OBE Implementation Across Seven Domains in Philippine Engineering Programmes

Joven B. Jacinto

Graduate Department, Saint Ferdinand College

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ABSTRACT

Outcomes-based education (OBE) has been a mandatory quality-assurance framework for Philippine engineering programmes since 2012, yet little evidence exists on how deeply the framework has reached actual classroom practice. This study examined the extent of OBE implementation across seven domains in selected board-regulated engineering programmes in the Philippines and used qualitative evidence to explain the resulting pattern, with the aim of informing institutional policy and quality-assurance mechanisms. Using a descriptive mixed-methods design, survey data were gathered from 186 engineering faculty, academic administrators, and quality-assurance personnel across 22 board-regulated engineering higher education institutions (HEIs), complemented by 435 open-ended responses analysed through reflexive thematic analysis. Implementation was moderate overall (overall weighted mean = 3.19 on a four-point scale). Only two of the seven domains reached the highly implemented threshold: Curriculum and Programme Outcome Alignment (3.35) and Teaching and Learning Strategies (3.32). In contrast, Institutional and Administrative Support recorded the lowest mean score at 3.02. This pattern held uniformly across institutional type and accreditation status, and the seven domains were strongly intercorrelated (r = .59-.84), indicating a single interdependent implementation system rather than seven independent scores. The findings consistently show that while programs have put the basic structure of OBE in place by setting goals and mapping courses, they still need to work on deeply embedding it into actual teaching, testing, and school culture. The most frequently raised theme, a faculty training and professional-development need (31.5% of responses), together with reflections on OBE as compliance versus transformation (18.9%), suggests that the distance between formal adoption and operational practice is structural rather than attitudinal. These findings provide educational policymakers and institutional leaders with a clear view of where OBE implementation succeeds and where it needs support. To meaningfully improve classroom practice, institutions should prioritize targeted faculty development, protected time, competency-level curriculum alignment, and closed-loop quality assurance.

Keywords: outcomes-based education; engineering education; educational policy; quality assurance; faculty development; programme implementation

INTRODUCTION

Higher education systems worldwide have reoriented quality assurance around demonstrable learning outcomes, defining programme quality less by content delivered than by the competencies graduates can show (Biggs & Tang, 2011; Rao, 2020). Recent research emphasizes that effective quality-assurance systems need to go beyond simply writing down learning outcomes. Institutions must have the capacity to measure and act on student achievement, making continuous improvement loops and data-driven practices standard expectations (Aithal, 2024; Kayyali, 2023). In the Philippines, the Commission on Higher Education (CHED) institutionalised this shift through Memorandum Orders No. 46 and No. 37, series of 2012 (CHED, 2012a, 2012b), the latter mandating outcomes-based education (OBE) for all engineering programmes beginning Academic Year 2012–2013. A recent policy review of CHED's Policies, Standards, and Guidelines (PSGs) issued before and after the K to 12 reforms found that, while the outcomes-based and typology-based architecture has matured, strategic clarity and organisational support are still needed for the quality-assurance cycle to function effectively (Orbeta & Paqueo, 2025). Similar implementation challenges have been documented across other engineering education systems adopting OBE, including reviews of factors shaping student learning outcomes (Asim et al., 2021),

practical implementation studies in Indian engineering institutes (Bhat et al., 2022), the broader curricular paradigm shift OBE represents (Zamir et al., 2022; Sumathi et al., 2025), and persistent gaps in student readiness and instructor implementation capacity (Kavitha & Karthika, 2023; Khan et al., 2023). A decade after its introduction, the policy framework is now settled. For educational managers, the core issue is no longer about whether institutions have adopted OBE, but how deeply it has been integrated into actual day-to-day operations. The challenge now lies in determining which policy and leadership strategies successfully drive that integration.

This gap between formal adoption and actual practice matters most in regional, resource-constrained institutions. These schools are located far from metropolitan centers, where accreditation expertise and teacher-training resources are usually concentrated, making them the least studied segment of higher education. A common finding in the literature is that institutions often adopt OBE only on paper. While schools frequently update their syllabi, outcome statements, and curriculum maps, they often fail to change their actual teaching methods, assessment designs, or broader institutional culture (Custodio et al., 2019; Iringan & Bansig, 2022; Shaheen, 2019). Similar profiles of formal adoption without deep implementation have been documented across other Philippine engineering and higher-education programmes (Absolor, 2025; Borsoto et al., 2014; Canini & Dalis, 2016; Fernando, 2021; Mercado & Lagto, 2018; Pepito, 2019). Studies show that the biggest hurdle to real OBE progress is a lack of assessment literacy among faculty. Many instructors still struggle to create valid exams and use the results to guide their day-to-day teaching (Baartman & Quinlan, 2023; Hapinat, 2023), a gap that has surfaced concretely in board-examination-linked coursework, where student performance on OBE-based assessments has reflected inconsistent instructor preparation (Camello, 2014). The challenge is sharpened in regional ASEAN contexts pursuing outcomes-based reform, where the alignment of curriculum, assessment, and quality-assurance practice with the constructive-alignment framework remains uneven (Pham & Nguyen, 2024). Less common is work that measures, domain by domain, how far implementation has actually reached in such settings and then draws on practitioners' own accounts to explain the pattern in terms that institutional leaders and policymakers can act upon.

This study addresses that gap in selected board-regulated engineering programmes in the Philippines, drawn from 22 institutions that span state and private HEIs, multiple campuses, and a wide range of accreditation maturity. It asks a single, focused question with both a descriptive and an explanatory dimension: To what extent is OBE implemented across seven domains in these board-regulated engineering programmes, and how do practitioners explain the resulting pattern? The seven domains examined are (a) Teacher Preparedness and Understanding of OBE; (b) Curriculum and Programme Outcome Alignment; (c) Teaching and Learning Strategies; (d) Assessment and Evaluation; (e) Faculty Competence and Development; (f) Institutional and Administrative Support; and (g) Student Engagement and Support.

The contribution is twofold and policy-oriented. First, the study provides a domain-resolved implementation profile across a set of engineering programmes, rather than a single aggregate score or a study of one or two institutions, making visible where in the OBE system implementation is strong and where it is still developing. Second, by integrating 435 open-ended practitioner responses with the quantitative profile, it advances a developmental interpretation—broad structural adoption alongside still-maturing operational depth—that reframes the familiar compliance-versus-transformation discussion in concrete, domain-specific, and actionable terms for quality-assurance bodies, institutional leaders, and faculty-development planners operating under comparable constraints. This combination is what distinguishes the present study from earlier Philippine OBE research: prior work has generally reported either a single institution's implementation status (e.g., Cayot, 2019; Custodio et al., 2019; Iringan & Bansig, 2022) or an aggregate readiness score without domain resolution, so it could identify that a gap between adoption and practice exists but not specify, across a multi-institution sample, which of the seven implementation domains carry that gap and why.

Conceptual Framing

This analysis relies on three established frameworks to evaluate the broader implementation of OBE and its policy implications. Constructive alignment (Biggs, 1996; Biggs & Tang, 2011) supplies the criterion against which implementation extent is judged: in a fully realised OBE system, intended outcomes, teaching and learning activities, and assessment tasks form a single coherent loop. Implementation can therefore remain incomplete

even when learning outcomes are clearly defined. This usually happens because one part of the loop, typically the design or use of assessments, lags behind the rest of the framework.

A systems (input–process–output) perspective (Bertalanffy, 1968) frames OBE implementation as the process layer mediating between institutional inputs and educational outputs, and underscores that the seven domains are interdependent rather than separable: weakness in faculty development propagates into assessment and monitoring regardless of how complete curriculum documentation appears. A change-process lens (Lewin, 1951) provides the developmental vocabulary for interpreting a moderate profile: a system may have unfrozen traditional practice and be moving, with updated curricula and student-centred methods in place, without having refrozen OBE as a stable, evidence-driven institutional norm. On this reading, a moderate score is not a failure but the diagnostic signature of a system mid-transition (Harden et al., 1999), and the qualitative themes identify what is preventing refreezing. These constructs are used as structured guides for interpretation rather than as variables to be tested; the study's empirical object is the extent of implementation and its practitioner-grounded explanation.

METHODOLOGY

Research Design

The study used a descriptive mixed-methods design with an explanatory-sequential logic (Creswell & Plano Clark, 2018; Johnson & Onwuegbuzie, 2004). A quantitative survey established the domain-level extent of implementation, after which qualitative thematic analysis of embedded open-ended responses was used to explain and contextualise the quantitative pattern. The integration point is interpretive: each quantitative domain result is read alongside the themes that account for it.

Setting and Participants

The setting comprised 22 HEIs offering board-regulated (licensure-track) undergraduate engineering programmes within a defined Philippine higher-education context. Total enumeration of the eligible institutions in that context was used, eliminating institutional-level sampling error. Within each HEI, respondents were selected purposively for their direct involvement in planning, implementing, monitoring, or evaluating OBE: engineering faculty teaching major courses, academic administrators (deans and programme chairs), and quality-assurance personnel. The achieved sample was 186 respondents across the 22 institutions.

Instrument

A researcher-developed survey questionnaire combined Likert-scale items with embedded open-ended prompts. The OBE-implementation section, which is the basis of this paper, measured the seven domains through descriptor statements rated on a four-point scale (4 = Highly Implemented; 3 = Moderately Implemented; 2 = Slightly Implemented; 1 = Not Implemented). A forced-choice four-point scale was adopted deliberately to avoid central-tendency bias and to require a definitive position, consistent with established practice in OBE implementation research. The instrument underwent expert content validation by a ten-member panel spanning engineering education, educational management, OBE research, quality assurance, and research methodology, assessed through an item-level content validity index, followed by a face-validity review with a three-member subgroup. It was then pilot-tested with 34 comparable respondents from non-board engineering programmes outside the study population; subscale reliability was assessed using Cronbach's alpha against the conventional 0.70 threshold (Nunnally & Bernstein, 1994), consistent with established validity and reliability practice in social science research (Drost, 2011). The full survey instrument is available as supplementary material to support transparency and reproducibility.

All seven subscales demonstrated high internal consistency, with Cronbach's alpha coefficients well above the 0.70 threshold: Teacher Preparedness and Understanding of OBE ($\alpha = 0.850$), Curriculum and Programme Outcome Alignment ($\alpha = 0.909$), Teaching and Learning Strategies ($\alpha = 0.942$), Assessment and Evaluation ($\alpha = 0.974$), Faculty Competence and Development ($\alpha = 0.936$), Institutional and Administrative Support ($\alpha = 0.950$), and Student Engagement and Support ($\alpha = 0.889$).

The weighted-mean interpretation bands were: 3.25–4.00 = Highly Implemented; 2.50–3.24 = Moderately Implemented; 1.75–2.49 = Slightly Implemented; and 1.00–1.74 = Not Implemented.

Procedure

Following the required institutional and regulatory authorisation, the questionnaire was administered in person or via a secure online platform according to institutional preference, with a minimum two-week response window and one follow-up reminder. The three embedded open-ended prompts that cover the perceived implications of current OBE practices, areas needing further support, and recommendations for enhancing OBE have generated 435 substantive textual responses from the same 186 respondents.

Data Analysis

Quantitative data were screened and analysed using descriptive statistics (weighted means and standard deviations), followed by inferential tests: independent-samples t-tests compared domain and overall implementation scores between institutional types (state university vs. private HEI), one-way ANOVA compared scores across accreditation-status categories, and Pearson correlations tested the systems-theory expectation that the seven domains are interdependent. Qualitative responses were analysed using Braun and Clarke's (2006, 2022) six-phase reflexive thematic analysis. All 435 responses were coded exhaustively.

Consistent with emerging practice in AI-assisted qualitative inquiry (Christou, 2023; De Paoli, 2024; Morgan, 2023), a large language model was used in a formative role during codebook development: it was prompted to cluster the open-ended responses and to suggest candidate themes from the raw data. These machine-suggested candidates were not adopted as final. The researcher reviewed all candidate themes and developed the coding scheme through a two-round theme-review process in which nine initial candidate themes were refined into seven stable themes (with two candidates merged into a single interpretive theme and one vague-endorsement candidate dissolved), retaining final authority over the theme structure, definitions, and boundaries. While AI assisted with initial theme generation, all final analytical decisions and thematic reductions were made by the researcher and are fully documented in the audit trail.

After the codebook was finalised, a post hoc consistency check was conducted to verify the stability of the coding scheme. The AI was given only the finalised codebook, consisting of the seven theme names and their definitions (e.g., T1 = faculty training, orientation, and development gaps; T6 = documentation burden and workload; T7 = compliance-versus-genuine-transformation and institutional support), and was instructed: "Apply ONLY these definitions. Assign each response to one or more themes. Do not invent new themes." This constrained prompt meant the AI could not introduce new categories at this stage; the check tested only whether it could consistently apply definitions the researcher had already fixed. The final codebook was independently re-applied by an AI tool to a reproducible random 25% subset of the codable responses (n = 76), and the resulting codes were compared with the researcher's coding. This check is distinct from, and later than, the formative development use described above: in development the AI suggested candidate themes from raw data, whereas here it applied an already-fixed codebook so that concordance could be assessed.

Independent application of the codebook to the subset yielded high concordance on the concrete, descriptive themes and lower concordance on the interpretive theme. The tool and the researcher agreed on at least one assigned theme for 88.2% of subset responses, with exact theme-set agreement of 51.3% (multiple themes per response were permitted, which lowers exact-set agreement by design). Per-theme presence agreement was highest for Faculty Training (T1, 73%), Curriculum–Board Alignment (T5, 72%), and Resource Constraints (T4, 67%), and lowest for the interpretive theme, OBE as transformation versus compliance (T7, 28%), and for Quality Assurance and Monitoring (T2, 32%). Divergence clustered almost entirely on the T2–T7 boundary, where responses about monitoring and continuous improvement shade into judgements about compliance versus genuine transformation. This distinction represents a recognized interpretive boundary instead of a coding error. In these instances, the final decision relied entirely on the researcher's reflexive judgment rather than mechanical matching.

This procedure is reported as a single-coder dependability check on the consistency and communicability of the codebook, not as a formal inter-rater reliability statistic; because the scheme permits multiple themes per response, percentage agreement on theme presence rather than a chance-corrected coefficient (e.g., Cohen's kappa) is the appropriate measure. Every divergence between the researcher's and the AI's coding was resolved individually and documented in a reflexive memo, illustrating that the AI's output was consulted rather than adopted automatically. For example, where the AI additionally tagged a response mentioning incentives for adapting OBE with T7 alongside the researcher's original T1, the researcher reviewed the case, agreed that the incentive language invoked institutional-support motivation, and revised the master coding to add T7. Conversely, where the AI tagged a response about financial support and training with T4 (resources) in addition to the researcher's T1, the researcher rejected the addition, judging the financial reference to describe enabling training rather than facilities. In a third case, the AI's suggested addition of T7 to a response primarily about equipment and instruments was accepted only as a secondary code, with T4 retained as primary. In each instance the AI functioned strictly as a second read against a fixed standard, and final coding authority remained with the researcher throughout. Trustworthiness was further supported through reflexive memos, an audit trail, thick description with verbatim quotation, and triangulation with the quantitative findings (Lincoln & Guba, 1985; Nowell et al., 2017).

AI-use disclosure. The author used Anthropic's Claude (a large language model) in the qualitative analysis to assist with codebook development—specifically, to cluster open-ended responses and suggest candidate themes from the raw data—and, during manuscript preparation, to independently re-apply the finalised codebook to a random subset of responses as a consistency check. The researcher reviewed and refined all AI-generated outputs, retained final authority over every code, theme, and interpretation, and is fully responsible for the integrity of the analysis and the content of this article. The AI tool did not meet authorship criteria and is not listed as an author.

Ethical approval followed the Philippine National Ethical Guidelines for Health and Health-Related Research; participation was voluntary, with informed consent and data-privacy safeguards observed throughout.

RESULTS AND DISCUSSION

Overall Extent of Implementation

Across the seven domains, OBE implementation was moderate overall (overall weighted mean = 3.19). Two domains reached the highly implemented band and five fell within the moderately implemented band (Table 1). The pattern is consistent: domains closest to individual, course-level, documentable practice score highest, while domains requiring coordinated institutional investment score lowest.

Table 1

Extent of OBE Implementation Across the Seven Domains (N = 186)

Rank	Domain	Weighted Mean	SD	Descriptive Equivalent
1	Curriculum and Programme Outcome Alignment	3.35	0.64	Highly Implemented
2	Teaching and Learning Strategies	3.32	0.62	Highly Implemented
3	Teacher Preparedness and Understanding of OBE	3.18	0.68	Moderately Implemented
4	Student Engagement and Support	3.16	0.70	Moderately Implemented
5	Faculty Competence and Development	3.14	0.69	Moderately Implemented

6	Assessment and Evaluation	3.13	0.70	Moderately Implemented
7	Institutional and Administrative Support	3.02	0.75	Moderately Implemented
	Overall	**3.19**		**Moderately Implemented**

Note. Four-point scale; 3.25–4.00 = Highly Implemented, 2.50–3.24 = Moderately Implemented.

The two highest-scoring domains both concern what an individual programme can document, and an individual instructor can enact. The lowest, Institutional and Administrative Support, concerns what only the institution can provide. This ordering is the central quantitative finding and frames the interpretation that follows.

Domain-Level Findings

Curriculum and Programme Outcome Alignment (3.35, rank 1) was strongest. The leading indicator was the clear statement of course outcomes in all syllabi (3.55), and the alignment of programme outcomes with CHED standards and the Philippine Qualifications Framework was also high. The weakest indicator within this otherwise high-scoring domain was stakeholder consultation in defining or reviewing programme outcomes (3.11): the documentary dimension of alignment is well established while the participatory-governance dimension lags.

Teaching and Learning Strategies (3.32, rank 2) showed the alignment of teaching methods with intended learning outcomes scoring highest (3.44) and the documentation and monitoring of teaching for OBE compliance scoring lowest (3.17). Classroom-level pedagogy is broadly outcome-aligned; the accountability-oriented function of monitoring that pedagogy lags.

While "Teacher Preparedness and Understanding of OBE" ranked third overall with a mean score of 3.18, this score reflects a gap between theory and preparation. Faculty demonstrated high conceptual awareness of fundamental OBE principles (3.28) but scored lowest on items regarding formal orientation and structured training (3.09). This indicates that conceptual understanding currently exceeds formal training.

Student Engagement and Support (3.16, rank 4) clustered tightly across its four indicators (3.15–3.18), indicating consistent but not deep implementation of student-facing practices, with room to systematise advising and student involvement in evaluation around outcome attainment.

Faculty Competence and Development (3.14, rank 5) again showed conceptual items scoring higher than procedural ones; the lowest indicator was faculty confidence in using OBE software or documentation templates (2.94). Procedural and data-handling competence trails conceptual understanding.

Assessment and Evaluation (3.13, rank 6) showed the clearest internal weakness. Faculty training in developing valid (3.02) and reliable (3.03) assessment instruments ranked among the lowest indicators, alongside the systematic collection (3.13) and analysis (3.11) of assessment data and the preparation of attainment reports (3.07). Assessment literacy—the capacity to design instruments and act on the evidence they produce—is the weakest link in the implementation chain, echoing findings that assessment capability is the most persistent proximate constraint on OBE success (Mistamiruddin & Mohamad Nasri, 2024; Rashid, 2013).

Institutional and Administrative Support (3.02, rank 7) was the lowest-scoring domain. The recognition or reward of faculty OBE efforts was the single lowest indicator across the domain (2.87), and the organisation of documentation and reporting systems (2.99) was also low. Institutions endorse OBE in policy but have not operationalised the incentive and support structures that sustain it.

Institutional Type, Accreditation Status, and Inter-Domain Relationships

To test whether this domain profile held uniformly across the sample, overall and domain-level composite scores were compared by institutional type (94 respondents from state universities and colleges [SUCs], 92 from private HEIs) using independent-samples t-tests, and by accreditation status (six categories, from None/Candidate to Center of Excellence) using one-way ANOVA. No domain, and no overall score, differed significantly by institutional type (all $p > .13$) or accreditation status (all $p > .06$); the closest to significance was Teacher Preparedness and Understanding of OBE across accreditation levels ($F = 2.13$, $p = .064$). The domain profile reported above therefore does not appear to be an artifact of institution type or accreditation maturity: SUCs and private HEIs, and programmes at every accreditation level, show the same pattern of comparatively strong curriculum and teaching domains alongside weaker assessment and institutional-support domains.

Pearson correlations among the seven domain composites were uniformly strong and positive ($r = .59$ to $.84$, all $p < .001$), consistent with the systems-theory expectation that the domains function as an interdependent process rather than as separable components (Bertalanffy, 1968). The strongest association was between Faculty Competence and Development and Assessment and Evaluation ($r = .85$), followed by Institutional and Administrative Support with Assessment and Evaluation ($r = .80$) and with Student Engagement and Support ($r = .80$). These associations support the interpretation offered in the Conceptual Framing: weakness in faculty development is statistically bound up with weakness in assessment capability rather than remaining contained within a single domain, and the domain ordering in Table 1 reflects one interlocking system rather than seven independent scores.

The Qualitative Pattern: Seven Themes

Thematic analysis of the 435 open-ended responses produced seven themes (Table 2). Each theme maps onto a specific feature of the quantitative profile, and together they explain why the profile takes the shape it does.

Table 2

Themes From Open-Ended Responses (435 Responses; Multiple Themes per Response Permitted)

Theme	**n**	**% of 435**
T1 — Faculty Training and Professional Development Gap	137	31.5
T2 — Quality Assurance, Monitoring, and Continuous Improvement	89	20.5
T3 — Assessment Practices, Rubrics, and Outcome-Aligned Tools	88	20.2
T4 — Resource, Facility, and Technology Constraints	86	19.8
T7 — OBE as Transformative Practice vs. Compliance Checklist	82	18.9
T5 — Curriculum–Outcome–Board-Examination Alignment	71	16.3
T6 — Documentation Burden and Faculty Workload	68	15.6

Note. T7 integrates two related codes (compliance/superficial OBE and institutional-support adequacy), which respondents consistently described together.

The faculty training and professional-development gap (T1, 31.5%), the dominant theme, explains why Teacher Preparedness (3.18) and Faculty Competence (3.14) trail the two high-band domains despite high conceptual awareness. Respondents described holding the ideas of OBE while needing proper orientation, and noted that outcomes are sometimes stated in syllabi for compliance rather than as an operational guide. As one newly hired instructor put it: "I have the ideas about OBE, however proper orientation would help a lot to us." Conceptual awareness has spread faster than trained, operational capability.

Assessment practices (T3, 20.2%) and documentation burden and workload (T6, 15.6%) jointly explain why Assessment and Evaluation (3.13) ranks among the lowest implemented domains. Respondents viewed assessment primarily as a bureaucratic exercise rather than a tool for professional growth. They noted that the heavy focus on paperwork creates an administrative burden, leaving little time for actual classroom improvement, with one respondent summarising the trade-off as being "student-centered yet it increased documentation workload." These low assessment-literacy indicators should not be viewed as isolated issues. Instead, they are direct consequences of an institutional culture focused on compliance and high workloads.

Quality assurance, monitoring, and continuous improvement (T2, 20.5%) accounts directly for the lowest domain mean, Institutional and Administrative Support (3.02). Respondents acknowledged that QA systems have strengthened documentation but flagged a persistent gap between collecting assessment data and using it, with several calling directly for the "formulation of monitoring system for the full implementation of OBE." Where QA functioned as a continuous-improvement loop rather than a compliance checklist, respondents linked it to stronger programme outcomes, but most described the former rather than the latter. Resource, facility, and technology constraints (T4, 19.8%) reinforce the same low-support pattern, with respondents from less-resourced programmes citing inadequate laboratory equipment and weak digital infrastructure as material limits on operationalising OBE at depth; one respondent asked specifically for "funding for more expensive laboratory equipment in some professional subjects, not just on software, for better outcomes-based education."

Curriculum–outcome–board-examination alignment (T5, 16.3%) qualifies the highest-scoring domain. Even as respondents recognised that documentary curriculum mapping is substantially complete, they urged that outcomes be aligned with actual competency content rather than general learning outcomes. The high Curriculum Alignment score (3.35) therefore reflects formal, documentary mapping more than competency-level alignment—a caveat the quantitative score alone would conceal.

The characterisation of OBE as transformative practice versus compliance checklist (T7, 18.9%), the cross-cutting theme, accounts for the gap between the overall mean (3.19) and the highly implemented threshold. Respondents repeatedly described OBE as having completed the documentary and structural layer while the deeper instructional, assessment, and cultural shifts the framework envisions are still developing, with one observing that OBE exists from the perspective of administration but is felt less by its implementers. Another respondent linked this directly to institutional support: "Without adequate institutional support to bridge the gap between our OBE framework and faculty readiness, quality assurance remains superficial compliance and instruction fails to prepare students for board exams." This theme integrates the other six and expresses, in practitioners' own terms, the developmental pattern of broad adoption with still-maturing depth.

DISCUSSION: BROAD ADOPTION, STILL-MATURING DEPTH

Read through Lewin's (1951) change-process lens, the overall profile is the diagnostic signature of a system that has unfrozen traditional practice and is moving—updated curricula and outcome-aligned teaching are in place—without having refrozen OBE as a stable, evidence-driven institutional norm. The domain ordering established in the Results is not incidental to this reading: viewed through the systems (input–process–output) perspective (Bertalanffy, 1968), the domains that moved fastest are those whose inputs an individual faculty member or programme can supply unilaterally (curriculum documentation, classroom pedagogy), while the domains still lagging depend on inputs only the institution can provide (assessment infrastructure, recognition systems, coordinated monitoring). Constructive alignment theory (Biggs, 1996; Biggs & Tang, 2011) supplies the standard against which this partiality is judged: outcomes, teaching, and assessment must close into a single loop, and the present findings show that loop closed at the outcomes–teaching link while remaining open at the assessment link—which is precisely where the quantitative profile is weakest and where the qualitative themes concentrate.

The strength of curriculum and programme outcome alignment reflects the influence of external quality-assurance mechanisms more than internal pedagogical maturity: CHED’s PSGs and the Philippine Qualifications Framework make documentary curriculum mapping an explicit accreditation requirement, so it is unsurprising that this is where implementation moved fastest (Mistamiruddin & Mohamad Nasri, 2024). Read through constructive alignment (Biggs, 1996; Biggs & Tang, 2011), however, mapping outcomes to courses is only the

first link in the loop, and reclaiming the full alignment ideal requires the loop to be actively maintained rather than assumed once documented (Loughlin et al., 2020). The comparatively low score for stakeholder consultation (3.11) indicates that alignment remains regulatory rather than responsive: outcomes are aligned to what accreditors require rather than continuously renegotiated with industry partners, alumni, and employers who could keep the loop current.

Teacher preparedness, faculty competence, and assessment moved together rather than independently. The strong inter-domain correlations reported above (r = .77-.85 among these three domains) confirm what the systems perspective predicts: a shortfall in one process component is a shortfall in all of them (Bertalanffy, 1968). Respondents' own accounts explain the mechanism: faculty described strong conceptual awareness of OBE but insufficient formal training to operationalise it (T1), and this gap surfaces downstream as difficulty designing valid, reliable assessment instruments and acting on the evidence they produce (Rashid, 2013; Mistamiruddin & Mohamad Nasri, 2024).

Because assessment is the evidentiary link that closes the constructive-alignment loop (Biggs & Tang, 2011), a training deficit at the faculty level is not contained within Faculty Competence and Development; it is structurally transmitted into Assessment and Evaluation, exactly as observed in both the correlation matrix and the qualitative themes. This is consistent with the broader literature on educational change, which finds that reforms become sustainable only when professional learning is continuous and embedded within institutional practice rather than delivered through isolated workshops (De Jong et al., 2025; Meesuk et al., 2021); the faculty training gap identified here should therefore be read as an indicator of institutional readiness to sustain the reform, not merely a technical skills deficit.

Institutional and administrative support, the lowest-scoring domain, is where Lewin's (1951) refreezing has occurred least: respondents described limited recognition for OBE-related work, inadequate laboratory facilities, and fragmented documentation systems (T2, T4) as constraints that leave implementation dependent on individual faculty initiative rather than institutionalised practice. This matters because refreezing, on Lewin's model, is what converts a changed practice into a stable norm; without it, OBE implementation stays vulnerable to turnover, workload pressure, and variation in individual motivation — the same dependency the qualitative themes describe.

Perhaps the most important contribution of the qualitative findings is the distinction respondents made between doing OBE and living OBE (T7): learning outcomes, curriculum maps, and assessment reports have become routine institutional requirements, yet many respondents questioned whether these practices had fully transformed classroom teaching or student learning. The findings suggest that the participating engineering programmes are transitioning between compliance-oriented and improvement-oriented implementation, having established the structural architecture of OBE while continuing to build the institutional culture that lets evidence, rather than documentation, drive continuous improvement.

Implications for Policy and Educational Management

For institutional leaders and quality-assurance bodies operating under similar constraints, a domain-resolved profile serves as a practical diagnostic tool. It highlights exactly where interventions can achieve the greatest impact based on three key insights. First, the critical hurdle is faculty assessment literacy rather than curriculum documentation. Refining outcome statements and curriculum maps yields little benefit since these are already the strongest domains. Instead, institutions should redirect their efforts toward helping faculty design valid tests and use student data effectively.

Second, monitoring and accreditation processes must separate actual competency-level alignment from superficial paperwork. High alignment scores can easily mask a purely formal mapping process. Evaluators need to audit whether mapped outcomes match the competencies graduates demonstrate. Third, meaningful progress depends on institutional support rather than individual effort. The lowest-scoring areas require coordinated commitments such as faculty recognition, protected time, and proper resourcing. Consequently, sustained improvement comes from department- and university-level policy shifts rather than from urging faculty to do more. The compliance-driven mindset reported by respondents is simply a practical response to a system that

rewards documentation over professional growth. To change this behavior, institutions must change what they reward.

Beyond the specific cases studied, this research offers a practical diagnostic framework for evaluating OBE implementation. By resolving OBE implementation into seven domains and reading each quantitative result against the themes that explain it, the analysis makes the familiar compliance-versus-transformation distinction empirically concrete and domain-specific (Shaheen, 2019; Syeed et al., 2024). This developmental framework shows that an institution can achieve broad adoption while its implementation depth continues to mature. For other universities and quality-assurance systems operating in resource-constrained settings (Danga, 2025; Keo et al., 2023), this perspective offers a practical approach to identify exactly where their own OBE practices can be strengthened.

LIMITATIONS

Several limitations bound the findings. The data are self-reported perceptions of implementation, which may diverge from observed practice and may be shaped by social desirability, particularly among respondents reporting on programmes with active accreditation or board-examination stakes; the four-point forced-choice scale, chosen to reduce central-tendency bias, removes a neutral option and may compress variance.

The study is cross-sectional and confined to a single set of institutions in one Philippine higher-education context, so the profile is a snapshot of a system mid-transition and is not claimed to generalise beyond comparable contexts; the absence of significant differences by institutional type or accreditation status (reported above) suggests the pattern is not confined to a particular subset of the sample, but this does not extend the claim beyond Region II. The qualitative analysis was conducted by a single researcher within a reflexive thematic-analysis tradition; the AI-assisted consistency check supports dependability but does not constitute independent human co-coding. Finally, this paper deliberately brackets the related analyses of institutional readiness and board-examination outcomes, which are reported separately; the profile here is a focused account of the extent of implementation rather than of cause or effect.

Positionality and Declarations

The author serves in a quality-assurance role within the Philippine higher education system, which includes professional engagement with institutions of the type studied. This study was conducted as independent doctoral research with the knowledge and support of the author's office and was carried out so that findings reflect the data rather than any institutional position. To protect participating institutions, individual HEIs are not named, and results are reported only in aggregate. The study observed the Philippine National Ethical Guidelines for Health and Health-Related Research, with voluntary informed consent and data-privacy safeguards.

CONCLUSION

More than a decade after OBE became mandatory for Philippine engineering programmes, the programmes studied show broad adoption with still-maturing depth: a moderate overall profile (3.19) in which curriculum alignment and teaching strategies reach the highly implemented band, while assessment capability and institutional support are still developing. Practitioners' own accounts explain the pattern in developmental terms—the structural elements of OBE are in place, while the trained capability, protected time, usable assessment evidence, recognition, and resources needed to operate OBE as a continuously improving system are still being built.

For policymakers and institutional leaders, the practical message is constructive and specific: the next gains in OBE quality will come less from additional documentation and more from faculty assessment development, competency-level rather than merely documentary alignment, and the institutional structures that help deepen practice. Future research should track these same domains longitudinally within Region II to test whether the profile shifts as institutions respond to these recommendations, and should extend the seven-domain instrument to other Philippine regions and ASEAN contexts pursuing comparable outcomes-based reforms, to establish whether the domain ordering observed here is a general feature of OBE implementation or specific to this setting.

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