PHILIPPINE ACCREDITING ASSOCIATION OF SCHOOLS, COLLEGES AND UNIVERSITIES, INC.

Teaching-Learning Excellence in Accredited Engineering Programs (February-May 2025)

An Analysis of Teaching-Learning Area (Standards 11, 12, and 13)

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July 2025

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Executive Summary

This report presents a synthesis of teaching-learning practices across PAASCU-accredited engineering programs of five institutions. The names of the schools included in the study were deliberately anonymized to uphold confidentiality and ensure impartiality in the analysis. PAASCU adopts this approach to foster a safe space for honest reflection and constructive dialogue, allowing institutions to learn from shared experiences without fear of judgment or reputational risk.

Drawing from the survey data (Area 4: Standards 11–13), the analysis highlights sector-wide strengths, recurring challenges, and actionable opportunities for continuous improvement. As a form of research, this analysis provides valuable insights that contribute to PAASCU's ongoing efforts to elevate educational quality and foster a culture of evidence-based improvement among its member institutions.

The names of the institutions have been anonymized to preserve the trust-based, voluntary relationship between PAASCU and its member schools, and to prevent unintended reputational consequences that could arise from public comparisons or scrutiny within an academic study. This approach is also rooted in the principle that PAASCU's accreditation is intended to foster continuous improvement through voluntary participation, not league table competition, making it important to respect the confidential and collaborative spirit of the process. Additionally, aligning with research ethics, anonymity is maintained to protect institutional privacy and uphold the commitment of both PAASCU and the researcher to ethical standards in educational research.

Across all institutions, there is clear evidence of commitment to **Outcomes-Based Education (OBE)**. Curricular programs are generally well-aligned with Program Educational Objectives (PEOs), Course Learning Outcomes (CLOs), and Student Outcomes (SOs), with strong examples from EIEC02 and NMAF03. Institutions are also integrating technopreneurship, service learning, and global exposure into their curricula, while digital platforms like Canvas, eLearn, myClass, and iCARE support flexible, student-centered instruction.

Pedagogical approaches vary but consistently reflect learner-centered strategies, and flipped classrooms, project-based learning, and reflective activities are common. Institutional models like FIIPP (SBAS04) and MILES (NMAF03) demonstrate innovation in faculty development and personalized learning. YMAX05's use of the Ignatian Pedagogical Paradigm adds a values-based dimension to instruction.

Despite these strengths, several challenges persist:

- **Stakeholder feedback** is often under-documented, limiting transparency and CQI effectiveness.
- **Assessment systems** show inconsistencies in rubric design, grading criteria, and alignment with CLOs and SOs.
- **Syllabus implementation**, especially in lab courses, lacks coherence and rigor in some cases.

- **Graduate feedback and tracer studies** are not consistently integrated into curriculum review.
- **Elective tracks** in some programs remain insufficiently defined, complicating student advising.

Statistical comparisons reveal that EIEC02 and NMAF03 consistently perform well across all Area 4 standards, while YMAX05 and SBAS04 show lower averages in assessment, indicating areas for targeted support.

To address these gaps, the report proposes interventions for both PAASCU and its member institutions, including:

- Standardizing assessment audits and rubric alignment
- Enhancing syllabus design through peer review and digital management
- Institutionalizing real-time student feedback systems
- Leveraging graduate data for curriculum responsiveness

Overall, PAASCU-accredited engineering programs are on a strong trajectory toward excellence. Strengthening documentation, assessment coherence, and stakeholder engagement will further elevate the sector's capacity to deliver globally relevant, outcomes-driven education.

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Introduction

In the 21st century, engineering education calls for far more than just technical expertise. It's about building adaptable, student-focused, and results-oriented programs that actually prepare graduates for today's fast-changing global job market.

This report examines key findings related to Teaching-Learning (Area 4) across five engineering institutions— NMAF03, YMAX05, SBAS04, YPNA01, and EIEC02—drawing from their respective accreditation documents.

The primary goal is to analyze how these universities conceptualize, implement, and evaluate their academic programs. Are students' needs truly prioritized in curricular choices? Is Outcomes-Based Education (OBE) genuinely integrated, or just superficially adopted without real alignment? And do their teaching philosophies and pedagogical strategies genuinely respond to changing educational standards and global quality assurance trends?

This comparison also highlights where these institutions excel, where they continue to encounter common issues, how their performance in Area 4 compares statistically, and some practical interventions for both the PAASCU and the institutions to address the observed gaps. Ultimately, it reflects on their overall readiness and ability to adapt to ongoing changes in engineering education.

Acronyms and Definitions

To support clarity and accessibility for all readers, including new stakeholders, accreditors-in-training, and external partners, this section defines the acronyms and key terms used throughout the report. These definitions reflect both PAASCU's internal language and sectoral terminology relevant to teaching-learning practices in engineering education.

Acronym/Term	Definition
Accreditation Instrument	a standardized tool used by accreditors to evaluate institutional compliance with PAASCU standards
Accreditor	a trained evaluator who reviews institutional documentation and practices against PAASCU standards
Area 4	refers to the "Teaching-Learning" component in PAASCU's accreditation framework, covering curriculum, instruction, and assessment
Assessment Methods	sub-area of Area 4 – tools and processes used to evaluate student learning outcomes, including formative and summative assessments
Benchmarking	a process of comparing institutional practices and performance to identify strengths, gaps, and opportunities for improvement
CLO	Course Learning Outcomes – specific competencies students are expected to achieve by the end of a course.
CQI	Continuous Quality Improvement – ongoing efforts to enhance teaching, learning, and assessment practices
Curricular Programs	sub-area of Area 4 – structured academic offerings within a degree program, including course content, sequencing, and learning outcomes
Continuous Improvement	Ongoing efforts to enhance quality, effectiveness, and alignment with standards
Evidence-Based Documentation	supporting materials that validate institutional claims, such as syllabi, assessment tools, and feedback reports
ESC 23.1	a YMAX05 course funded by Erasmus+ GECKO Project that focuses on enhancing students' communication, teamwork, and innovation skills
FIIPP	Faculty Improvement of Instruction and Performance Program – a SBAS04 initiative that monitors and supports teaching effectiveness based on student evaluations
iCARE	iTamaraw Center for Academic Resources and Enrichment – a student support center at NMAF03 that offers academic tools and guidance to enhance learning experiences
Instructional Delivery	The methods and strategies used by faculty to teach content and engage learners

LMS	Learning Management System – a digital platform used to deliver, track, and manage educational content and student progress
Learning Outcomes	Specific competencies or skills students are expected to achieve by the end of a course or program
MILES	Mastery-based Individualized Learning Enhancement System – a personalized learning initiative by NMAF03 designed to foster mastery through tailored instruction
OBE	Outcomes-Based Education – an approach that focuses on clearly defined learning outcomes and aligning teaching and assessment to achieve them
PEO	Program Educational Objectives – broad goals that graduates are expected to attain a few years after graduation
Rating Scale (1.00–5.00)	PAASCU's standard scoring system for evaluating compliance, with 5.00 as the highest rating
Resurvey Team	a group of accreditors assigned to conduct a follow-up visit to reassess a program or institution previously accredited, typically after a set number of years
Sectoral	pertaining to a specific academic discipline or group (e.g., engineering sector)
Self-Survey	an internal institutional process of evaluating its own compliance with accreditation standards prior to a formal visit
SO	Student Outcomes – measurable skills and knowledge students should acquire by graduation.
Stakeholder Feedback	Input from students, faculty, alumni, and industry partners is used to inform program improvements
Statistical Summary	a quantitative overview of ratings or scores, used to highlight trends and comparative performance
Teaching-Learning Methods	sub-area of Area 4 – structured approaches, strategies, and techniques (such as lecture, collaborative, etc.) employed by faculty to facilitate student learning
Technopreneurship	a strategic integration of technology and entrepreneurship within academic programs, particularly in engineering and ICT fields
Thematic Analysis	a qualitative method for identifying patterns and themes across data sets, often used in accreditation synthesis
Canvas	a cloud-based learning management system (LMS) used by institutions to deliver courses, manage content, assess student performance, and support outcomes-based education
eLearn	a customizable LMS platform adopted by Philippine higher education institutions to facilitate online instruction, assessments, and continuous quality improvement
myClass	An institutional LMS developed by Mapúa University to support digital instruction, student tracking, and OBE-aligned learning activities

Faculty Pedagogy	The collective teaching philosophies, strategies, and methods employed by faculty to facilitate student learning, aligned with program outcomes, institutional goals, and quality assurance standards

Analysis of Teaching-Learning

This cross-institutional analysis highlights the shared commitment among the five engineering institutions to align teaching and learning with both student needs and outcomes-based education (OBE), as well as contemporary competencies. All institutions demonstrate efforts toward curricular mapping, systematically aligning Program Educational Objectives (PEOs) and Course Learning Outcomes (CLOs)—with notable examples at EIEC02, YMAX05, and NMAF03. Curricula incorporate technopreneurship, service learning, and elements of international exposure, such as ESC 23.1 at YMAX05, which together foster employability and global readiness. Additionally, digital platforms, including Canvas, eLearn, and myClass, offer a range of learning preferences and provide enhanced access to instructional resources.

Faculty pedagogy across these institutions reflects significant academic freedom and creativity in instructional approach. YMAX05, for instance, applies the Jesuit-inspired Ignatian Pedagogical Paradigm to encourage ethical development and social engagement. NMAF03 and SBAS04 promote individualized and flipped learning models. Across the board, learner-centered strategies, such as project-based tasks, peer-led activities, and opportunities for reflective learning, are prevalent, supporting student agency and deeper understanding.

Regarding curriculum responsiveness and faculty development, EIEC02 and YMAX05 particularly stand out for integrating graduate feedback and board examination outcomes into program revisions. SBAS04 and YPNA01 have established foundational tools, such as the OBE Manual and CQI policies; however, challenges persist with consistent implementation and documentation. Faculty development initiatives are present at most campuses, yet systematic mechanisms for evaluating their long-term effectiveness remain limited. In sum, these patterns suggest a proactive, albeit uneven, landscape of educational innovation and instructional reform across the institutions.

Best Practices

Across the five institutions reviewed, several strengths in teaching and learning practices emerged as consistent themes. Notably, all institutions demonstrate a **strong commitment to outcomes-based education (OBE)**, rigorously aligning Program Educational Objectives, Course Learning Outcomes, and Student Outcomes to ensure that students acquire measurable competencies. This approach fosters curricular coherence, transparency, and ongoing quality assurance.

Additionally, the **widespread adoption of learning management systems** such as Canvas, eLearn, myClass, and iCARE has greatly enhanced accessibility. These platforms enable streamlined communication, centralized access to syllabi and course materials, and flexible assessment methods, supporting blended learning environments that extend beyond traditional classrooms.

Innovation in pedagogy is another recurring strength. The reviewed institutions employ a range of student-centered strategies, including flipped classrooms, service learning, project-based assignments, simulations, and microteaching. These approaches promote critical thinking, creativity, and collaboration, moving away from passive, instructor-led models toward active student engagement.

Furthermore, **robust engagement with industry stakeholders and alumni in curriculum development** ensures that academic programs remain relevant and aligned with evolving professional standards. Advisory councils, alumni input, and feedback from professional boards all contribute to enhancing graduate employability.

Lastly, the institutions **prioritize faculty development through structured programs** such as FIIPP (SBAS04) and YNAlex Academy (YPNA01). These initiatives provide ongoing training in pedagogy and technology integration, as well as performance reviews informed by student evaluations. Collectively, these efforts underscore a commitment to continuous instructional improvement and academic excellence.

Common Challenges

While each institution demonstrates a clear commitment to advancing the quality of its engineering education, a set of recurring challenges remains evident in recent evaluations.

One persistent issue concerns that **stakeholder feedback documentation is often incomplete**. Although engagement activities occur, documentation is frequently inadequate, with records such as meeting minutes and attendance logs missing. Furthermore, mechanisms to translate stakeholder input into actionable curricular changes are not always formalized or implemented effectively. This gap hinders transparency and limits opportunities for ongoing improvement.

Assessment systems present another area of concern. Practices across institutions do not consistently align with established learning outcomes. Essential elements—such as detailed rubrics, grading breakdowns, and internship evaluation criteria—are frequently inconsistent or absent. Additionally, student feedback mechanisms are either insufficiently developed or introduced too late in the instructional process to inform timely adjustments.

Syllabus implementation also reveals inconsistencies, notably in laboratory-based courses. Some syllabi fail to establish clear connections between course learning outcomes, teaching strategies, and assessments. Others lack time allocation guides or omit updated academic references, weakening the rigor of course delivery.

Graduate feedback and tracer studies, while conducted in some cases, are not systematically integrated into curriculum review processes. The collected data often lack program-specific details and are seldom used to inform curricular revisions that address evolving employment trends or graduate experiences. Finally, **certain elective tracks—**particularly at SBAS04**—are insufficiently defined or overlap with other offerings**, resulting in student confusion and complicating academic advising.

Addressing these concerns through improved documentation, structured assessment systems, clearer syllabus design, and a more strategic use of graduate data would enable institutions to provide engineering education that is more responsive, effective, and centered on the needs of students and industry.

Area 4 Statistical Summary

Institution	Curricular Programs	Teaching-Learning Methods	Assessment Methods	Area 4 Average
NMAF03	4.17 (RT) / 5.00 (SS)	4.00 / 4.83	4.00 / 5.00	**4.06 / 4.94**
YMAX05	3.83 / 3.83	3.33 / 3.83	2.00 / 3.40	**3.05 / 3.69**
SBAS04	3.50 / 4.50	3.33 / 4.50	2.80 / 3.60	**3.21 / 4.20**
YPNA01	3.50 / 4.67	3.50 / 4.67	3.00 / 4.00	**3.33 / 4.45**
EIEC02	4.33 / 5.00	4.67 / 5.00	4.00 / 4.80	**4.33 / 4.93**

Legend: RT = Resurvey Team | SS = Self-Survey

Observation: Institutions like EIEC02 and NMAF03 consistently perform well in both internal and external evaluations, indicating strong implementation fidelity and responsiveness.

Practicable Interventions for Common Challenges in Engineering Programs

Based on the identified challenges in assessment systems, syllabus implementation, and student feedback mechanisms across PAASCU-accredited engineering programs, here are some proposed actionable interventions for both PAASCU as an accrediting body and the schools themselves:

1. Assessment System Alignment

For PAASCU:

- Require institutions to submit evidence of assessment alignment to outcomes during accreditation reviews, such as annotated rubrics and mapping matrices.

For Schools:

- Institute a program-wide assessment audit to ensure rubrics, grading, and evaluation tools are explicitly mapped to CLOs and SOs in all courses, not just capstone or terminal projects.
- Provide faculty development sessions on constructing robust, outcome-linked assessment rubrics, including examples of criterion-referenced assessment.
- Implement peer review of assessment tools, wherein instructors review each other's rubrics for clarity and alignment, fostering consistency and quality.

Expanded Impact: Ensuring assessments directly reflect outcomes improves transparency for students, enables more precise measurement of learning, and allows targeted improvement based on diagnostic data.

2. Consistent and Comprehensive Syllabus Implementation

For PAASCU:

- During evaluations, require random sampling of syllabi for both lecture and laboratory courses, with emphasis on reviewing syllabus coherence and documentation of learning activities.

For Schools:

- Adopt a digital syllabus management system (integrated into the existing LMS) to ensure real-time review, continuous updating, and uniformity.
- Schedule regular syllabus peer reviews within departments to identify and address gaps (e.g., missing time allocation, outdated references, misaligned strategies).
- Encourage co-design of syllabi among faculty teaching the same course (e.g., parallel sections) for consistency and improved rigor.

Expanded Impact: Strong, well-implemented syllabi set clear expectations, help maintain standards across sections and instructors, and facilitate student understanding of learning pathways.

3. Enhancement of Student Feedback Mechanisms

For PAASCU:

- Recommend standards on feedback cycle timing (e.g., mid-semester and end-of-semester evaluations) to ensure feedback is actionable and can inform instructional adjustments promptly.
- Require schools to document specific follow-through actions taken based on feedback, and monitor the efficacy of such interventions during reaccreditation visits.

For Schools:

- Implement a formative feedback system via the LMS or other tools that allows students to submit anonymous input on teaching and assessment practices in real time.

- Ensure that feedback results are reviewed by faculty within one week and that necessary changes (even small ones) are communicated back to students, fostering a culture of responsiveness.
- Use feedback data to recognize and develop best-practice teaching across the college, sharing successful faculty interventions school-wide.

Expanded Impact: Timely, actionable feedback increases student engagement, enables rapid instructional adjustment, and supports a cycle of continuous improvement.

4. Strategic Use of Graduate Data

For PAASCU:

- Make data-driven accreditation a standard, requiring schools to show evidence of graduate outcomes data (employment rates, industry feedback, alumni career trajectories), informing curricular revision.

For Schools:

- Collect, analyze, and disseminate alum feedback and industry/employer surveys, integrating results into curricular planning and program review.
- Tie graduate success stories and skill gaps directly to updates in course content and teaching methods, ensuring programs remain responsive to evolving industry needs.
- Expanded Impact: Leveraging graduate data connects educational programs to real-world outcomes, guiding curricular updates that keep engineering education relevant and valued.

By strengthening standards, building faculty capacity, leveraging technology, and institutionalizing data-driven decision-making, both PAASCU and its accredited institutions can effectively address the common challenges in engineering education. These interventions promote robust teaching and learning practices that are adaptable, measurable, and responsive to student and industry needs.

Conclusion

The evaluation of teaching and learning practices across accredited Engineering programs of five institutions— NMAF03, YMAX05, SBAS04, YPNA01, and EIEC02—highlights a sector that is both committed to continuous improvement and conscious of persistent gaps that must be addressed to remain globally competitive.

The analysis reveals that all institutions have effectively adopted Outcomes-Based Education (OBE) principles, aligning Program Educational Objectives (PEOs), Course Learning Outcomes (CLOs), and Student Outcomes (SOs) with their respective curricula. This alignment ensures curricular coherence, enhances transparency, and provides measurable indicators of student achievement. Innovative institutional programs like FIIPP (at SBAS04) and MILES (at

NMAF03) further reflect the sector's adaptability in developing models for faculty development and personalized learning.

Statistically, the data show that EIEC02 and NMAF03 consistently perform at the top range across Curricular Programs, Teaching Methods, and Assessment categories, demonstrating robust systems for curriculum planning, implementation, and evaluation. On the other hand, YMAX05 and SBAS04 report lower averages in assessment areas, indicating opportunities for targeted intervention in learning assessment frameworks and evidence gathering.

From the synthesis of best practices, several strengths consistently emerge:

- Strong institutional commitment to OBE and CQI, ensuring that outcomes are not only stated but systematically monitored and improved.
- Use of tailored internal quality assurance systems (e.g., FIIPP, MILES) that adapt to institutional culture while still meeting external accreditation standards.
- Faculty engagement in curriculum mapping and review to maintain industry relevance.

However, common challenges persist. The most notable is the incomplete documentation of stakeholder engagement activities. While consultations occur, the lack of adequate records—such as attendance logs, formal minutes, and evidence of how feedback is translated into actionable changes—undermines transparency and limits the credibility of CQI processes. This shortfall impacts both internal reviews and external accreditation audits. Additionally, there is an inconsistency in implementing formal mechanisms for closing the feedback loop from stakeholders to curriculum revisions.

Addressing these gaps requires targeted interventions, including:

- Standardizing stakeholder consultations through templates, digital recording, and centralized documentation systems.
- Institutionalizing formal feedback-to-action protocols to ensure stakeholder input directly informs revisions in curriculum, teaching, and assessment practices.
- Enhancing faculty capability in assessment design and data-driven improvement, particularly in institutions with lower performance scores in the assessment category.
- Leveraging high-performing institutions' models (e.g., CQI cycles at EIEC02, MILES at NMAF03) to establish cross-institutional knowledge-sharing initiatives under PAASCU's facilitation.

In conclusion, the collective readiness of PAASCU-accredited engineering programs to meet 21st-century demands is evident in their solid foundational systems, innovative instructional practices, and unwavering commitment to Outcomes-Based Education. However, despite these strengths, several areas still require focused attention. Specifically, the need for consistent evidence-based documentation, more robust mechanisms for translating stakeholder feedback into programmatic change, and improved assessment systems remains critical.

By addressing these gaps, institutions will not only strengthen their accreditation outcomes but also elevate the overall quality of engineering education. More importantly, these findings offer

a strategic pathway for shaping national standards, ensuring that Philippine engineering graduates are not just competent but globally competitive, future-ready, and equipped to lead in a rapidly evolving technological landscape.

References

Commission on Higher Education. (2012). *Policies and standards for Bachelor of Science in Engineering programs* (CMO No. 37, Series of 2012). CHED. Retrieved from http://www.ijarp.org/published-research-papers/dec2018/Engineering-Education-In-The-Philippines.pdf

Institute of Integrated Electrical Engineers of the Philippines. (n.d.). *OBE model for engineering education*. Retrieved September 29, 2025, from https://iiee.org.ph:89/uploads/files/952.pdf

Mindanao State University – Iligan Institute of Technology. (n.d.). *Outcomes-Based Education framework*. Retrieved September 29, 2025, from https://www.msuiit.edu.ph/academics/colleges/coe/programs/obe/index.php

Microsoft Copilot. (2025, July). *Assistance with synthesis, editing, and APA formatting*. AI session. https://copilot.microsoft.com

Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). (2025). *Accreditation report – Area 4: Teaching-Learning: YPNA01*. Survey Visit conducted March 2025. [Unpublished internal document].

Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). (2025). *Accreditation report – Area 4: Teaching-Learning: EIEC02*. Survey Visit conducted May 2025. [Unpublished internal document].

Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). (2025). *Accreditation report – Area 4: Teaching-Learning: NMAF03.* Survey Visit conducted March 2025. [Unpublished internal document].

Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). (2025). *Accreditation report – Area 4: Teaching-Learning: SBAS04*. Survey Visit conducted May 2025. [Unpublished internal document].

Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). (2025). *Accreditation report – Area 4: Teaching-Learning: YMAX05*. Survey Visit conducted April 2025. [Unpublished internal document].