifically on BSED Science majors, whose academic and pedagogical preparation differs from those in other specializations. Ampo [4] noted that the predictive relationship between GPA and LET performance varied across fields, with weaker correlations observed among Physical Science graduates. This variation highlights the necessity for specialization-focused investigations, especially in science education, where mastery of content and pedagogical skills is both critical for licensure and classroom effectiveness.

This study aims to fill this gap by examining the predictive role of academic performance measured through final grades in CBAs (General Education, Professional Education, and Specialization) and GPA on the LET outcomes of BSED Science graduates. Specifically, it seeks to (1) describe the profile of graduates based on their academic and licensure performance, (2) determine the relationship between academic indicators and LET results across subject domains, (3) identify the predictive strength of CBAs on licensure performance, and (4) develop a regression model that may be used to forecast LET ratings. By addressing these objectives, the study offers data-driven insights that can inform curriculum alignment, review program design, and targeted interventions for future Science teacher candidates.

Ultimately, the findings may contribute to the ongoing discourse on improving licensure readiness and teacher quality in science education. In doing so, the study aligns with previous calls to bridge academic preparation and licensure demands [5]; [6]; [7], while offering empirical evidence specific to a high-performing institutional context.

Specifically, it purports to shed light to the following questions:

1. What is the respondent's profile in terms of?
   1.1 CBA 1 final grade;
   1.2 CBA 2 final grade;
   1.3 CBA 3 final grade;
   1.4 GPA;
   1.5 LET rating in General Education;
   1.6. LET rating in Professional Education;
   1.7 LET rating in Major (Science); and
   1.8 LET general average?
2. Is there a relationship between the graduates' performance in
   2.1 CBA 1 vs. Gene LET Result;
   2.2 CBA 2 vs. Proofed LET Result;
   2.3 CBA 3 vs. Major LET Result;
   2.4 GPA vs. Gene LET Result;
   2.5 GPA vs. Proofed LET Result;
   2.6 GPA vs. Major LET Result;
   2.7 CBA 1 vs. LET general average Result;
   2.8 CBA 2 vs. LET general average Result;
   2.9 CBA 3 vs. LET general average Result; and
   2.10 GPA vs. LET general average Result?
3. What regression model may be adopted in predicting the ratings in the LET?

2. REVIEW OF RELATED LITERATURE

The Licensure Examination for Teachers (LET) remains a critical benchmark for evaluating the quality of teacher education institutions (TEIs) in the Philippines. With growing attention to improving licensure performance, numerous studies have explored how academic performance, particularly in the form of Grade Point Averages (GPA), Competency-Based Assessments (CBAs), and subject-specific grades, can serve as predictors of LET success.

Dela Peña [1] investigated this relationship among BSED Values Education majors at Negros Oriental State University, identifying that while CBA 1 (General Education) had a negligible correlation with LET General Education scores, CBA 2 (Professional Education) showed a low but meaningful correlation. Notably, CBA 3 (Specialization) exhibited a weak positive relationship with LET Major scores, with CBA 2 emerging as the strongest predictor in the regression model. These results suggest that although CBAs lay the groundwork for teacher readiness, their alignment with LET content is essential for predictive accuracy.

Echoing this, Tacadena-Muico et al. [2] found that for BEED graduates from UM Panabo College, Competency Appraisals had no significant correlation with LET results. However, both General Weighted Average (GWA) and On-the-Job Training (OJT) grades were positively related, underlining the role of academic consistency and practical training in licensure preparedness. Their study also highlighted the need to consider personal and socioeconomic variables in future research.

Expanding on these insights, Entero and Comeros [6] explored academic and psychological readiness among BEED graduates from Cebu Technological University–Carmen Campus. They reported a weak positive correlation between scholastic performance and LET results, while psychological factors such as self-determination and external support systems emerged as important contributors. Interestingly, review center attendance showed limited impact, pointing instead to the value of self-regulated learning and personalized support programs.

Similarly, Dionio *et al.* [3] conducted a study at Misaims University which revealed that GWA, internships, and special demonstrations had significant correlations with LET performance. Teaching competencies showed more variable predictive value. Their regression model suggested that academic performance, particularly GWA, was a consistent and reliable indicator of LET outcomes. They advocated for enhanced curriculum design and targeted pre-service training to bridge academic preparation with licensure demands.

In another predictive-correlational study, Makiling *et al.* [7] examined 225 BSED graduates from a government university in Leyte and found that academic achievement, especially in general and professional education subjects, significantly predicted LET performance. Among the variables, professional education grades were the most influential. This finding emphasizes the need for strategic focus on course performance to increase licensure exam success.

The importance of field-specific differences in predictive strength was emphasized by Ampo [4], who found a significant relationship between GPA and LET results among English and Filipino majors but not among graduates from Physical Science and other disciplines. This indicates that while academic performance is a valuable metric, its predictive power may vary across specialization areas, thus warranting more customized interventions.

Highlighting institutional initiatives, Heretape and Paglinawan [8] examined BEED graduates at Philippine College Foundation and noted the positive perceptions of structured review sessions and mentoring programs. Their findings support the value of academic interventions tailored to LET content, a strategy similarly echoed by Dayadaya and Sermona [9], who analyzed institutional practices across Region VII. Both studies affirm the effectiveness of targeted, evidence-based programs in boosting LET preparedness.

Supporting these perspectives, Amanonce and Maramag [10] identified a strong relationship between GWA and LET performance among 1,017 BSEd and BEEd graduates in Cagayan Province. While pre-board scores also correlated with licensure outcomes, their predictive strength was weaker. The authors advocated for the refinement of review mechanisms and internal assessments to better reflect LET expectations.

Calixto [5], on the other hand, found that although GPA in general and professional education subjects correlated with LET performance, the relationship was not strong enough to serve as a sole predictor. He stressed the importance of curriculum alignment, instructional delivery, and assessment

practices to improve board exam performance. This aligns with the present study's interest in not only academic data but also the structural factors that impact licensure success.

At Northern Negros State College of Science and Technology, Balinario *et al*. [11] demonstrated that BSED graduates outperformed non-BSED graduates across all LET domains. Significant predictors included high GPA, passing admission scores, and background variables such as age, course taken, and parental education. These findings suggest that academic performance, when complemented by demographic factors, offers a more comprehensive understanding of licensure readiness.

In the Cordillera Administrative Region, Dagdagui and Mang-usan [12] confirmed the significant relationship between academic performance and LET outcomes among BSED graduates. Their study noted particular difficulty in the specialization domain, advocating for improved syllabi and a focus on specialization-based instruction, recommendations echoed across multiple studies.

A qualitative study by Albite [13] explored the preparation strategies of BEEd LET topnotchers at the University of Southeastern Philippines. Key themes included goal-setting, consistent review, and strong support systems. Notably, the role of metacognitive skills and faith-based motivation stood out as contributors to licensure success. This human-centered perspective complements quantitative findings by stressing the role of non-academic traits in exam preparedness.

Dela Rosa and Vargas [14] investigated profile variables among 105 BSED graduates at Central Luzon State University and found significant relationships between LET performance and GPA, aptitude test results, and grades in core academic subjects. Interestingly, sex emerged as a significant predictor in the specialization domain. Their study emphasizes the nuanced effects of learner profiles in influencing licensure outcomes.

In a study by Sipacio, Raza, and Gopez [15], data from 2016 to 2019 at a private university revealed consistent positive correlations between GPA and LET results. While student teaching grades showed weaker and more varied correlations, the study reinforced the importance of GPA as a stable indicator of licensure potential, thereby supporting the need to monitor academic indicators throughout the teacher education program.

At Mindanao State University-General Santos, Lagcao *et al.* [16] assessed 468 BEED graduates and confirmed that academic performance, especially in general and professional education courses, significantly predicted LET outcomes. Their study recommended mock exams and structured reviews, which dovetail with earlier findings on the importance of practice-oriented interventions.

Finally, the study by Ibarrientos [17] on Bachelor of Technical Teacher Education (BTTE) graduates from Camarines Sur Polytechnic Colleges used multiple regression and Pearson correlation to examine academic and admission data alongside LET outcomes. Despite low scores in college admission tests, students achieved good academic performance and moderately successful LET results. Academic achievement proved to be a significant predictor, leading to the development of a regression model for forecasting licensure ratings. This aligns closely with the present study's goal to create predictive tools using CBAs and GPA to inform future intervention strategies.

The present study highlights the significance of examining how academic indicators, particularly Competency-Based Assessments (CBAs) and Grade Point Average (GPA), relate to the licensure outcomes of Bachelor of Secondary Education major in Science graduates. While prior research has established general links between academic performance and LET success, this investigation addresses a critical gap by focusing on Science majors, whose specialized academic trajectory may differ from other fields. By probing into the predictive capacity of CBAs across General, Professional, and Specialization courses, along with cumulative GPA, this study provides empirical insights that can inform curriculum development, assessment design, and academic support strategies. The findings underscore the value of continuously evaluating and aligning institutional academic practices with licensure requirements, particularly in science education, where subject mastery and pedagogical competence are both essential.

3. SIGNIFICANCE OF THE STUDY

This study holds academic, institutional, and policy-level importance, particularly in the context of maintaining and enhancing the quality of teacher education in science. The findings are expected to yield valuable insights for multiple stakeholders:

Teacher Education Institutions (TEIs). The study provides empirical evidence on which academic indicators, specifically Competency-Based Assessments (CBAs) and Grade Point Average (GPA); serve as predictors of performance in the Licensure Examination for Teachers (LET). These insights can guide curriculum enhancement, academic advising, and intervention programs to better prepare future science educators for licensure examinations.

Science Education Faculty. For instructors handling General Education, Professional Education, and Specialization courses, the results offer guidance in aligning instructional strategies and assessment practices with licensure competencies. It encourages reflective teaching and data-driven decision-making to ensure that course delivery supports students' licensure readiness.

Teacher Education Students. The findings will help students, particularly those majoring in Science; recognize the academic areas that significantly influence LET success. This awareness may motivate them to invest effort strategically and seek academic support in areas with higher predictive value.

Academic Administrators and Curriculum Developers. The research supports informed decision-making for academic leaders tasked with revising syllabi, conducting program reviews, and implementing quality assurance initiatives. The results may also aid in the development of predictive analytics systems to monitor student performance and identify those needing support.

Policy Makers and Accrediting Bodies. Insights from the study may inform national-level strategies to enhance licensure examination performance, particularly in science

education. Results can contribute to the formulation of data-informed policies related to faculty qualification standards, curriculum development, and institutional monitoring.

Researchers and Future Scholars. The study fills a literature gap regarding academic predictors of LET performance specific to Science majors. As such, it may serve as a foundational reference for future investigations exploring other subject areas, comparative program performance, or the role of non-academic variables in licensure outcomes.

4. METHODOLOGY

Research Design

This study employed a quantitative correlational research design to examine the relationship between academic performance and Licensure Examination for Teachers (LET) results among Bachelor of Secondary Education (BSED) major in Science graduates. It specifically aimed to determine whether final grades in Competency-Based Assessments (CBA 1, CBA 2, and CBA 3) and Grade Point Average (GPA) could predict performance in the LET across the three domains: General Education, Professional Education, and Major (Science).

Respondents and Sampling Technique

The study involved 57 BSED Science graduates from Negros Oriental State University who took the LET between the years 2023 and 2025 under the new curriculum. A purposive sampling technique was used to select respondents based on the following inclusion criteria: (1) must be a graduate of the BSED Science program, (2) must have taken the LET within the specified timeframe, and (3) must have complete records of CBA grades, GPA, and official LET ratings.

Research Instruments and Data Collection

Academic performance indicators, including CBA 1 (General Education), CBA 2 (Professional Education), CBA 3 (Specialization), and GPA, were obtained from official records of the university's student information system. LET results, covering the General Education, Professional Education, Major (Science) components, and the overall LET average, were gathered through official rating sheets issued by the Professional Regulation Commission (PRC).

Prior to data collection, formal permission was obtained from the respondents to access their academic and licensure examination records. Ethical clearance was also secured to ensure compliance with data privacy and confidentiality standards.

Statistical Treatment of Data

Descriptive statistics such as mean and frequency were used to summarize the profile of the respondents based on their academic and licensure performance.

To assess the relationship between academic performance and LET results, the Spearman rank-order correlation coefficient was used. This non-parametric test was deemed appropriate due to the non-normal distribution of GPA, as determined through normality tests. Spearman correlation was applied to examine the strength and direction of associations between:

CBA 1 and LET General Education result

CBA 2 and LET Professional Education result

CBA 3 and LET Major (Science) result

GPA and all three LET components, as well as overall LET rating

Furthermore, a multiple regression analysis was conducted to identify the extent to which CBA grades and GPA could predict LET performance, allowing for the development of a regression model for use in forecasting licensure outcomes of future Science graduates.

Ethical Considerations

All ethical procedures were followed in the conduct of the study. The researchers ensured that participation was voluntary, and informed consent was obtained from each respondent. Data collected were treated with strict confidentiality and used solely for academic and research purposes. The study adhered to institutional research guidelines and was conducted with integrity and respect for participants' rights.

Scope and Limitations

The study is limited by several factors. First, the sample size is relatively small and limited to one state university, which may affect the generalizability of the findings to other institutions and programs. Second, the study is specific to BSED Science majors, and therefore the results may not be applicable to graduates from other specializations such as

RESULTS AND DISCUSSION

Table 1.1 CBA Final Grades and GPA

Grade	CBA 1		CBA 2		CBA 3		GPA	
	F	%	F	%	F	%	F	%
95 & above Excellent (E)	8	14.04	3	5.26	9	15.79	0	0.00
92-94 Very Good (VG)	18	31.58	20	35.09	30	52.63	24	42.11
90-91 Good (G)	9	15.79	4	7.02	13	22.81	33	57.89
88-89 Very Satisfactory (VS)	17	29.82	13	22.81	3	5.26	0	0.00
85-87 Satisfactory (S)	3	5.26	11	19.30	2	3.51	0	0.00
83-84 Fairly Satisfactory (FS)	2	3.51	6	10.53	0	0.00	0	0.00
Total	57	100	57	100	57	100	57	100

Mathematics, English, or Values Education. Third, only archived academic records and official LET results were analyzed; other possible influencing factors such as review center participation, teaching practicum quality, socioeconomic background, and psychological readiness were not included. Fourth, the reliance on non-parametric statistics, such as Spearman correlation, was necessary due to the non-normality of some data, which may limit the power

of some inferential tests. Lastly, the scope is confined to graduates from the 2023 to 2025 cohorts under the new curriculum, and changes in curriculum design or licensure policies beyond this period are not reflected in the analysis.

Table 1.1 presents the distribution of respondents' final grades across three Competency-Based Assessments (CBA 1, CBA 2, and CBA 3) and Grade Point Average (GPA), categorized according to descriptive performance levels. The findings reflect varying levels of academic achievement across the three domains of the teacher education curriculum.

In CBA 1 (General Education), a majority of the respondents fell within the "Very Good" (31.58%) and "Very Satisfactory" (29.82%) categories, while 14.04% achieved "Excellent" ratings. This indicates that foundational general education subjects are generally well-mastered by the respondents. However, the presence of 5.26% and 3.51% in the "Satisfactory" and "Fairly Satisfactory" categories, respectively, points to the need for targeted reinforcement in basic content areas. These findings resonate with Dela Peña [1], who noted that CBA 1 generally had a negligible predictive correlation with LET General Education scores. This suggests that while General Education courses build foundational knowledge, they may require more explicit alignment with LET competencies to improve predictive validity.

In CBA 2 (Professional Education), the distribution is more varied. While 35.09% attained a "Very Good" rating, only 5.26% reached the "Excellent" level. Notably, a substantial proportion of respondents (19.30%) were in the "Satisfactory" range and 10.53% in "Fairly Satisfactory." These lower-performing segments may suggest variability in pedagogical training or instructional delivery. Dela Peña [1] and Tacadena-Muico *et al.* [2] emphasized that professional education grades are more strongly correlated with LET performance, particularly in the ProfEd domain. Therefore, the lower distribution in the higher achievement categories in CBA 2 may signal the need for strengthened professional coursework or more structured teaching simulations.

For CBA 3 (Specialization/Science subjects), a majority of respondents demonstrated strong performance, with 52.63% categorized as "Very Good" and 15.79% as "Excellent." Only 5.26% and below fell under "Very Satisfactory" or lower. This strong showing is encouraging, particularly since the LET Major component is often perceived as more challenging for Science majors due to content complexity [12]. The performance aligns with the findings of Dionio et al. [3], who argued that academic performance in specialization subjects holds moderate predictive strength, and that high grades in this area may be instrumental in overcoming challenges in the LET's subject-specific component.

In contrast, GPA distribution reveals that no respondents reached "Excellent," "Very Satisfactory," or below. Most graduates (57.89%) were rated as "Good," while 42.11% were in the "Very Good" category. This centralized distribution suggests a strong overall academic standing among the cohort, albeit without extremities. The absence of "Excellent" GPAs could be due to institutional grading policies or conservative evaluation standards. Nonetheless, studies by Amanonce and Maramag [10] and Dionio et al. [3] affirmed the stability of GPA as a significant predictor of LET success across domains. Thus, even without scores in the highest bracket, a consistently "Good" to "Very Good" GPA profile may be sufficient for maintaining high LET passing rates, as observed in the 100% performance of this cohort in recent years.

These findings reinforce the argument made by Makiling et al. [7] that professional and specialization subjects play a pivotal role in shaping licensure performance, more so than general education. The evidence also supports the assertion of Entero and Comeros [6] that academic indicators must be examined in tandem with instructional quality and institutional interventions to ensure LET readiness.

Table 1.2 LET Ratings

Rating	General Education		Professional Education		Major (Science)		Average	
	F	%	F	%	F	%	F	%
92-94	3	5.26	1	1.75	2	3.51	2	3.51
90-91	17	29.82	5	8.77	5	8.77	3	5.26
88-89	12	21.05	11	19.30	13	22.81	15	26.32
85-87	13	22.81	29	50.88	18	31.58	23	40.35
83-84	7	12.28	5	8.77	8	14.04	8	14.04
79-82	7	12.28	8	14.04	13	22.81	8	14.04
Total	57	100	57	100	57	100	57	100

Table 1.2 shows the frequency and percentage distribution of LET scores across General Education, Professional Education, Major (Science), and the overall average. The results reveal significant variation in achievement levels among the 57 BSED Science graduates.

In the General Education domain, the highest proportion of examinees (29.82%) scored within the 90–91 range, followed by 21.05% in the 88–89 range. Only 5.26% of the respondents reached scores between 92 and 94. This outcome indicates that while many students performed well, only a few obtained top scores. Dela Peña [1] found that performance in General Education CBAs had little predictive strength for LET results, suggesting a potential misalignment between classroom assessments and the actual licensure exam.

For Professional Education, half of the respondents (50.88%) obtained scores within the 85–87 range. Meanwhile, only 1.75% scored between 92 and 94, and 8.77% scored between

90 and 91. This trend reflects moderate performance in pedagogical subjects. As noted by Entero and Comeros [6], academic preparation alone may not ensure high LET scores without strong psychological readiness and institutional support. Tacadena-Muico et al. [2] also emphasized that while professional education grades and OJT experience correlate with licensure outcomes, consistent instructional quality plays a pivotal role.

The Major (Science) domain revealed more dispersed scores. A total of 31.5% of the respondents scored within 85–87, while 22.81% fell into both the 88–89 and 79–82 brackets. Only 3.51% reached 92–94. These results underscore the relative difficulty of the science specialization in the LET, consistent with findings by Dagdagui and Mang-usan [12], who observed lower performance trends in specialization subjects. Ampo [4] similarly reported weaker correlations between GPA and LET results in science-related fields, possibly due to the complexity of subject content.

The Overall LET average shows that 40.35% of respondents scored between 85 and 87, followed by 26.32% who scored 88–89. Only 3.51% achieved scores between 92 and 94. This distribution reflects a strong general performance among the graduates, though with limited representation in the higher score ranges. According to Dionio et al. [3], consistent academic performance contributes significantly to licensure outcomes, yet additional factors such as enhanced teaching demonstrations and internship quality can further strengthen results. Furthermore, Heretape and Paglinawan [8] emphasized the importance of structured review programs and mentoring in boosting LET scores.

The findings confirm earlier conclusions by Amanonce and Maramag [10], who reported that while GPA is a valid predictor, top LET performance requires intentional curriculum design and preparatory strategies. As Makiling *et al.* [7] observed, performance in the professional and major domains tends to influence LET success more significantly than general academic performance.

Table 2.1 : Relationship Between the Respondents' CBA Final Grades, GPA, and Their LET Rating

CBA Final Grades vs LET Ratings	Spearman Rho	Degree of Relationship	p-value	Decision
CBA 1 vs GenEd	0.270	Low	0.042	Significant, Reject the Null
CBA 1 vs LET general average Result	0.291	Low	0.028	Significant, Reject the Null
CBA 2 vs ProfEd	0.093	Negligible	0.491	Non-Significant, Fail to Reject the Null
CBA 2 vs LET general average Result	0.160	Negligible	0.235	Non-Significant, Fail to Reject the Null
CBA 3 vs Major	-0.151	Negative, Negligible	0.263	Non-Significant, Fail to Reject the Null
CBA 3 vs LET general average Result	0.013	Negligible	0.922	Non-Significant, Fail to Reject the Null
GPA vs GenED LET Result	0.352	Low	0.007	Significant, Reject the Null
GPA vs ProfED LET Result	0.244	Low	0.068	Non-Significant, Fail to Reject the Null
GPA vs Major (Science) LET Result	0.248	Low	0.063	Non-Significant, Fail to Reject the Null
GPA vs LET general average Result	0.314	Low	0.017	Significant, Reject the Null

*Adapted from Calmorin
An r ± 0.00 denotes zero correlation.
An r from 0.01 to ± 0.20 deals on negligible correlation
An r from ± 0.21 to ± 0.40 denotes low or slight relationship.
An r from ± 0.41 to ± 0.70 indicates marked or moderate correlation.
An r from ± 0.71 to ± 0.90 shows high relationship.
An r from ± 0.91 to ± 0.99 denotes very high correlation.
An r ±1.0 indicates perfect relationship.

Table 2.1 presents the Spearman rank-order correlation results examining the relationship between the respondents' academic performance, measured through Competency-Based Assessments (CBAs) and Grade Point Average (GPA), and their corresponding LET ratings across General Education, Professional Education, Major (Science), and overall performance. The results reveal varying degrees of association, with GPA demonstrating stronger and more consistent predictive value than CBAs.

A significant low positive correlation was found between CBA 1 (General Education) and both the LET General Education rating ($r = 0.270$, $p = 0.042$) and the LET general average ($r = 0.291$, $p = 0.028$). These results suggest that academic performance in general education courses may have a modest yet meaningful association with licensure performance. Although Dela Peña [1] reported a negligible correlation between General Education CBA and LET scores among Values Education majors, this study indicates slightly stronger relationships among Science majors. This may reflect subject-matter sensitivity or improved curricular alignment in general education courses within the BSED Science track. These findings align with Calixto [5], who emphasized the importance of aligning instruction and assessment practices with board examination standards.

In contrast, CBA 2 (Professional Education) showed a negligible and non-significant correlation with both LET Professional Education ratings ($r = 0.093$, $p = 0.491$) and LET general average ($r = 0.160$, $p = 0.235$). Despite the central role of pedagogy in teacher education, these results imply that grades in professional education courses do not directly translate to LET performance. This is consistent with findings by Tacadena-Muico et al. [2], who found that while

GWA and OJT grades correlate with LET success, competency-based assessments in pedagogy were not strongly predictive. Entero and Comeros [6] also highlighted that psychological readiness and institutional factors, such as mentoring and review programs, contribute more significantly to performance than classroom grades alone.

For CBA 3 (Specialization in Science), the correlations were negligible and statistically non-significant with both the LET Major ($r = -0.151$, $p = 0.263$) and the overall LET average ($r = 0.013$, $p = 0.922$). The weak and slightly negative correlation with LET Major results is particularly noteworthy. Despite CBA 3 being the most content-specific measure among the CBAs, it appears disconnected from the LET specialization outcomes. This aligns with Dagdagui and Mang-usan [12], who found that Science majors often struggle with LET Major exams due to the breadth and depth of content. Ampo [4] further emphasized that the predictive relationship between specialization grades and licensure performance in science-related fields tends to be inconsistent, underscoring the need to reassess how subject mastery is evaluated institutionally.

In contrast to CBAs, GPA displayed more stable and statistically meaningful relationships. A significant low positive correlation was found between GPA and LET General Education rating ($r = 0.352$, $p = 0.007$) and between GPA and overall LET average ($r = 0.314$, $p = 0.017$). These findings support the assertion of Dionio et al. [3] that cumulative academic performance, as captured by GPA, offers a more reliable prediction of licensure outcomes. Although the correlations between GPA and the other two domains, Professional Education ($r = 0.244$, $p = 0.068$) and Major (Science) ($r = 0.248$, $p = 0.063$), did not reach statistical significance, their direction and magnitude suggest potential predictive relevance.

These outcomes corroborate earlier findings by Amanonce and Maramag [10], who reported that GPA holds moderate predictive validity in LET performance. Similarly, Makiling et al. [7] underscored the role of consistent academic achievement in boosting board exam readiness. The relatively stronger correlations between GPA and LET ratings across domains suggest that GPA, being a cumulative measure of overall academic performance, may better capture the breadth of competencies assessed in the licensure examination.

In summary, the data suggest that GPA is a more consistent predictor of LET success compared to individual CBAs, especially when considering the overall licensure performance. While CBA 1 showed some statistically significant correlation, CBAs 2 and 3 did not. These findings emphasize the importance of re-evaluating assessment practices and ensuring alignment between institutional grading systems and licensure standards, particularly in science education.

Table 3.1 Multiple Correlation Between the Grades (CBA Grades and GPA) and Overall LET Rating

LET Rating	R	Interpretation	R^2	Interpretation	Adjusted R^2	Interpretation
Overall	0.398	Medium	0.159	Small Variance explained	0.094	Weak model fit, S

Legend: **NS** – Not Significant **S** – Significant at 0.05 level
R - Multiple Regression Coefficient **R^2 -** Coefficient of Determination

Correlation Coefficient	Interpretation (Size of Correlation)
±0.00 - ±0.09	Negligible
±0.10 - ±0.29	Small
±0.30 - ±0.49	Medium
±0.50 - ±1.00	Large

The results of the multiple correlation analysis reveal a moderate positive relationship between the respondents' combined academic performance (as measured by CBA 1, CBA 2, CBA 3, and GPA) and their overall LET rating, with a multiple correlation coefficient (R) of 0.398. This value indicates that the linear relationship between the combined set of predictors and the criterion variable is moderate in strength. According to standard interpretations, this falls within the medium correlation range (±0.30–±0.49), suggesting that the academic indicators considered in this model are moderately effective in collectively predicting LET outcomes.

The coefficient of determination (R^2) is 0.159, meaning that only 15.9% of the variance in the LET overall rating can be explained by the final grades in CBAs and GPA. This level of explained variance is relatively small, indicating that while academic performance plays a role in licensure examination outcomes, a substantial proportion of variability remains unexplained. This is consistent with the findings of Dionio et al. [3] and Tacadena-Muico et al. [2], both of whom emphasized that academic grades alone do not capture the full range of factors influencing LET performance. Factors such as test anxiety, review center attendance, and socio-emotional readiness may play critical, albeit unmeasured, roles in licensure success.

The adjusted R^2 value of 0.094 further clarifies the model's predictive utility. Since adjusted R^2 accounts for the number of predictors in the model and corrects for overfitting, this result suggests that only 9.4% of the variance in LET performance can be reliably attributed to CBA grades and GPA when generalizing to the broader population. This result reflects a weak model fit, highlighting limitations in the predictive capacity of the current set of academic indicators. As Makiling et al. [7] emphasized, teacher education programs must consider not only academic grades but also programmatic interventions, such as mentoring and simulation teaching experiences, to more effectively prepare students for the licensure examination.

The weak model fit may also support the findings of Ampo [4] and Dagdagui and Mang-usan [12], who argued that among

Science majors, traditional academic metrics such as GPA or specialization grades are less predictive due to the challenging nature of the LET Science content. This is particularly important for teacher education institutions focusing on STEM fields, where deep content knowledge and cognitive application skills are critical to licensure success.

Nonetheless, the statistical significance of the model (as indicated by the "S" in the interpretation) affirms that despite its modest strength, the relationship between academic indicators and LET performance is not due to chance. This supports the broader findings of Amanonce and Maramag [10] and Entero and Comeros [6], who stressed the importance of institutional monitoring of academic performance to identify students who may require additional support before licensure.

Table 3.2 Initial Regression Coefficients and significance of CBAs and GPA in Predicting LET Rating

LET Component	Variables	Unstandardized Coefficient (B)	Standardized Coefficient (Beta)	p-value (Sig.)	Interpretation
General Education	Constant	23.401			Not Significant
	CBA 1	0.183	0.134	0.177	Not Significant
	GPA	0.504	0.378	0.188	Not Significant
Professional Education	Constant	19.662			Not Significant
	CBA 2	0.094	0.109	0.393	Not Significant
	GPA	0.635	0.361	0.084	Not Significant
Major (Science)	Constant	29.523			Not Significant
	CBA 3	-0.212	0.188	0.265	Not Significant
	GPA	0.833	0.364	0.026	Significant
Overall Rating	Constant	35.301			Not Significant
	CBA 1	0.247	0.137	0.077	Not Significant
	CBA 2	0.110	0.106	0.308	Not Significant
	CBA 3	-0.312	0.192	0.109	Not Significant
	GPA	0.518	0.389	0.189	Not Significant

Legend: S – Significant at α=0.05 **NS** – Not Significant at α=0.05

The table presents the results of multiple regression analysis assessing the predictive contributions of Competency-Based Assessments (CBAs) and Grade Point Average (GPA) on various components of the Licensure Examination for Teachers (LET): General Education, Professional Education, Major (Science), and the Overall LET Rating. The results include unstandardized coefficients (B), standardized coefficients (Beta), and p-values to determine the significance of each academic variable in predicting LET performance.

In the General Education component, neither CBA 1 ($p = 0.177$) nor GPA ($p = 0.188$) were statistically significant predictors. Although GPA had a higher standardized coefficient (Beta = 0.378) than CBA 1 (Beta = 0.134), both failed to reach the 0.05 threshold. These results suggest that while general academic performance may have some influence, it is insufficient alone to predict success in the General Education portion of the LET. This supports Dela Peña [1] who previously observed a negligible to low correlation between general education academic performance and LET outcomes. Additionally, Calixto [5] argued that even when academic grades are high, misalignment between assessments and licensure content can weaken their predictive value.

For Professional Education, both CBA 2 ($p = 0.393$) and GPA ($p = 0.084$) were not statistically significant predictors. However, GPA again demonstrated a stronger Beta value (0.361) compared to CBA 2 (0.109), indicating that it may still hold some practical relevance, albeit not statistically conclusive in this model. These findings mirror those of Tacadena-Muico et al. [2], who noted that professional education grades do not consistently predict LET success unless supported by strong practical training such as OJT. Likewise, Entero and Comeros [6] emphasized that psychological and institutional readiness often mediate the impact of pedagogy-focused coursework on actual board exam performance.

In the Major (Science) component, GPA emerged as a statistically significant predictor ($p = 0.026$), with a Beta coefficient of 0.364, while CBA 3 remained non-significant ($p = 0.265$). Notably, the unstandardized coefficient for CBA 3 was negative (B = -0.212), possibly indicating inconsistencies in the alignment of specialization course assessments with the LET Science domain. This finding validates Dagdagui and Mang-usan [12] and Ampo [4], who both observed challenges in the predictive alignment of content-specific grades and LET Major results, particularly in Science and other technically dense specializations. The significant role of GPA in predicting Science LET performance reinforces the broader conclusion of Dionio et al. [3] that cumulative academic achievement remains a stable and meaningful predictor of licensure outcomes, especially in specialized fields.

When considering the Overall LET Rating, none of the predictors, including GPA ($p = 0.189$), achieved statistical significance. However, GPA again produced the highest Beta value (0.389), suggesting that it continues to be a more consistent and meaningful predictor compared to any of the CBA components. These findings are consistent with Amanonce and Maramag [10], who demonstrated that GPA serves as a stronger predictor of overall licensure performance than domain-specific assessments. Makiling et al. [7] also advocated for institutional reforms to increase the predictive validity of formative assessments and develop academic interventions that align more effectively with licensure requirements.

In summary, the regression results show that GPA is the only significant predictor, specifically for LET Major (Science). Its consistently higher Beta values across all LET components suggest its practical relevance, even when not statistically significant. In contrast, none of the CBAs significantly predicted LET results, raising concerns about the extent to which these assessments reflect competencies tested in the national licensure examination. These findings

call for a critical review of how CBAs are designed and implemented, particularly in the context of preparing Science majors for board examination success. Strengthening assessment design, curricular alignment, and academic support systems may enhance the predictive accuracy of institutional indicators and support more effective licensure outcomes.

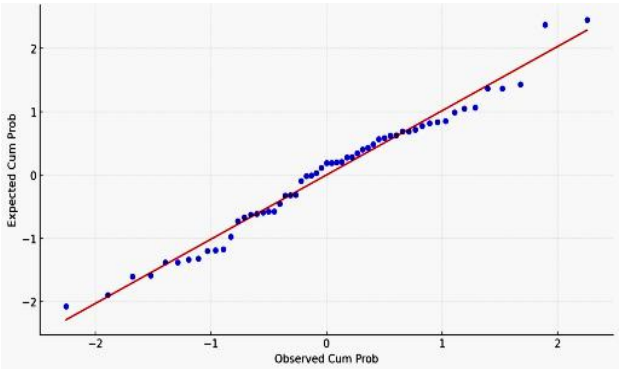

Figure 3.1. Normal P-P Plot of Regression Standardized Residuals Dependent Variable: LET Major (Science)

The Normal Probability–Probability (P–P) plot displayed above illustrates the standardized residuals from the regression model predicting LET Major (Science) based on CBA 3 and GPA. This plot evaluates the assumption of normality of residuals, which is essential for the validity of the linear regression model.

As observed, the data points generally align closely with the diagonal reference line, indicating that the residuals are approximately normally distributed. Although minor deviations appear at the extremes, the residual pattern remains within acceptable bounds. This confirms that the assumption of normality has not been violated, thereby supporting the robustness of the regression model.

The regression analysis previously revealed that GPA was a statistically significant predictor of LET Major performance ($p = 0.026$), whereas CBA 3 was not. The derived regression equation for predicting LET Major (Science) is as follows:

LET Major (Science) = 29.523 − 0.212 (CBA 3) + 0.833 (GPA)

This formula indicates that for every one-unit increase in GPA, the LET Major score is expected to increase by 0.833 points, holding CBA 3 constant. On the other hand, CBA 3 has a negative but non-significant coefficient, suggesting it does not meaningfully contribute to the model. These findings align with the conclusions of Dionio *et al.* [3] and Amanonce and Maramag [10], who emphasized that GPA remains a consistent and reliable predictor of licensure outcomes, particularly in specialized subject areas like science.

The model's soundness is further supported by the P–P plot, affirming its appropriateness for drawing inferences. The significance of GPA also reinforces the assertion by Makiling et al. [7] that institutional assessments such as GPA, when grounded in valid academic standards, can help identify future licensure success. Meanwhile, the weak influence of CBA 3 confirms earlier findings by Ampo [4] and Dagdagui and Mang-usan [12], who observed that subject-specific assessments in science often do not translate directly to LET performance due to gaps in curricular alignment.

Methodologically, the model's normal residual distribution and valid regression parameters provide evidence for the use of academic metrics in early forecasting. As Entero and Comeros [6] suggested, models that integrate academic data and statistical rigor can provide a basis for institutional interventions aimed at improving licensure performance.

In summary, the P–P plot validates the assumption of normality, supporting the legitimacy of the regression model used. The model reveals that among the predictors tested, only GPA significantly predicts LET Major performance, reinforcing its role as a key indicator of licensure readiness in science education.

CONCLUSION

This study set out to determine whether academic performance, specifically Competency-Based Assessments (CBAs) in General Education, Professional Education, and Specialization, along with Grade Point Average (GPA), can serve as reliable predictors of Licensure Examination for Teachers (LET) results among Bachelor of Secondary Education (BSED) major in Science graduates at Negros Oriental State University (NORSU). With consistent LET passing rates under the new curriculum, including a perfect 100 percent from 2023 to 2025, the study aimed to uncover the academic variables most closely associated with licensure success in a high-performing science education context.

The findings reveal several important insights. In terms of descriptive outcomes, most graduates earned "Good" to "Very Good" ratings in CBAs and GPA, reflecting strong academic performance. However, differences were observed across CBA domains, with the highest performance in Specialization (CBA 3) and relatively lower scores in Professional Education (CBA 2). LET scores mirrored these patterns, with the Science Major component showing more varied results, consistent with existing literature that highlights its difficulty.

Correlation analysis using Spearman rank-order revealed that CBA 1 had a significant low positive correlation with both the LET General Education result and the overall LET rating. On the other hand, CBA 2 and CBA 3 showed negligible and non-significant relationships with LET outcomes. GPA emerged as the most stable academic indicator, demonstrating significant low positive correlations with the LET General Education result and the overall LET rating. Although its correlations with the Professional and Major components were not statistically significant, their directions suggested potential predictive value.

The regression analysis further emphasized the role of GPA. It was the only statistically significant predictor for the LET Major (Science) component, with a standardized coefficient indicating moderate influence. None of the CBAs significantly predicted LET outcomes in any domain, though CBA 1 approached significance in relation to the overall LET rating. The regression model, while statistically significant, had a low explanatory power, with an adjusted R-squared of 0.094. This indicates that only a small portion of the variance

in LET ratings can be explained by the academic variables analyzed.

The best-fitting regression model for LET Major (Science) was: LET Major (Science) = 29.523 − 0.212 (CBA 3) + 0.833 (GPA). This formula confirms the statistical relevance of GPA in forecasting licensure outcomes for science education majors, while CBA 3 was not a meaningful contributor.

In conclusion, while academic performance contributes to licensure outcomes, GPA is the most consistent and practical predictor among the variables studied, particularly for the Major (Science) component. The limited predictive power of CBAs suggests a misalignment between institutional assessments and the LET, emphasizing the need for curriculum review and better alignment with licensure standards. Although academic indicators like GPA hold value, they are not sufficient on their own to account for LET success. Therefore, teacher education programs must also consider non-academic factors such as psychological readiness, institutional support, and targeted intervention programs. Strengthening assessment practices and using GPA as an early-warning tool can help institutions support future science teachers more effectively and sustain high licensure performance.

RECOMMENDATIONS

Based on the findings and conclusion of the study, several recommendations are proposed to enhance the academic preparation and licensure readiness of Bachelor of Secondary Education major in Science students at Negros Oriental State University:

Strengthen the alignment between CBAs and LET competencies. Since the results showed that Competency-Based Assessments, particularly in Professional Education and Specialization, did not significantly predict LET outcomes, the design and implementation of CBAs should be revisited. Faculty members and curriculum developers are encouraged to ensure that assessment tools reflect the competencies and content domains covered in the LET, particularly in the Science Major component.

Utilize GPA as an early indicator of LET readiness. Given the consistent and significant relationship between GPA and LET performance, academic advisers and program coordinators should regularly monitor GPA trends to identify students who may need academic interventions. Early detection can lead to targeted support programs such as mentoring, peer tutoring, or enrichment sessions.

Enhance science content mastery through intensive review programs. The specialization component of the LET proved to be the most challenging for respondents. Thus, it is recommended that the department implement structured content-focused review classes or boot camps during the final year of study, aligned specifically with the LET blueprint in Science.

Integrate simulation teaching and practical training to reinforce professional competencies. While professional education grades were not significant predictors in the current study, practical exposure remains essential. It is recommended that simulation teaching, lesson demonstrations, and micro-teaching activities be intensified across Professional Education courses to better prepare students for licensure assessments.

Develop a predictive monitoring system using academic data. The institution may consider creating a dashboard or digital system that tracks students' CBA scores and GPA in real time. This can be used to forecast potential LET performance and guide decision-making for academic support services.

Promote faculty development for assessment literacy. Teachers handling General, Professional, and Specialization courses should undergo regular training on outcome-based assessment and LET-aligned evaluation techniques. This will ensure that institutional assessments are both valid and predictive of licensure success.

Encourage further research including non-academic predictors. Future studies should incorporate variables such as teaching practicum quality, review attendance, socioeconomic status, and psychological preparedness to build more comprehensive predictive models. A mixed-methods approach may also uncover deeper insights into the factors influencing LET outcomes among Science majors.

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