

Across Academic Programs: Implications for Teaching Quality and Continuous Improvement

RESEARCH ARTICLE**Kareen B. Leon^{*1}, Kristian S. Corpuz²**

^{*1} Quality Assurance Office,
University of Baguio
Baguio City, Philippines
kbleon@e.ubaguio.edu
0000-0002-3818-3119
² Quality Assurance Office,
University of Baguio
Baguio City, Philippines
kscorpuz@e.ubaguio.edu
0009-0000-3904-5837

Abstract

This study evaluates one of the University of Baguio's graduate outcomes, which is the performance in external examination results through the preparation process, revealing a strong foundation in teaching quality, collaborative learning, and structured simulations which are some inputs to student learning outcomes and curriculum effectiveness leading to work-ready graduates. While both alumni and faculty members view the preparation strategies positively, the latter consistently express greater optimism. Mann-Whitney U tests confirm statistically significant differences between faculty and alumni perceptions across key domains, including preparation quality, faculty support, resource access, engagement, and exam confidence. Qualitative analysis reinforces these insights, commending mentoring and practical exam tips while identifying improvement areas such as updated materials, optimized scheduling, enhanced test-taking strategies, and stronger wellness support. Interpreted through the Input-Process-Output and Total Quality Management (TQM) frameworks, these findings highlight the need for continuous improvement in inputs (resources, curriculum), processes (feedback, simulations), and outputs (student readiness, success rates). Sustained refinement of this system is essential to educational quality assurance by maximizing student confidence and licensure exam performance.

Keywords: performance in external examinations, graduate outcomes, work-ready graduates, teaching quality, trend analysis

Corresponding Author: Kareen B. Leon
kbleon@e.ubaguio.edu
Quality Assurance Office
University of Baguio
Philippines

Received Date: April 8, 2026

Accepted Date: September 25, 2026

**INTRODUCTION**

Globally, educational systems aim to align outcomes with industry standards to ensure graduates are workforce-ready, with licensure examination performance serving as a key indicator of educational quality and program effectiveness (Aplao & Hernandez, 2024). In the Philippines, these results significantly influence university rankings, accreditation, and funding (Abdulmajid, 2024; Tan, 2016), making it essential for the University of Baguio (UB) to sustain strong performance to maintain its reputation and competitiveness (UB, 2023). This study is anchored in the Input-Process-Output (IPO) Model, supported by Systems Theory and Total Quality Management (TQM), which collectively explain how educational inputs, processes, and institutional interdependencies affect outcomes and promote continuous improvement (APA, n.d.; Vornberg, 2013; Chizmar, 2014; Johnson, 1993). Aligned with the outcomes-based quality assurance framework of

PACUCOA and CHED, the study treats licensure performance and stakeholder feedback as key measures for evaluating and enhancing UB's exam preparation strategies and overall educational effectiveness.

Literature Review

While existing studies provide insights into factors affecting licensure exam performance, a gap remains in understanding these influences holistically at the University of Baguio (UB). Anague and Fernandez (2022) identified discrepancies between academic and licensure performance, suggesting possible curriculum misalignment, but focused only on isolated academic factors. Similarly, studies by Tulud et al. (2023) and Dayaday (2018) emphasized the impact of learning environment, stress, faculty support, and instructional quality on exam outcomes, yet did not examine how these factors interact or apply specifically to UB. Consequently, there is a need for a comprehensive,

localized analysis that integrates both environmental and institutional variables. This study addresses this gap by examining the interplay of these factors within UB, aiming to provide a more nuanced understanding of licensure exam performance and inform more effective, targeted interventions for educational improvement.

Theoretical/Conceptual Framework

The study is grounded in Systems Theory and Total Quality Management (TQM), providing a comprehensive framework for analyzing and improving the licensure examination performance of UB graduates. Systems Theory views the institution as an interconnected system where elements such as curriculum, faculty, administrative support, and student engagement are interdependent, meaning changes in one component can influence overall outcomes (Vornberg, 2013). Using this perspective, the study examines trends over the past five years to understand how these factors interact and affect exam performance.

Significance of the Study

This study is essential for the University of Baguio (UB) as it aims to enhance educational quality through the analysis of licensure exam results over the past five years, identifying strengths and areas for improvement. The findings will help align curriculum, teaching strategies, and resource allocation with licensure requirements, thereby improving student preparedness and performance. Additionally, the study will support faculty and administrators in refining instructional practices and strengthening UB's reputation as a leading institution. It also contributes to data-driven policy development and aligns with SDG 4 (Quality Education), promoting continuous improvement and global competitiveness.

Objectives of the Study

This study aims to analyze the performance of UB alumni in licensure examinations by examining trends in exam results over the past five years, from May 2019 to June 2024. Specifically, it seeks to answer the following questions:

1. What trends in licensure exam performance can be identified across different programs at UB over the past five years?
2. How effective is UB's preparation for licensure exams in terms of preparation strategies, faculty support, resource availability, student engagement,

and students' feelings of preparedness and confidence?

3. What are the perceptions and feedback from faculty and alumni regarding the effectiveness of the current exam preparation strategies and their outcomes?
4. Based on the identified trends and stakeholder feedback, what specific strategies can be developed to address the challenges and sustain improvements in licensure exam performance?

METHODOLOGY

This study used a mixed-method concurrent design, combining quantitative analysis of licensure exam results from 2019 to 2024 with qualitative insights from faculty and alumni to assess factors influencing exam performance. A stratified sample included 177 faculty and 41 alumni across 13 programs, supported by records of 4,080 examinees. Data were collected through validated questionnaires and open-ended responses via online and printed formats. Quantitative data were analyzed using descriptive statistics, time-series trends, and non-parametric tests, while qualitative data underwent thematic analysis. The study focused on performance trends, evaluation of preparation strategies, and suggested improvements, while adhering to ethical standards such as informed consent, confidentiality, and secure data handling.

Study Design

This study employs a mixed-method concurrent research design. The quantitative component produced descriptive time-series summaries of pass rates (first-time, repeater, and overall) and UB-national differentials for each program from May 2019 to June 2024.

Concurrently, the qualitative component gathered insights on the perceptions of key stakeholders regarding preparation strategies and outcomes, thereby enabling a holistic understanding of the factors influencing exam performance. The scope of this research encompassed an analysis of licensure examination results across various academic programs at UB, focusing on data from the past five years to capture recent trends and the current state of exam preparation. The study was limited by its reliance on historical data and the experiences of faculty and alumni, which may not fully represent the current

student body's perspectives. Additional limitations include the potential for response bias and the subjective nature of self-reported data from questionnaires and interviews.

Sample/Population of the Study

The study used stratified sampling to represent all UB schools offering licensure programs, though only 13 of 14 programs participated, with 177 faculty and 41 alumni respondents. For the quantitative component, records of 4,080 alumni who took licensure exams (May 2019–June 2024) and faculty inputs were analyzed, though limited alumni responses were obtained due to contact constraints. Survey distribution was facilitated through deans' offices, ensuring one response per participant. PRC records were used to examine performance trends, while inconsistencies in identifying major subject teachers were addressed through coordinated survey distribution. Bar exam data were excluded due to unavailable official records. The qualitative component gathered insights via flexible interview formats (Google Forms or printed), allowing deeper understanding of preparation strategies. Overall, purposive selection of faculty and recent alumni ensured relevant data on preparation practices, performance, and influencing factors.

Data Gathering Tools

The research instruments, a questionnaire and interview guide were developed through a comprehensive review of literature, theoretical frameworks, and empirical studies on licensure exam preparation. Grounded in educational psychology and assessment, the instruments focused on key factors such as academic support, teaching effectiveness, and exam readiness. The questionnaire used a Likert scale to measure constructs like curriculum coverage, teaching methods, resources, student engagement, and preparedness, enabling structured analysis. Meanwhile, the semi-structured interview guide captured in-depth insights from faculty and alumni, complementing quantitative data. Content validity was ensured through expert review by the UB RIECO office, leading to refinements based on feedback. The tool validator cleared the questionnaire and interview guide, and gave the go signal to proceed with administering them, without requiring reliability testing.

Treatment of Data

The study addressed licensure exam performance trends using descriptive time-series analysis by computing pass rates (first-time, repeaters, overall), generating run charts per exam window, and calculating UB–national differentials. For evaluating alumni and faculty perceptions, responses were aggregated at the school level due to uneven program representation. Descriptive statistics (means, SDs) were computed, but since data were non-normal (Kolmogorov–Smirnov), medians and IQRs were emphasized. Differences between alumni and faculty were tested using Mann–Whitney U, while Kruskal–Wallis H tests examined variations across programs. A 4-point Likert scale assessed effectiveness, ranging from strongly disagree (not effective) to strongly agree (highly effective). Lastly, open-ended responses were thematically analyzed (e.g., updated materials, simulation practice, wellness support), with representative quotes supporting quantitative findings to inform targeted improvements.

Ethical Considerations

This study adheres to the highest ethical standards in research. Letters were sent to all respondents prior to data collection, ensuring they were fully aware of the study's purpose and their role in it. They were assured of their right to withdraw from the study at any point without penalty. All data were handled with strict confidentiality, and results were reported in a manner that ensured the privacy and anonymity of all respondents. Additionally, the study provides benefits to participants by offering feedback on the findings, which may help improve future exam preparation efforts. Respondents did not incur any costs, and all necessary resources were provided by the university. Record keeping was meticulous, with electronic data stored securely and paper records kept in locked files to prevent unauthorized access. In line with principles of transparency and responsible research practices, the study also acknowledges the use of artificial intelligence (AI) tools – specifically Chat GPT and Perplexity – to help the researchers organize ideas and refine sentence construction for clarity and coherence during the writing process. These tools were not used for data generation or analysis but solely for improving the structure and readability of the report. The findings from this study shall be disseminated through academic publications, presentations at educational conferences, and/or summary reports distributed to participants upon request, and to UB administrators. This dissemination

will ensure that the insights gained from the study contribute to the broader academic community and directly inform future educational strategies at UB.

RESULTS AND DISCUSSION

This part shows the attainment of the aims of the research to analyze the performance of UB alumni in licensure examinations by examining trends in exam results over the past five years. The specific objectives answered were: trends in licensure exam performance that can be identified across different programs at UB over the past five years; effectiveness of UB's preparation for licensure exams in terms of preparation strategies, faculty support, resource availability, student engagement, and students' feelings of preparedness and confidence; the perceptions and feedback from faculty and alumni regarding the effectiveness of the current exam preparation strategies and their outcomes; and the specific strategies that can be developed to address the challenges and sustain improvements in licensure exam performance based on the identified trends and stakeholder feedback.

The answer to the first objective follows. It has to be noted here that due to the COVID-19 pandemic, there were some licensure examinations that were postponed or moved to a later date like the licensure exam for Certified Public Accountants (CPAs) last May 2020, October 2020 and May 2021. This scheduling disruption altered cohort composition and the mix of first-time takers and repeaters, which is important because small repeater cohorts can produce large percentage swings that distort overall rates across sittings.

Effectiveness of UB's preparation for licensure exams in terms of preparation strategies, faculty support, resource availability, student engagement, and students' feelings of preparedness and confidence

Based on results, both alumni and faculty rated UB's licensure-exam preparation positively. Using the study's interpretation bands (2.51–3.25 = Effective; 3.26–4.00 = Highly Effective), alumni ratings cluster around Effective (overall $M = 3.12$, $SD = 0.53$), while faculty ratings cluster around Highly Effective (overall $M = 3.49$, $SD = 0.50$). This pattern indicates broad satisfaction, with faculty consistently more optimistic

than alumni.

The clearest gap is in Resource Availability, where alumni average Effective ($M = 2.93$, $SD = 0.58$) but faculty average Highly Effective ($M = 3.50$, $SD = 0.54$). This suggests a perception mismatch about the currency, sufficiency, or accessibility of materials and facilities. A similar, smaller gap appears in Student Engagement & Feedback (alumni $M = 3.19$ vs. faculty $M = 3.54$), pointing to opportunities to standardize more interactive, feedback-rich routines. Even in domains where both groups are positive—Faculty Support and General Preparation – faculty remain higher (e.g., Faculty Support: alumni $M = 3.34$; faculty $M = 3.55$). Prior studies confirm that graduates tend to be more critical of preparation quality than faculty because they experience the “last mile” of licensure performance (Dayaday, 2018; Tulud et al., 2023). This aligns with Systems Theory, which emphasizes that stakeholders situated at different points of the input–process–output chain perceive institutional effectiveness differently (Vornberg, 2013). Alumni perspectives, therefore, surface practical insights on alignment with PRC exam demands, while faculty perspectives highlight institutional intentions and resource commitments. Taken together, these complementary views enrich UB's quality assurance cycle by balancing internal confidence with external feedback, a balance also emphasized in outcomes-based accreditation frameworks such as PACUCOA (PACUCOA, n.d.).

One of the clearest strengths lies in the expertise and accessibility of faculty. Both cohorts recognize that instructors are well-informed about exam formats (Alumni: $M = 3.54$, $SD = 0.67$; Faculty: $M = 3.49$, $SD = 0.66$) and provide extra help outside of class hours (Alumni: $M = 3.34$, $SD = 0.73$; Faculty: $M = 3.56$, $SD = 0.63$). These findings echo Dayaday's (2018) and underscore the central role of faculty support in student success. UB's emphasis on collaborative learning – through a strong sense of community (Alumni: $M = 3.32$, $SD = 0.69$; Faculty: $M = 3.58$, $SD = 0.62$) and group study activities (Alumni: $M = 3.17$, $SD = 0.80$; Faculty: $M = 3.63$, $SD = 0.65$) – reinforces Tulud et al.'s (2023) conclusion that peer-led strategies can alleviate stress and boost retention.

Conversely, alumni report comparatively lower

satisfaction with resource availability. Mean ratings dip below 3.00 for library and learning resources ($M = 2.76$, $SD = 0.66$), essential textbooks ($M = 2.83$, $SD = 0.67$), and online materials ($M = 2.98$, $SD = 0.79$), even as faculty maintain “Highly Effective” that these resources are adequate ($M \approx 3.5$). This gap suggests an audit and expansion of both physical and digital collections. This alumni–faculty gap mirrors earlier findings that graduates tend to appraise resource sufficiency more critically because their judgments are anchored to the immediacy of PRC blueprints and the “last-mile” demands of licensure preparation (Faltado, 2014; Ludayen & Tique, 2021). It also aligns with local evidence of occasional curriculum–exam misalignment that heightens dependence on current, PRC-patterned materials (Anague & Fernandez, 2022). From a quality-assurance perspective, this pattern flags an inputs issue (currency and accessibility of holdings) rather than a purely instructional process gap and thus supports a targeted audit/refresh of physical and digital collections, extended post-graduation access, simulator resources, and PRC-aligned item banks – moves that are also consonant with PACUCOA standards on Library/Resources and Instruction (PACUCOA, n.d.).

A similar disparity appears in schedule flexibility: alumni rate self-study time as Effective ($M = 2.93$, $SD = 0.72$), whereas faculty rate it Highly Effective ($M = 3.45$, $SD = 0.68$). Prior research links congested calendars and limited spacing with higher anxiety and weaker retention during board preparation, underscoring the value of protected review windows and no-conflict timetables (Tulud et al., 2023). In practice, aligning academic calendars to guarantee 12–15 hours/week of self-study in the final 8–12 weeks, coupled with a Mock→Debrief→Remediate→Re-test cycle, is consistent with evidence that explicit practice and immediate feedback raise preparedness and confidence (Dayaday, 2018; Tulud et al., 2023). These actions also map to PACUCOA expectations for sufficiency and supportiveness of instructional schedules within Student Services and Instruction domains (PACUCOA, n.d.).

Perhaps most telling is the divergence between alumni and faculty members’ confidence in exam success. Alumni rate their own confidence at a modest “Effective” ($M = 2.93$, $SD = 0.88$), whereas faculty

remain optimistic at “Highly Effective” ($M = 3.42$, $SD = 0.64$). Targeted interventions – stress-management workshops, mock-exam debriefs, and confidence-building sessions – could help close this emotional gap. Viewed through the Input-Process-Output framework and Total Quality Management principles, these findings reveal robust foundations in faculty expertise and collaborative processes, yet highlight actionable improvements in resource distribution, scheduling, and student confidence.

Alumni–faculty perception along the five preparation domains

To explore perceptual gaps more formally, Mann–Whitney U contrasts between alumni and faculty ratings across five preparation domains. Because Kolmogorov–Smirnov tests indicated non-normal distributions, the researchers report medians and IQRs as primary descriptors and use Mann–Whitney U tests on the item response scores to compare alumni and faculty perceptions, with means (SDs) provided parenthetically for context.

For General Preparation, alumni median rating was 3.00 (IQR = 0.60) versus faculty’s 3.60 (IQR = 0.60), $U = 4.18$, $p < .001$, suggesting that while faculty believe the curriculum thoroughly covers exam content, alumni perceive room for deeper alignment – echoing Anague and Fernandez’s (2022) finding of occasional curricular misalignment. In Faculty Support, both groups felt positively (medians 3.50 vs. 3.75), yet the difference ($U = 2.47$, $p = .014$) underscores alumni’s desire for even more accessible mentorship, a theme that Dayaday (2018) highlights as critical for reducing exam-related anxiety.

The largest perceptual gap emerged in Resource Availability, where alumni median = 3.00 (IQR = 0.75) contrasted with faculty’s 3.50 (IQR = 0.75), $U = 6.11$, $p < .001$ – a divergence consistent with Faltado’s (2014) observation that alumni often feel institutional resources fall short of faculty expectations. Similarly, for Student Engagement and Feedback, medians of 3.00 versus 3.75 ($U = 4.18$, $p < .001$) reflect Tulud et al.’s (2023) call for more interactive, student-centered processes. Finally, Exam Preparedness and Confidence yielded medians of 3.00 for alumni and 3.67 for faculty ($U = 3.92$, $p < .001$), illustrating that strong institutional inputs and processes

have not yet fully translated into student self-assurance – underscoring the need for targeted confidence-building interventions.

School-level uniformity along the five preparation domains

To see whether experiences vary by academic unit, the domains were analyzed by school. The researchers summarized alumni perceptions by school across five preparation domains, reported as medians and IQRs due to non-normal distributions, with Kruskal–Wallis H tests assessing between-school differences.

Alumni ratings cluster around and between-school differences are not statistically significant, indicating broadly similar experiences. The widest dispersion appears in Resource Availability, where some units rate access more modestly. Notably, in programs such as Dentistry and SNS, alumni register lower resource perceptions even as first-time pass rates remain high, suggesting that strong processes - e.g., authentic simulations, intensive critique, and timely rationalization - can buffer input constraints. Conversely, where alumni signal both thinner resources and less confidence (e.g., Accountancy), outcomes are more volatile, underscoring the interaction of inputs (resources) and processes (delivery/feedback) in shaping results. The parallel faculty ratings by school used the same non-parametric approach (medians/IQRs; Kruskal–Wallis H).

Faculty ratings are consistently high and uniform across schools, but alumni rate resources, engagement, and preparedness lower—revealing a clear perception gap. This points to the need for triangulating faculty views with alumni experience and outcomes, maintaining effective practices while prioritizing resource audits and access improvements.

Statistical results confirm significant gaps: alumni report lower resource availability, engagement, and exam confidence, suggesting the need for updated materials, more interactive learning (e.g., simulations, peer-led sessions), and added affective support (e.g., reflection and resilience training).

Across schools, faculty consistently perceive strong effectiveness, especially in support and preparation,

while alumni responses vary—highlighting weaker areas in Accountancy (general prep, confidence) and Dentistry (resources), but stronger perceptions in Criminology and Nursing. These perception patterns align with outcomes: programs with high passing rates (e.g., MedTech, Nursing, Criminology) also receive strong ratings, while programs with low or volatile results (e.g., Accountancy, Engineering fields) correspond to lower alumni perceptions—especially in resources, engagement, and confidence. Repeater performance further reflects gaps in support and access, though targeted interventions (e.g., simulations, remediation) can significantly improve results.

Qualitative feedback reinforces these findings. Strengths include dedicated faculty, updated materials, simulations, and structured alignment with licensure standards. Weaknesses center on compressed schedules, inconsistent resources, misalignment with exam content, and limited feedback mechanisms, alongside some counterproductive student behaviors.

Both alumni and faculty converge on key improvements:

- Update and diversify PRC-aligned materials
- Expand mock exams with structured feedback cycles
- Improve scheduling and protect review time
- Strengthen test-taking skills and metacognition
- Enhance wellness and mentoring support
- Upgrade facilities and resource access

CONCLUSION AND RECOMMENDATIONS

The mixed-methods analysis reveals that UB's licensure-exam preparation framework rests on solid foundations – particularly in faculty expertise, collaborative learning, and structured simulations – yet also exhibits perceptual gaps between providers and recipients of these services. Descriptively, both alumni and faculty rate preparation strategies positively, with faculty consistently more optimistic across all domains. Nonparametric comparisons (Mann–Whitney U) confirmed these significant faculty–alumni differences in general preparation, faculty support, resource availability, student engagement, and exam confidence (all $p < .01$).

Qualitative feedback further highlights strengths in dedicated mentoring and experiential tips, alongside actionable areas for improvement: updating materials, optimizing schedules, enhancing test-taking strategy training, and bolstering wellness support. Under the Input–Process–Output and TQM frameworks, these findings underscore the need for continuous calibration of inputs (resources, curriculum), processes (mock exams, feedback loops), and outputs (student confidence, pass rates) to sustain and elevate exam outcomes.

Recommendations

1. It is recommended that all faculty members teaching major subjects embed strategic instruction and feedback loops. These can be done by organizing and/or attending periodic focused workshops each year on test-taking strategies and item analysis; providing structured debriefs after every mock exam; encouraging cross-departmental peer review of assessment items to ensure consistency and alignment; and collecting ongoing student feedback through brief “exit surveys” after each review session, using that input to refine teaching methods in real time.
2. It is suggested that affective support be strengthened by integrating stress-management and mindfulness modules, which may be delivered by counseling staff, into the licensure-prep curriculum; formalizing peer-mentoring and alumni-panel events each semester; and providing dedicated review spaces (extended-hours library access and simulator labs) with clear booking systems. This dual focus on emotional resilience and logistical support will bolster students’ confidence and sustained engagement.
3. Promote continuous improvement and scalability by having representatives from school leadership, faculty, and student services review quantitative outcomes (pass rates, confidence scores) alongside qualitative feedback. Also, develop best-practice toolkits from successful program implementations to enable replication in other academic disciplines. This cycle of data-driven review and toolkit dissemination will foster a culture of continuous improvement and academic excellence.
4. The QAO should continuously document the PRC board results through the UB ACCESS system

(including the list of examinees with their ratings) for monitoring and share them with all concerned programs. The QAO will further monitor the periodic reports due from the review coordinators for the preparation of the consolidated institutional report highlighting the gains and opportunities for further improvement.

Acknowledgment

The authors gratefully acknowledge the invaluable contributions of the Deans, Review Coordinators, and Alumni Coordinators of the thirteen board programs at the University of Baguio for facilitating the participation of one hundred seventy-seven (177) faculty respondents. They likewise extend their sincere appreciation to the forty-one (41) alumni who generously shared their time and provided candid feedback. This research would not have been possible without the dedicated support of the UB RIECO team. Finally, the authors express their profound gratitude to the University of Baguio for the opportunity to undertake this research and for its publication in the UBMJRJ.

Declaration of Generative AI use in the Writing Process

During the preparation of this work, the authors utilized ChatGPT and Perplexity to assist the researchers in organizing ideas and refining sentence construction for clarity and coherence during the writing process. These tools were not used for data generation or analysis but solely for improving the structure and readability of the report. The content generated by the tools was carefully reviewed, edited, and validated by the authors. The authors accept full responsibility for the accuracy, originality, and integrity of the final manuscript.

References

- Abdulmajid, A. (2024). Factors affecting the passing rate of licensure examination for teachers at Sulu State College. *Journal of Education and Academic Settings*, 1, 1-13. https://www.researchgate.net/publication/380379029_Factors_affecting_the_passing_rate_of_licensure_examination_for_teachers_at_Sulu_State_College
- Adesope, O. O., Trevisan, D. A., & Sundararajan, N. (2017). Rethinking the use of tests: A meta-analysis of practice testing. *Review of Educational Research*, 87(3), 659–701. <https://doi.org/10.3102/0034654316689306>
- Aithal, A. and Aithal, S. (2020). Development and validation of survey questionnaire & experimental data – A systematical review-based statistical approach. *International Journal of Management, Technology, and Social Sciences*, 5(2). 233-251. <https://mpira.ub.uni-muenchen.de/103996/>
- Anague, K. S., & Fernandez, R. D. (2022). Academic and physical therapy licensure exam performance: An evaluation. *UB Research Journal*, 45(1). <https://rdc.ubaguio.edu/academic-and-physical-therapy-licensure-exam-performance-an->

- p>evaluation/
- APA. (n.d.). *Input-process-output model (IPO model)*. American Psychology Association. <https://dictionary.apa.org/input-process-output-model>
- Aplaon, Z. & Hernandez, J. (2024). Analysis of licensure examination performance of bachelor of secondary education in mathematics: Basis for a comprehensive review program. *Sorsogon Multidisciplinary Research Journal*, 1(2). https://www.researchgate.net/publication/380323458_Analysis_of_Licensure_Examination_Performance_of_Bachelor_of_Secondary_Education_in_Mathematics_Basis_for_a_Comprehensive_Review_Program#:~:text=While%20there%20are%20various%20parameters,quality%20of%20education%20graduates%20acquire.
- Cepeda, N. J., Pashler, H., Vul, E., Wixted, J. T., & Rohrer, D. (2006). Distributed practice in verbal recall tasks: A review and quantitative synthesis. *Psychological Bulletin*, 132(3), 354–380. <https://pubmed.ncbi.nlm.nih.gov/16719566/>
- Commission on Higher Education. (2012). *CMO No. 46, s. 2012: Policy-standard to enhance quality assurance (QA) in Philippine higher education through an outcomes-based and typology-based QA*. <https://www.pacu.org.ph/wordpress/wp-content/uploads/2017/03/CMO-No.46-s2012.pdf>
- Chizmar, J. (2014). Total quality management (TQM) of teaching and learning. *The Journal of Economic Education*, 25(2), 179–190. https://www.researchgate.net/publication/271945571_Total_Quality_Management_TQM_of_Teaching_and_Learning
- Dayaday, M (2018). Factors affecting the performance in the board examination of Electronic Engineering – University of Southern Mindanao graduates. *International Journal of Current Research*, 10(9), 73710-73715. https://www.researchgate.net/publication/372890304_Factors_Affecting_Board_Examination
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4–58. <https://doi.org/10.1177/1529100612453266>
- Faltado, R.E. (2014). Correlates of performance in licensure examination of selected public and private teacher education institutions. *International Journal of Education and Research*, 2(8). <https://www.ijern.com/journal/2014/August-2014/16.pdf>
- Johnson, J. H. (1993). Total quality management in education. *OSSC Bulletin*, 36(6). <https://eric.ed.gov/?id=ED354611>
- Kulik, C.-L. C., Kulik, J. A., & Bangert-Drowns, R. L. (1990). Effectiveness of mastery learning programs: A meta-analysis. *Review of Educational Research*, 60(2). <https://doi.org/10.3102/00346543060002265>
- Lud-ayen, C. G. K., & Tique, R. C. (2021). UBSTE and UBSCJPS best practices in preparation for the board examination. *UB Research Journal*, 44(1). <https://rdc.ubaguio.edu/ubste-and-ubscjps-best-practices-in-preparation-for-the-board-examination/>
- McGaghie, W. C., Issenberg, S. B., Cohen, E. R., Barsuk, J. H., & Wayne, D. B. (2011). Does simulation-based medical education with deliberate practice yield better results than traditional clinical education? A meta-analytic comparative review of the evidence. *Academic Medicine*, 86(6), 706–711. <https://doi.org/10.1097/ACM.0b013e318217e119>
- National Council of State Boards of Nursing. (2025). *NCLEX pass rates*. <https://www.ncsbn.org/exams/exam-statistics-and-publications/nclex-pass-rates.page>
- PACUCOA. (n.d.-a). *About accreditation*. Philippine Association of Colleges and Universities Commission on Accreditation. <https://www.pacucoa.com/copy-of-about>
- PACUCOA. (n.d.-b). *Accreditation process*. Philippine Association of Colleges and Universities Commission on Accreditation. <https://www.pacucoa.com/copy-of-accredited-programs>
- Saong, M. M., & Saong, J. E. (2019). Predictors of the performance of University of Baguio graduates in the electronics engineering licensure examination. *UB Research Journal*, 42(1). <https://rdc.ubaguio.edu/predictors-of-the-performance-of-university-of-baguio-graduates-in-the-electronics-engineering-licensure-examination/>
- Tan, C. (2016). *Impact of review on the performance of graduates in the licensure examination for teachers, 2012-2014*. e-Proceedings of the 4th Global Summit on Education 2016. https://www.researchgate.net/publication/353732748_Impact_of_Review_on_the_Performance_of_Graduates_in_the_Licensure_Examination_for_Teachers_2012-2014
- Tulud, D. M., Verona, M. O., & Naringahon, R. A. (2023). Perceived factors on the performance of graduates in the licensure examination. *Asia Pacific Journal of Social and Behavioral Sciences*, 21, 15-28. <https://apjsbs.buksu.edu.ph/index.php?journal=APJSBS&page=article&op=view&path%5B%5D=333>
- UNESCO (2015). *SDG4-Education 2030, Incheon Declaration (ID) and Framework for Action*. For the Implementation of Sustainable Development Goal 4, Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All, ED-2016/WS/28. <https://www.scirp.org/reference/referencespapers?referenceid=2156460>
- United States Medical Licensing Examination. (2025). *Performance data (2024 performance data; reported through January 24, 2025)*. <https://www.usmle.org/performance-data>
- University of Baguio. (2023, September 7). *About us - University of Baguio*. <https://ubaguio.edu/about/>
- Valencia, A. T. (2024). *Inputs to development plan of a higher education institution* (pp. 3–4). International Institute of Academic Research. <https://iiari.org/wp-content/uploads/trp.v4.2.icmiar24.2204.pdf>
- Vornberg, J. A. (2013). Systems theory. In B. J. Irby, G. Brown, R. Lara-Alecio, & S. Jackson (Eds.), *The handbook of educational theories* (pp. 805–813). Information Age Publishing. <https://psycnet.apa.org/record/2013-11995-06>
- Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.03087>