

Problem-Based Learning in a Psychiatric and Mental Health Nursing Practicum: A Four-Year Instructional Evaluation in an Accelerated Second-Degree Bachelor of Nursing Science Program

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Abstract

Problem-based learning (PBL) is a student-centred instructional strategy promoting active learning, critical thinking, and problem-solving skills in psychiatric and mental health nursing education. This study aimed to describe the implementation of an adapted PBL instructional model and to evaluate course-evaluation outcomes in a psychiatric and mental health nursing practicum across four academic years (2021–2024). Academic year 2021 served as the pre-implementation (baseline) year and 2022–2024 represented the PBL implementation period.

A repeated cross-sectional instructional evaluation was conducted across four independent yearly cohorts comprising a total of 214 nursing students enrolled in a psychiatric and mental health nursing practicum course at a private university in Pathum Thani Province, Thailand (2021: $n = 45$; 2022: $n = 62$; 2023: $n = 71$; 2024: $n = 36$). Two instruments were administered: the PBL Input-Process-Output Evaluation Questionnaire of Thawarawong (2008), administered in academic year 2022 only, and the Curriculum Instructional Evaluation Questionnaire, administered across all four years. Descriptive statistics, the coefficient of variation, and Pearson trend correlations were applied.

The overall PBL evaluation score in 2022 was 4.58 out of 5.00 (Very Good). Process and Output dimensions achieved the highest mean scores (4.62), while Input scored 4.47. Year-to-year analysis showed higher mean scores across the study period: overall mean scores rose from 4.85 to 4.95, analytical thinking from 4.87 to 4.94, problem-solving from 4.91 to 4.94, and self-directed learning from 4.85 to 4.94. Trend correlation coefficients ranged from $r = 0.791$ to $r = 0.868$, indicating positive year-to-year trends. PBL implementation was associated with consistently positive course-evaluation outcomes, with higher mean scores observed across the study period. Because the analysis was based on annual mean values from different cohorts, these findings are interpreted as positive year-to-year evaluation trends rather than as confirmation of within-student improvement or of causal effects on clinical competency.

Keywords: Problem-Based Learning; Psychiatric and Mental Health Nursing; Nursing Practicum; Accelerated Nursing Program

Introduction

The evolution of nursing education has underscored the need for pedagogical methods that prepare students for complex clinical decision-making and patient-centered care. Traditional lecture-based instruction, while foundational, often proves insufficient in developing the critical thinking and problem-solving skills essential for contemporary nursing practice (Matlala, 2021).

Problem-Based Learning (PBL), first developed at McMaster University, Canada, in the 1960s, represents a constructivist educational approach in which learning occurs through inquiry into authentic, complex problems (Ghani et al., 2021). In nursing education, PBL is particularly relevant because the profession demands clinical reasoning, evidence-based practice, and collaborative care delivery. Its key features include: (1) a student-centered learning environment; (2) authentic problems as the primary learning stimulus; (3) problem scenarios as vehicles for clinical skill development; (4) new knowledge acquired through self-directed study; (5) collaborative small-group work; and (6) instructors functioning as facilitators rather than transmitters of knowledge (Ghani et al., 2021).

The implementation of PBL in psychiatric and mental health nursing education holds particular significance given the complexity of mental health conditions and the diverse nature of therapeutic interventions. Students must develop not only clinical competencies but also interpersonal skills, cultural sensitivity, and ethical reasoning, all of which are foundational to effective psychiatric nursing practice (Al Najjar et al., 2021). Psychiatric nursing practicum presents unique challenges, as mental illness encompasses disturbances in thought, affect, and behavior (Shaygan et al., 2023). PBL can cultivate empathy through case-based scenarios, develop cultural competence through diverse patient presentations, reinforce therapeutic communication skills, and prepare students for interdisciplinary collaboration (Kriki et al., 2025).

A growing body of evidence supports PBL's effectiveness in nursing education. Wei et al. (2024) conducted a systematic review and meta-analysis of 19 studies ($N = 1,996$) and reported significantly greater improvement in critical thinking skills among PBL groups compared with controls ($SMD = 0.47$; $95\% \text{ CI} = 0.33 \text{ to } 0.61$; $p < .001$). Perez-Perdomo and Zabalegui (2023) demonstrated through a systematic review of randomized controlled trials that PBL effectively develops clinical reasoning and prepares students for complex clinical environments. Jamshidi et al. (2021) further showed that PBL significantly improved nursing students' knowledge, attitude, and perception of patient safety compared with conventional instruction.

The PBL process utilizes problem scenarios to stimulate learners to hypothesize, search for foundational knowledge, and derive solutions through seven sequential steps (Thawarawong, 2008): (1) problem identification and exemplification; (2) brainstorming; (3) problem analysis; (4) self-directed learning; (5) knowledge synthesis and dissemination; (6) evaluation and refinement; and (7) reflective learning. This framework promotes integration of knowledge across disciplines and fosters analytical thinking, problem-solving, communication, teamwork, and lifelong learning skills.



Nevertheless, implementing PBL in psychiatric nursing education presents notable challenges, including the demand for faculty skilled in facilitation, the need for contextually appropriate case designs aligned with learning objectives, and the requirement for multidimensional assessment. Kim and Kim (2022) emphasized that adequate faculty preparation and curriculum design are prerequisites for successful PBL adoption in psychiatric nursing. Putri and Sumartini (2021) recommended blended assessment approaches integrating knowledge tests, critical thinking appraisals, behavioral observation, and student feedback surveys.

The introduction of PBL into the psychiatric and mental health nursing practicum course within a 2.6-year accelerated Bachelor of Nursing Science program responded directly to the imperative for quality improvement aligned with international educational standards. To clarify the comparison logic used throughout this paper, academic year 2021 represents the pre-implementation (baseline) year, during which the practicum was delivered using the conventional clinical-teaching approaches in place before the reform; academic year 2022 was the first year of PBL implementation; and academic years 2023 and 2024 were the subsequent PBL implementation years. The PBL instructional framework itself was adapted from Thawarawong's (2008) Input–Process–Output evaluation model prior to implementation, rather than being newly constructed within this study. Accordingly, this study aimed to (1) describe and evaluate the implementation of PBL instructional management in this course, and (2) compare instructional evaluation outcomes between the baseline year (2021) and the PBL implementation period (2022–2024), thereby generating an evidence base for future curriculum refinement and practical guidance for institutions considering PBL adoption in psychiatric nursing education.

Research Objectives

1. To describe and evaluate the implementation of PBL instructional management, based on a framework adapted from Thawarawong (2008), in the Psychiatric and Mental Health Nursing Practicum course within a 2.6-year accelerated Bachelor of Nursing Science program.
2. To compare instructional evaluation outcomes between the pre-implementation baseline year (2021) and the PBL implementation period (2022–2024).

Statement of the Research Questions

1. What are the evaluation outcomes of PBL instructional management in the Psychiatric and Mental Health Nursing Practicum course in the first year of implementation (academic year 2022)?
2. What are the year-to-year trends in instructional evaluation outcomes from the baseline year (2021) through the three PBL implementation years (2022–2024)?

Literature Review

Theoretical grounding of PBL. PBL is grounded in constructivist learning theory, complemented by adult learning (andragogy) and information processing principles, which together explain why authentic inquiry driven by problems is well suited to nursing students who

must integrate theory, clinical reasoning, and professional judgement (Ghani et al., 2021). Because these theoretical foundations are presented in the Introduction, they are not elaborated upon again here; this review instead concentrates on the evidence base for PBL and, in particular, on its comparatively under examined application within psychiatric and mental health nursing practica.

Synthesised evidence on PBL effectiveness. Across systematic reviews, meta-analyses, and randomised and quasi experimental studies, PBL is consistently associated with stronger outcomes than conventional instruction based on lectures, including gains in critical thinking and clinical reasoning, as well as in knowledge, attitudes, self-directed learning, and awareness of patient safety (Wei et al., 2024; Perez-Perdomo & Zabalegui, 2023; Jamshidi et al., 2021; Al Najjar et al., 2021). Rather than restating each study individually, since several are summarised in the Introduction, this body of work can be read as convergent evidence base supporting PBL as an effective pedagogy aligned with theory for nursing education. What remains less clear from this largely general literature is how these benefits translate to the specific demands of the psychiatric and mental health nursing practicum.

PBL in the psychiatric and mental health nursing practicum. The psychiatric practicum poses learning challenges that differ from those of general clinical placements. Students frequently approach mental health rotations with anxiety related to stigma, fear of patients, and uncertainty about therapeutic communication, all of which can be eased through guided preparation based on clinical scenarios (Shaygan et al., 2023). The clinical situations in mental health care, which are often ill structured and ambiguous, are particularly well matched to the PBL format, and PBL has been associated with stronger critical thinking skills among undergraduate psychiatric nursing students (Kriki et al., 2025). Taken together, these findings suggest that PBL is a contextually appropriate strategy for cultivating the empathy, relational competence, and clinical judgement that psychiatric nursing practice demands, competencies that are difficult to develop through instruction based on lectures alone.

Implementation considerations and the Thai/regional context. Successful PBL adoption depends on several enabling conditions: adequate faculty preparation and facilitation skill, contextually appropriate case design, institutional support and resources, and multidimensional, blended assessment (Kim & Kim, 2022; Putri & Sumartini, 2021; Matlala, 2021). Within Asia, supporting evidence comes largely from neighbouring systems, for example, psychiatric nursing education in the Republic of Korea (Kim & Kim, 2022) and clinical nursing education in Indonesia (Putri & Sumartini, 2021), whereas Thai evidence on PBL is concentrated mainly in medical and other non-psychiatric curricula (Thawarawong, 2008). Empirical reports of PBL applied specifically to psychiatric and mental health nursing practica in Thailand and the wider Southeast Asian region remain limited. This gap is salient because psychiatric nursing practice in Thailand is shaped by distinctive sociocultural factors, including Buddhist understandings of mental illness, care centred on family and community, and culturally specific patterns of help seeking and stigma, that influence how therapeutic communication and clinical reasoning are taught and applied. Situating PBL within this local educational setting is therefore necessary to interpret its relevance for Thai

accelerated nursing programmes, and the present study contributes evidence from one such institutional context.

Conceptual Framework

The conceptual framework for this study was adapted from Thawarawong's (2008) Input, Process, and Output evaluation model for problem-based learning (PBL). The model served as an organising and interpretive lens, defining which aspects of the PBL practicum were evaluated and how the resulting scores were interpreted, rather than functioning as a structural model whose internal relationships were statistically tested. Consistent with the actual scope of the study, the dimensions of the model were measured only at the subscale level. Individual sub-components, such as learner characteristics, facilitation roles, and specific process or social skills, were aggregated into subscale scores rather than measured or analysed separately, and no causal or correlational relationships among the framework components were statistically examined.

Within this framework, the Input and Process dimensions constitute the operational core of PBL and therefore warrant explicit description. The Input dimension addresses the foundational conditions that enable problem-based learning, namely learners' characteristics and readiness, the adequacy of teaching and learning resources, and the alignment of curriculum content with the practicum's objectives (Thawarawong, 2008). The Process dimension, which represents the heart of PBL, captures how learning is enacted in practice. It includes the design of PBL activities and trigger cases, the facilitation roles of instructors and other stakeholders, supporting activities, and the execution of PBL's seven sequential steps: problem identification, brainstorming, problem analysis, self-directed learning, knowledge synthesis and dissemination, evaluation and refinement, and reflective learning (Thawarawong, 2008). The Output dimension reflects the immediate learning outcomes of this process, encompassing knowledge outcomes, process (cognitive) skills, social and collaborative skills, and emotional or attitudinal development. These three dimensions define the conceptual content of the implementation quality evaluation and were measured as aggregate subscale scores in 2022 (Table 2), whereas the longer-term Outcome dimension (subject and content; self-directed learning) corresponds to the course evaluation track measured across the four academic years.

Accordingly, the framework is represented as two parallel evaluation tracks that were analysed and reported separately, rather than as a single continuous pathway encompassing Input, Process, Output, and Outcome (Figure 1). The first track, implementation quality, constitutes a single-year (2022) snapshot of the inaugural PBL implementation, measured using the PBL Input Process Output Evaluation Questionnaire (Thawarawong, 2008) and reported at the subscale level for Input, Process, and Output (Table 2). The second track, the course evaluation trend, captures year to year instructional evaluation outcomes across four academic years, with 2021 serving as the pre-implementation baseline and 2022 to 2024 representing the PBL implementation years, measured using the Curriculum Instructional Evaluation Questionnaire (Tables 3 and 4). The two tracks converge only at the level of descriptive synthesis. Because they draw on different instruments, time frames, and, for the trend track, independent yearly cohorts, no statistical link

between the tracks was tested. Their findings are interpreted together descriptively rather than as evidence of a measured pathway from PBL inputs and processes to course evaluation outcomes. The framework therefore informed the study in three explicit ways. It shaped the research design by specifying the two evaluation foci, it shaped the analysis by aligning each instrument with descriptive statistics, the coefficient of variation, and Pearson trend correlations, and it shaped the interpretation by framing the results as a cautious, descriptive synthesis rather than as a confirmed instructional effect model.

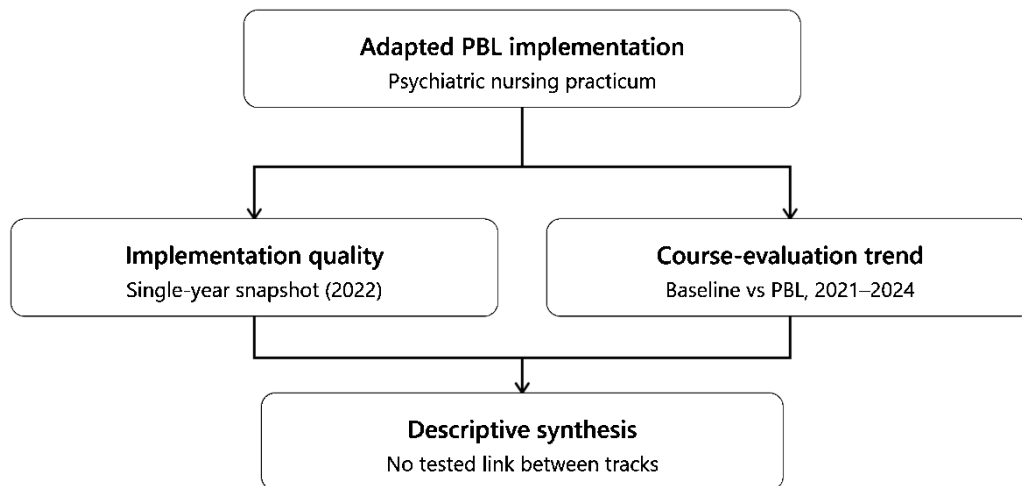


Figure 1 Development of Problem-Based Learning (PBL) Instructional Management

Research Methodology

This study employed a repeated cross-sectional instructional-evaluation design across four independent yearly cohorts (2021–2024). It was conducted as part of routine instructional quality-improvement processes using existing, anonymous course-evaluation data that contained no personally identifiable information. Students were informed that their course-evaluation responses were anonymous, that participation was voluntary with no incentives offered, that their responses would not affect their grades or academic standing, and that aggregated, de-identified data might be used for instructional research and quality improvement. No individual identifiers were collected, and all data were analysed and reported only in aggregate to protect confidentiality.

Population and Sample

The target population comprised all nursing students enrolled in the Psychiatric and Mental Health Nursing Practicum course at a private university in Pathum Thani Province, Thailand, during academic years 2021–2024. A total of 214 students participated: 2021 ($n = 45$, full population); 2022 ($n = 62$, full population); 2023 ($n = 71$, regular track, simple random sampling); and 2024 ($n = 36$, special/weekend track, simple random sampling). Male students accounted for 17.3% ($n = 37$) and female students for 82.7% ($n = 177$) of the total sample. In 2021 and 2022, every enrolled student completed the end-of-course evaluation, yielding complete-enumeration (full-population) data. In 2023 and 2024, larger combined enrolment and



the scheduling of multiple practicum rotations meant that complete-enumeration data were not feasible; for those years, a simple random sample was therefore drawn from the official course enrolment list, which served as the sampling frame, using computer-generated random numbers. It should be noted that the 2024 cohort was enrolled in a special/weekend (accelerated) track that differs from the regular daytime track in scheduling, intake, and student profile. The yearly cohorts may therefore not be fully comparable, and this is acknowledged as a limitation when interpreting the year-to-year trends reported below.

Research Tools

Two instruments were employed: the first instrument was the PBL Input-Process-Output Evaluation Questionnaire (Thawarawong, 2008), comprising 54 items across three subscales: Input (15 items), Process (27 items), and Output (12 items), rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The original instrument reported an internal consistency coefficient of $\alpha = 0.87$. This questionnaire was administered in academic year 2022 only, marking the inaugural year of PBL implementation. The second instrument was the Curriculum Instructional Evaluation Questionnaire, comprising 19 items across two subscales: Subject and Content Aspect (10 items) and Self-Directed Learning and Overall Experience (9 items), using the same 5-point Likert format. This questionnaire was administered at semester end across all four academic years. Both instruments were reviewed by three content experts and pilot-tested, yielding Cronbach's alpha coefficients of 0.81 and 0.86, respectively. This distinction between the two instruments is important for interpreting the results and is maintained throughout. The PBL Input-Process-Output dimensions reflect a single-year (2022) snapshot of the inaugural PBL implementation and are reported for that year only; consequently, no PBL Input-Process-Output data exist for 2021. The year-to-year comparison across 2021–2024 is therefore based solely on the Curriculum Instructional Evaluation Questionnaire, which was the standard course-evaluation instrument used in all four years. In this design, academic year 2021 functions as the pre-implementation baseline measured with the curriculum instrument, against which the curriculum-evaluation outcomes of the PBL years (2022–2024) are compared; the 2021 cohort was not evaluated with the PBL-specific questionnaire because PBL had not yet been introduced.

Data Collection

Online questionnaire links were distributed to students at the end of each semester from academic years 2021 through 2024. Students completed the surveys independently and voluntarily as part of the standard course evaluation process. Responses were collected through the official university online platform to ensure structured, standardized administration. To safeguard voluntary participation, the online evaluation system was configured so that individual responses remained inaccessible to instructors, with access locked by the university's central registrar system until after the grade submission deadline had passed, at which point only aggregated, de-identified results were released. This system-level separation ensured that participation could neither influence nor be influenced by academic assessment, as instructors had no access to individual evaluation responses at any point before final grades were officially

submitted and recorded. At the point of completion, students were explicitly informed that their responses were anonymous, that participation was voluntary, that their responses would not affect their grades or academic standing, and that aggregated, de-identified course evaluation data might subsequently be used for instructional research and quality improvement purposes. Voluntariness was further supported by the absence of any incentive and by the use of an anonymous online form that did not record student identifiers.

Data Analysis

Quantitative data were analysed using descriptive statistics (frequency, percentage, mean, and standard deviation) to characterize the sample and summarize evaluation scores. To examine year-to-year patterns, Pearson correlation coefficients (r) were computed between the academic-year sequence (coded 1–4) and the annual mean evaluation scores for each dimension, providing a descriptive index of the direction and strength of year-to-year change. Because this analysis was based on only four annual mean values drawn from different (independent) student cohorts rather than on repeated measurements of the same individuals, the coefficients are interpreted as descriptive indicators of year-to-year trends rather than as inferential evidence of longitudinal, within-student improvement, and are reported with corresponding caution. In addition to means and standard deviations, the coefficient of variation (CV) was calculated to assess the relative dispersion (stability) of the instructional evaluation scores across the four academic years. Score interpretation criteria were: 4.50–5.00 = Excellent; 3.50–4.49 = Good; 2.50–3.49 = Fair; 1.50–2.49 = Poor; 1.00–1.49 = Very Poor.

Research Results

A total of 214 nursing students participated across four academic years: 37 males (17.3%) and 177 females (82.7%). Detailed distribution is presented in Table 1.

Table 1 Basic Characteristics of the Study Sample by Academic Year

Academic Year	Semester	n	Male n (%)	Female n (%)	Sampling Method
2021	2nd	45	8 (17.8)	37 (82.2)	Total population
2022	2nd	62	11 (17.7)	51 (82.3)	Total population
2023	2nd	71	10 (14.1)	61 (85.9)	Simple random
2024	1st	36	8 (22.2)	28 (77.8)	Simple random
Total		214	37 (17.3)	177 (82.7)	

Analysis of the PBL Input-Process-Output Questionnaire (Thawarawong, 2008) for the inaugural implementation year (2022) yielded an overall mean score of 4.58 (SD = 0.59), interpreted as Very Good. Subscale analysis revealed that both Process (M = 4.62, SD = 0.57) and Output (M = 4.62, SD = 0.59) dimensions achieved the highest ratings (Very Good), while the Input dimension scored



4.47 (SD = 0.69; Good). The Input dimension thus received the lowest mean rating, 0.15 points below the Process and Output dimensions. Detailed results are presented in Table 2.

Table 2 PBL Evaluation Scores by Dimension — Academic Year 2022

Dimension	Mean	SD	Interpretation
Input Factor	4.47	0.69	Good
Process	4.62	0.57	Very Good
Output	4.62	0.59	Very Good
Overall	4.58	0.59	Very Good

Curriculum Instructional Evaluation scores in all four years were at the Excellent level (≥ 4.50), with a four-year grand mean of 4.90. The annual mean rose from 4.85 (2021) to 4.95 (2024), a difference of 0.10 points, with a lower value (4.89) recorded in 2023 and the highest value (4.95) recorded in 2024. The range of annual means was 0.10, and the coefficient of variation was 0.85%, indicating low relative dispersion of the annual mean scores across the four years. Results are presented in Table 3.

Table 3 Instructional Evaluation Scores by Academic Year 2021–2024

Academic Year	Overall Mean	SD	Subject & Content Mean	SD	Self-Directed Learning Mean	SD	Level
2021/2	4.85	0.49	4.85	0.47	4.85	0.51	Excellent
2022/2	4.91	0.35	4.91	0.33	4.92	0.36	Excellent
2023/2	4.89	0.38	4.88	0.40	4.89	0.36	Excellent
2024/1	4.95	0.28	4.95	0.24	4.94	0.33	Excellent

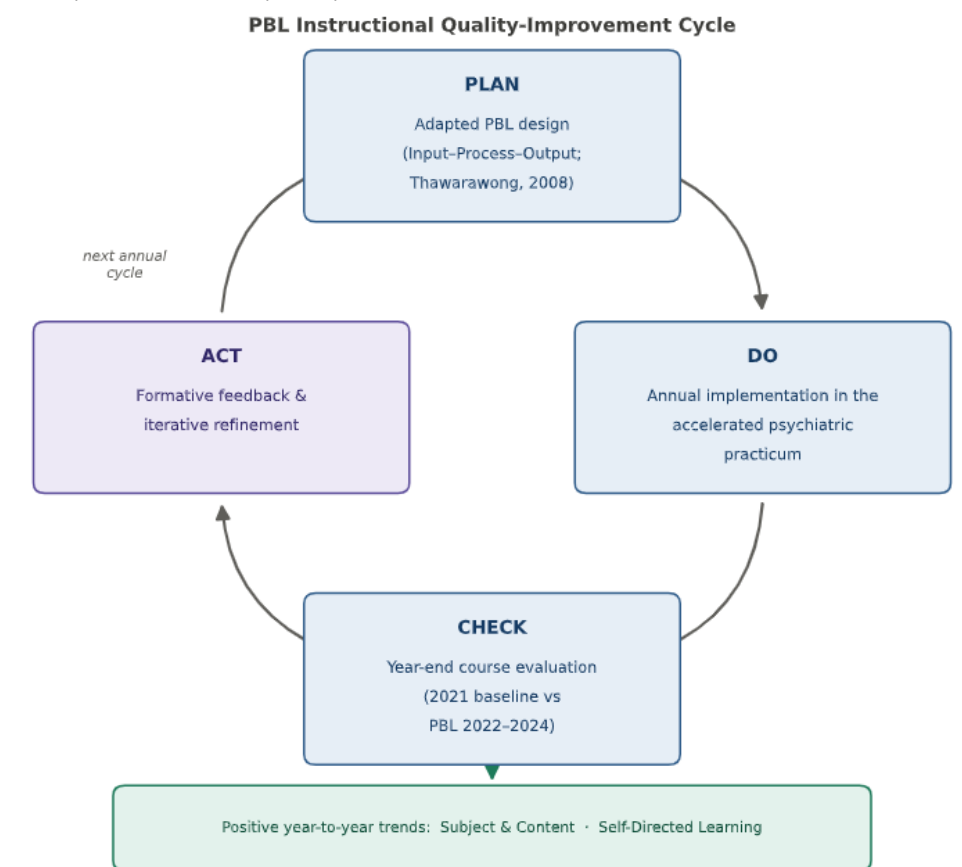
Pearson correlation analysis indicated positive year-to-year trends across all three evaluation dimensions (Table 4). The overall mean score showed the strongest association with the academic-year sequence ($r = 0.868$), followed by Subject and Content ($r = 0.816$) and Self-Directed Learning ($r = 0.791$). These results may suggest a pattern of improvement across the study period, although they should be interpreted cautiously because the analysis is based on four annual mean values from different cohorts. At the item level, mean ratings were higher in the 2024 cohort than in the 2021 baseline cohort for analytical thinking (4.87 to 4.94), problem-solving (4.91 to 4.94), and self-directed learning (4.85 to 4.94).

Table 4 Trend Correlation Coefficients for Teaching and Learning Development (2021–2024)

Assessment Aspect	r	Direction
Overall Average Score	0.868	High positive
Subject and Content Aspect	0.816	High positive
Self-Directed Learning Aspect	0.791	High positive

Body of Knowledge

Rather than restating the study's findings, this section synthesises the novel contribution arising from the study and presents it as a conceptual model (Figure 2). The principal new knowledge is not the individual evaluation scores, but a context-specific, evidence-informed cycle for implementing and iteratively refining PBL within an accelerated (2.6-year) psychiatric and mental health nursing practicum, in which an adapted Input–Process–Output design is linked, through an annual quality-improvement loop, to positive year-to-year trends in students' course evaluations.

**Figure 2** The PBL Instructional Quality-Improvement Cycle

Two distinct sources of evidence underpin this model and should not be conflated. First, the single-year PBL Input–Process–Output evaluation in 2022 (overall $M = 4.58$; Process and Output $M = 4.62$; Input $M = 4.47$) characterised the quality of the inaugural PBL implementation, indicating that process and output elements were already strong, while input-related preparation (resources, case



quality, and student orientation) was the comparatively weakest element at launch. Second, and separately, the Curriculum Instructional Evaluation Questionnaire administered across all four years (annual means of 4.85–4.95) described year-to-year trends in students' course evaluations. Because the two instruments measure different constructs and were administered on different schedules, their scores are reported separately and are not treated as a single continuous measure across time.

The conceptual contribution is best expressed as an iterative quality-improvement cycle. An adapted PBL design is implemented each academic year; year-end course evaluations generate formative evidence; this evidence informs targeted adjustments to case complexity, facilitation, and supporting activities; and the refined design is re-implemented in the following cycle. This loop is consistent with the principles of educational (classroom) action research and the Plan–Do–Check–Act model, and it offers a transferable mechanism for sustaining instructional quality in accelerated nursing programmes.

Figure 2 presents this cycle schematically. The process begins with the adapted PBL design, structured according to the Input–Process–Output framework (Thawarawong, 2008), which was implemented annually within the accelerated psychiatric nursing practicum. Each annual implementation was followed by a year-end course evaluation, comparing the 2021 baseline with the PBL implementation years of 2022 to 2024. The resulting evaluation data informed formative feedback and iterative refinement of the instructional design, following a Plan–Do–Check–Act cycle. This iterative process corresponded with positive year-to-year trends in the Subject and Content and Self-Directed Learning subscales, with insights from each cycle subsequently feeding into the planning of the next annual implementation.

In practical terms, the knowledge generated is that a structured, feedback-driven PBL cycle is feasible and can be sustained in an accelerated, second-degree nursing cohort, and that explicit attention to the Input dimension (resource preparation, case design, and student orientation) at launch is a key lever for subsequent improvement. These insights are intended to guide other institutions implementing PBL in psychiatric nursing practica, rather than to claim causal effects on clinical performance. Thus, the data suggest a positive year-to-year trend in course-evaluation scores, supported by the reported trend coefficients. Because the study compares different student cohorts across academic years rather than the same students over time, these findings are better interpreted as evidence of improving instructional evaluations over time rather than as within-subject change. Taken together, the results suggest that PBL, as implemented in this psychiatric nursing practicum course, was associated with positive evaluations of clinical learning and self-directed learning.

Suggestions for Future Research

Several limitations should be considered when interpreting these findings. First, the outcomes are based on students' self-reported course evaluations, which are susceptible to response bias and social desirability bias and do not directly measure clinical performance. Second, the study compared independent yearly cohorts rather than following the same students over

time, and the cohorts differed across years, most notably the 2024 special and weekend track, so they may not be fully comparable. Third, the absence of a concurrent control group, together with reliance on only four annual mean values, means that the design does not permit strong causal inference regarding the effectiveness of problem-based learning. The trends reported here should therefore be regarded as descriptive and hypothesis generating rather than confirmatory. Based on the findings of this study, the following directions are proposed for future researchers:

1. Expand the study design to include control groups using traditional lecture-based instruction, enabling causal comparison of PBL and conventional pedagogies in psychiatric nursing practicum contexts.
2. Conduct multi-institutional comparative studies across public and private universities, as well as both standard four-year and accelerated programs, to examine whether institutional context moderates PBL effectiveness.
3. Future studies should integrate objective outcome measures, including Objective Structured Clinical Examinations (OSCEs), standardised clinical competency scales, and observational assessments, to complement self-report evaluation data and reduce response bias.
4. Investigate long-term outcomes by tracking graduates' clinical performance in psychiatric nursing roles over time, determining whether PBL-developed competencies are sustained and applied in professional practice.
5. Future research should develop and evaluate culturally adapted psychiatric nursing case scenarios grounded in the Thai sociocultural context, incorporating Buddhist perspectives on mental illness, extended family dynamics, and community-based mental health resources, and assess their impact on learning outcomes.
6. Explore the integration of technology-enhanced PBL modalities, such as virtual simulation and blended-learning platforms, to address the post-COVID-19 shift toward hybrid instruction and expand access to high-quality psychiatric nursing education in diverse institutional settings.

Conclusion

This study suggests that PBL, when systematically implemented and iteratively refined over four consecutive academic years, was associated with consistently positive and gradually improving course-evaluation outcomes in a psychiatric and mental health nursing practicum course within a 2.6-year accelerated Bachelor of Nursing Science programme. Overall evaluation scores rose from 4.85 (baseline, 2021) to 4.95 (2024), with trend correlation coefficients ranging from $r = 0.791$ to $r = 0.868$, indicating positive year-to-year trends across the study period. Students' ratings of analytical thinking, problem-solving, and self-directed learning were also higher in later cohorts, consistent with the broader evidence base for PBL in nursing education (Wei et al., 2024; Ghani et al., 2021). Because the findings are based on self-reported course evaluations from independent cohorts and do not directly test clinical performance, they should be interpreted with caution. Overall, the study suggests that PBL may help strengthen the connection between theoretical learning and practicum experience in psychiatric nursing

education, and it offers practical, experience-based guidance for institutions considering or currently implementing PBL in similar contexts.

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References

- Al Najjar, H., Khalil, A. I. & Bakar, S. A. A. (2021). Nursing students' critical thinking, problem solving and self-directive learning skills: The effect of problem-based learning (PBL) versus lecture-based learning (LBL). *Issues and Development in Health Research*, 5, 100–120.
- Ghani, A. S. A., et al. (2021). Effective learning behavior in problem-based learning: A scoping review. *Medical Science Educator*, 31(3), 1199–1211.
- Jamshidi, H., Hemmati Maslarpak, M., & Parizad, N. (2021). Does problem-based learning education improve knowledge, attitude, and perception toward patient safety among nursing students? A randomized controlled trial. *BMC Nursing*, 20, 70.
- Kim, H. & Kim, B. (2022). Effects of situation-based flipped learning and gamification as combined methodologies in psychiatric nursing education: A quasi-experimental study. *Healthcare*, 10(3), 436.
- Kriki, M. N., et al. (2025). Assessing the relation between problem-based learning methods and critical thinking skills of undergraduate nursing students in mental health sector. *Acta Informatica Medica*, 33(2), 146–151.
- Matlala, S. (2021). Educators' perceptions and views of problem-based learning through simulation. *Curationis*, 44(1), e2094. doi:10.4102/curationis.v44i1.2094
- Perez-Perdomo, A. & Zabalegui, A. (2023). Teaching strategies for developing clinical reasoning skills in nursing students: A systematic review of randomised controlled trials. *Healthcare*, 11(6), 868.
- Putri, S. T. & Sumartini, S. (2021). Integrating peer learning activities and problem-based learning in clinical nursing education. *SAGE Open Nursing*, 7, 23779608211000262.
- Shaygan, M., et al. (2023). How to prepare nursing students for mental health clinical engagement: A qualitative study. *BMC Medical Education*, 23, 672.
- Thawarawong, N. (2008). *An evaluation of problem-based learning in preclinical courses of Doctor of Medicine Program* (Master's thesis). Srinakharinwirot University, Bangkok, Thailand.
- Wei, B., et al. (2024). Effectiveness of problem-based learning on development of nursing students' critical thinking skills: A systematic review and meta-analysis. *Nurse Educator*, 49(3), 115–119.