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The IneRISE-IMAN model: Structural validation of spiritual care learning model for undergraduate nursing students using PLS-SEM

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Research Article

Keywords: spiritual care, nursing education, Islamic nursing, reflective learning, competency-based education, PLS-SEM, Indonesia

Posted Date: November 19th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11187990/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

Spiritual care education frameworks are mostly generic and secular, with limited evidence on which components truly enhance students' competencies. This study evaluated the measurement properties and assumed structural relationships of the IneRISE-IMAN model, an Islamic spiritual care curriculum for undergraduate nursing students. This model was crafted through a needs assessment and expert consensus, emphasizing reflective learning grounded in the Islamic tradition of tafakur as its core mechanism.

Methods

A cross-sectional survey was conducted among 122 fifth-semester undergraduate nursing students at an Islamic university in Indonesia (August–September 2025). Validated questionnaires assessed four process elements: lecturers, curriculum, facilities, and learning environment, along with reflective learning and Islamic spiritual care competency using the IMAN-Scale, which includes 46 items. Data analysis was performed with partial least squares structural equation modeling (PLS-SEM) using SmartPLS 4, focusing on the measurement model (reliability, convergent, and discriminant validity), the structural model (bias-corrected bootstrapping with 5,000 subsamples), and out-of-sample predictive relevance (PLSpredict).

Results

After measurement refinement, all constructs demonstrated reliability (Cronbach's α = 0.861–0.963; AVE = 0.784–0.962). Among the four process elements, only lecturers significantly predicted reflective learning (β = 0.684; $p < 0.001$; $f^2 = 0.302$), while curriculum, facilities, and the learning environment were not significant. Reflective learning strongly predicted competency (β = 0.791; $p < 0.001$; $f^2 = 1.673$) and served as a mediator for the effect of lecturers on competency. The model explained 78.8% of the variance in reflective learning and 62.6% in competency, with good predictive relevance (Q^2predict = 0.766 and 0.537)..

Conclusions

The IneRISE-IMAN model follows a clear causal chain: lecturers promote tafakur-based reflective learning, which in turn enhances Islamic spiritual care competency. Meanwhile, curriculum, facilities, and the learning environment act as enabling conditions. Investing in lecturer capacity and structured reflection is more likely to produce greater competency improvements than investing only in facilities or

curricular documents. These findings provide the first structural evidence base for Islamic spiritual care education and offer a transferable framework for faith-based nursing curricula.

Background

Spirituality is broadly understood as a dynamic and intrinsic dimension of humanity through which individuals seek meaning, purpose, and transcendence, and experience connectedness to self, others, the sacred, or the significant (1). Spiritual care, accordingly, refers to care that recognizes and responds to these needs, encompassing the assessment of spiritual concerns, compassionate presence, and support for patients' sources of meaning and hope; it is widely acknowledged as a core component of holistic nursing (2, 3). In the Islamic context, however, spirituality is not separable from religion: it is anchored in the human relationship with Allah and conceptualized through the unity of body, soul, heart, and spirit (jasad, nafs, qalb, ruh), so that illness is interpreted as a test and a means of drawing closer to God (4). Islamic spiritual care, therefore, extends beyond generic meaning-making to concrete religious practice, including facilitating worship during illness, prayer, dhikr, and faith-based reframing of suffering, which Muslim patients identify as distinct care needs (5, 6).

Despite this recognition, spiritual care remains inconsistently provided worldwide. An international comparison across multiple countries found that nurse-provided spiritual care remains infrequent (7), and recent studies in Muslim-majority settings continue to document a persistent gap between nurses' positive perceptions of spirituality and their actual provision of spiritual care (8, 9). These deficits are frequently traced to pre-registration education: spiritual care continues to occupy a peripheral position in undergraduate nursing curricula (10, 11), and graduating students consistently report only moderate spiritual care skills (12, 13).

Significant progress has been achieved in establishing student learning goals. The EPICC consensus established a European standard for spiritual care education (3), and competency frameworks for pre-registration nurses and midwives have been developed through modified Delphi methods (14). Additionally, an education matrix has identified factors that facilitate or hinder competency development (15). However, three gaps remain.

First, existing frameworks have understandably been designed to be broadly inclusive across belief systems; however, this generality leaves educators with little direction in settings where spirituality is inseparable from religious practice. For Muslim patients in particular, the ability to worship during illness and to find meaning through faith are not supplementary preferences but core spiritual needs (6, 16).

Second, reflection is widely endorsed as a key pedagogy for spiritual care education (17, 18), and established models such as those of Gibbs and Kolb have proven valuable in guiding learners toward improved practice. Their orientation, however, remains largely cognitive and professional, leaving the transcendental dimension central to spiritual care in the Islamic tradition outside their scope (19, 20).

Third, although the literature outlines essential components of an educational model, it provides minimal structural evidence of how these elements interconnect or which elements genuinely influence competency development. Cross-sectional studies indicate correlations between personal qualities, such as spiritual intelligence and self-efficacy, and perceived competency (21, 22) while previous research emphasizes the importance of curricula, facilities, learning environments, and educators (15). Without testing these elements within a cohesive structural model, educators risk misallocating curriculum resources by failing to distinguish the true causes of competency development from those that merely support it.

This study addresses existing gaps by structurally validating the IneRISE-IMAN model (Islamic Nurturing Experience through Reflective-Islamic Values Embedded, Simulated, and Engaged Learning for Internalization, Meaningful, Active Communication, and Nurturing). This model for Islamic spiritual care learning was developed through a three-phase research program in Indonesia, the world's largest Muslim-majority country (23).

The model encompasses process elements such as lecturers, curriculum, facilities, and the learning environment; reflective learning grounded in the Islamic tradition of tafakur as the hypothesized core mechanism; and Islamic spiritual care competency as the outcome, operationalized through the four IMAN dimensions.

In Islamic scholarship, tafakur denotes contemplative reflection undertaken as an act of devotion, through which experience is examined not only cognitively but in relation to God, encompassing self-examination (muhasabah) and the renewal of spiritual commitment (24, 25)In the present model, the tafakur-based reflective cycle was constructed by the research team rather than adopted wholesale: the Gibbs reflective cycle supplied its procedural scaffold, which was then contextualised using the Phase I qualitative findings, in which participants described reflection on encounters with Muslim patients as a process that moved from observing and understanding the spiritual meaning of an experience toward transforming one's perspective and renewing one's commitment as a Muslim nurse. The resulting six-stage cycle, situation description, expression of feelings, self-evaluation, analysis, conclusion, and action planning, was subsequently content-validated and achieved full expert consensus in the Phase II Delphi study (I-CVI = 1.00). What distinguishes it from its generic antecedents is therefore not the number of stages but their orientation: each stage is framed as an act of devotion (tafakur) coupled with self-examination (muhasabah), so that evaluation, analysis, and action planning are directed toward spiritual transformation and the renewal of spiritual commitment rather than technical practice improvement alone.

What remains untested is the structural question: which elements effectively predict reflective learning and, in turn, students' competency? Therefore, this study aimed to evaluate the measurement properties and hypothesized structural relationships of the IneRISE-IMAN model using partial least squares structural equation modeling (PLS-SEM) (26). We hypothesized that each process element would

positively predict reflective learning, and that reflective learning would predict and mediate effects on competency.

Method

Study design and context.

This cross-sectional study serves as the construct-validation component of Phase II of a three-phase research program focused on developing the IneRISE-IMAN model, conducted from January to December 2025. Phase I involved a needs assessment carried out through a systematic review and a qualitative descriptive exploratory study. Phase II established the model's content validity through a two-round e-Delphi study with 22 experts, as documented elsewhere (27). The present study evaluated the measurement and structural properties of the validated model among undergraduate nursing students prior to the quasi-experimental assessment of its impact. This research was conducted at Universitas Aisyiyah Bandung, an Islamic university in West Java, Indonesia, and is reported in accordance with the STROBE guidelines for cross-sectional studies.

Participants and sampling

The population included all students enrolled in the undergraduate nursing program at the study site. Eligible participants were fifth-semester students who had received instruction in Islamic spiritual care and palliative nursing; students on sick or academic leave were excluded. Participants were recruited using purposive sampling. The minimum sample size was calculated in advance with G*Power, assuming a medium effect size ($f^2 = 0.15$), $\alpha = 0.05$, a statistical power of 0.90, and five predictors corresponding to the maximum number of paths directed at an endogenous construct, yielding a required sample of 116. To account for incomplete responses, 122 students were enrolled, exceeding common sample size recommendations for PLS-SEM (28).

Instruments

The model elements and sub-elements operationalized in this study were content-validated in the Phase II e-Delphi study, in which a 71-item questionnaire covering all model elements and sub-elements achieved S-CVI/Ave = 0.94 in Round 1 and universal agreement following targeted revisions in Round 2. Six measurement instruments were then constructed for the present study: the model element questionnaire, the reflective thinking questionnaire, and the IMAN-Scale were developed by the research team from the Delphi-validated sub-element definitions, while self-efficacy, academic resilience, and learning style were assessed using adapted established instruments. Item-level psychometric properties of these instruments are reported for the first time in the present study.

The model element questionnaire consisted of four process elements assessed through student perception surveys. These surveys were developed based on qualitative findings from Phase I and

validated through a Delphi study. The elements included lecturers (20 items covering the Delphi-validated sub-elements of academic qualification, Islamic pedagogical competence, spiritual care teaching and practice experience, and role-model attitude, aggregated into three composite indicators: qualification and pedagogical competence (D1), role modelling (D2), and professional experience (D3)), curriculum (10 items focusing on learning plans, Islamic spiritual care learning materials, learning methods, and learning evaluation), learning environment (11 items addressing peer support, active discussion, and the Islamic academic atmosphere), and facilities (12 items related to classrooms and laboratories, technology support, and learning media). Each item was rated on a five-point Likert scale, and the results were aggregated into composite scores for each sub-element, serving as indicators of their respective constructs (e.g., D1–D3 for lecturers, K1–K3 for curriculum, F1–F3 for facilities, and LK1–LK2 for learning environment, R1-R6 for reflective thinking).

Reflective Thinking Questionnaire: Reflective learning was assessed using a 20-item instrument developed by the research team, adapted from the Gibbs reflective cycle to the Islamic context and to the reflective sub-elements validated in the Phase II Delphi study. The instrument covers six domains, each aggregated into one composite indicator: situation description (R1), expression of feelings (R2), self-evaluation (R3), analysis (R4), conclusion (R5), and action planning (R6). Reflection is framed throughout as tafakur coupled with muhasabah, so that the evaluative, analytical, and action-planning domains are directed toward spiritual as well as professional learning. Items were rated on a five-point Likert scale.

Islamic Spiritual Care Competency (IMAN-Scale): Competency was evaluated using a 46-item self-assessment instrument developed from Phase I qualitative findings. This tool covers the four IMAN dimensions: internalization, meaning, active communication, and nurturing, with responses rated on a five-point Likert scale.

Student attribute instruments. Self-efficacy was measured using a 20-item questionnaire based on Bandura's three domains (magnitude, strength, generality) on a five-point Likert scale. Academic resilience was measured with a 27-item, four-domain instrument (four-point Likert scale; Cronbach's $\alpha = 0.784$). Learning style was identified using a 10-item VARK questionnaire covering visual, aural, read/write, and kinaesthetic modalities. Based on their dominant modalities, students were classified as unimodal (one dominant learning style), bimodal (two dominant learning styles), or multimodal (three or more dominant learning styles) (29, 30). Consistent with the Round 2 Delphi decision, in which learning style was reconceptualized as a pedagogical consideration informing instructional adaptation rather than a student entry criterion, learning style was used descriptively to characterize the sample and was not specified as an indicator of the student construct, which was indicated by self-efficacy and academic resilience. Learning motivation, shown as a student sub-element in the published model, was not assessed in the present study.

Data collection

Data were collected from August to September 2025 through an online survey administered via Google Forms. Participants completed the questionnaires in classroom settings within approximately 40 minutes, with research assistants available to clarify the completion procedures. All responses were checked for completeness upon submission.

Data analysis

Data were analyzed using PLS-SEM in SmartPLS version 4. PLS-SEM was chosen for this study because it is well-suited to developing theories with complex models and moderate sample sizes (26). All constructs were defined reflectively (Mode A).

The measurement model was assessed through several criteria: indicator loadings (≥ 0.70), internal consistency reliability (with Cronbach's alpha and composite reliability both ≥ 0.70), convergent validity (AVE ≥ 0.50), and discriminant validity, which was evaluated using the heterotrait-monotrait ratio of correlations (HTMT < 0.90) (31). Indicator collinearity was examined using variance inflation factors, with a threshold of 10 (32, 33). The measurement model was refined iteratively: constructs or indicators that did not meet reliability or discriminant validity criteria were removed, and highly redundant indicators within reflective constructs were considered for removal, provided that content validity and all measurement criteria remained satisfied (28, 34).

The structural model was assessed using path coefficients obtained through bias-corrected bootstrapping with 5,000 subsamples (two-tailed; significance determined at $t > 1.96$, $p < 0.05$), as well as through coefficients of determination (R^2) and effect sizes (f^2; categorized as small = 0.02, medium = 0.15, large = 0.35). Additionally, out-of-sample predictive relevance was evaluated using the PLSpredict procedure ($Q^2predict > 0$) (35). To investigate the hypothesized mediating effect, we examined the indirect.

Results

Participant Characteristics

A total of 122 fifth-semester undergraduate nursing students participated in the study, of whom 96 were female (78.7%). The mean age of the participants was 20.46 years (SD = 0.80, range = 18–23). Their learning preferences, as assessed by the VARK inventory, were fairly evenly distributed across the following profiles: bimodal (37.7%), multimodal (34.4%), and unimodal (27.9%) (see Table 1).

Table 1
Participant characteristics (N = 122)

Characteristic	n	%
Sex		
a. Female	96	78.7
b. Male	26	21.3
Learning style (VARK)		
a. Unimodal	34	27.9
b. Bimodal	46	37.7
c. Multimodal	42	34.4
Age, years: mean (SD), range	20.46 (0.80)	18–23

Measurement model refinement

The evaluation of the measurement model was conducted in three distinct stages.

In the first stage, all seven constructs were tested. The student construct, however, did not meet the necessary reliability criteria, as indicated by a Cronbach's alpha of 0.147 and a composite reliability (rho_a) of 0.255. This shortcoming was primarily attributed to the weak loading of the academic resilience indicator (0.379). Furthermore, all Heterotrait-Monotrait (HTMT) values exceeded 1.00, ranging from 1.154 to 1.671. The results demonstrated insufficient discriminant validity for the student construct. Consequently, this construct was removed from further analysis (see the supplementary file (a).

In the second stage, the remaining constructs demonstrated satisfactory reliability, with Cronbach's alphas ranging from 0.861 to 0.971 and Average Variance Extracted (AVE) values ranging from 0.784 to 0.962. However, two indicators were identified as highly redundant within their respective reflective constructs: the lecturer's pedagogical qualification and competence (D1), which had a Variance Inflation Factor (VIF) of 14.817 and a loading of 0.984, and the conclusion stage of the reflective cycle (R5), with a VIF of 10.374 and a loading of 0.959, see the supplementary file (b). Both indicators were subsequently removed to minimize redundancy and streamline the model while ensuring adequate content coverage, a refinement deemed permissible for reflectively specified constructs (28, 34).

The third stage culminated in the final model, in which all measurement criteria were successfully satisfied.

Final measurement model

All constructs in the final model exhibited satisfactory internal consistency and convergent validity, with Cronbach's alpha and composite reliability exceeding 0.70, and the average variance extracted (AVE) surpassing 0.50 (see Table 2). The indicator loadings ranged from 0.825 (K1) to 0.981 (LK1, LK2), and all variance inflation factor (VIF) values were below the threshold of 10, with the highest being R3 at 9.078. (32, 33)

Table 2
Reliability and convergent validity of the final measurement model

Construct	Cronbach's α	rho_a	rho_c	AVE
Lecturers	0.929	0.930	0.966	0.934
Facilities	0.933	0.933	0.957	0.882
Competency	0.963	0.964	0.973	0.900
Curriculum	0.861	0.866	0.916	0.784
Learning environment	0.961	0.961	0.981	0.962
Reflective learning	0.962	0.963	0.971	0.869

Discriminant validity, evaluated through the HTMT approach, was satisfactorily achieved for most construct pairs. Notably, all HTMT values involving the competency construct were below the 0.90 threshold (see Table 3). However, three pairs of conceptually related process constructs surpassed this threshold: learning environment lecturers (0.972), lecturers' reflective learning (0.933), and facilities–curriculum (0.919). Given the high composite reliability (ranging from 0.916 to 0.981) and adequate AVEs for all constructs, the final model was retained; this limitation will be addressed in the Discussion section.

Table 3
Discriminant validity (HTMT ratios) of the final model

Facilities	Lecturers	Facilities	Competency	Curriculum	Learning environment
	0.872				
Competency	0.774	0.728			
Curriculum	0.872	0.919	0.740		
Learning environment	0.972	0.866	0.743	0.837	
Reflective learning	0.933	0.797	0.820	0.798	0.871

Structural model

Among the four exogenous process elements, only lecturers were found to significantly predict reflective learning, with coefficients indicating a strong effect (β = 0.684; t = 5.522; p < 0.001). In contrast, the elements of facilities, curriculum, and learning environment did not show significant results (p = 0.608, 0.611, and 0.322, respectively). Reflective learning, in turn, was a strong predictor of competency (β = 0.791; t = 17.526; p < 0.001). The effect sizes further supported this trend: lecturers had a medium-to-large effect on reflective learning (f^2 = 0.302), while the effects of facilities, curriculum, and learning environment were negligible ($f^2 \leq 0.010$). Additionally, reflective learning demonstrated a very large effect on competency (f^2 = 1.673) (see Table 4). The model accounted for 78.8% of the variance in reflective learning and 62.6% in competency. Notably, the indirect effect of lecturers on competency through reflective learning was significant (β = 0.541; [95% CI from output specific indirect effects]), confirming the proposed mediating role of reflective learning.

Table 4
Structural model results

Path	β	SD	t	p	f^2
Lecturers → Reflective learning	0.684	0.124	5.522	< 0.001	0.302
Facilities → Reflective learning	0.055	0.107	0.513	0.608	0.003
Curriculum → Reflective learning	0.050	0.099	0.508	0.611	0.003
Learning environment → Reflective learning	0.126	0.127	0.990	0.322	0.010
Reflective learning → Competency	0.791	0.045	17.526	< 0.001	1.673
Indirect: Lecturers → Reflective learning → Competency.	0.5410	0.101	5.383	< 0.001	
R^2 Reflective learning = 0.788; R^2 Competency = 0.626.Indirect effects estimated with bias-corrected bootstrapping (5,000 subsamples)					

Predictive relevance

Out-of-sample predictive relevance, assessed using PLSpredict, was positive for both endogenous constructs: Q^2predict = 0.766 for reflective learning and 0.537 for competency. The prediction errors were low (see Table 5), indicating strong predictive power.

Table 5
Predictive relevance (PLSpredict)

Construct	Q^2predict	RMSE	MAE
Reflective learning	0.766	0.493	0.356
Competency	0.537	0.690	0.488

In summary, the structural results reveal that lecturers are the primary drivers of reflective learning. Additionally, reflective learning significantly influences Islamic spiritual care competency, aligning with

its proposed role as the key mediating mechanism of the IneRISE-IMAN model.

Discussion

This study presents the inaugural structural validation of the IneRISE-IMAN model and highlights three key findings. First, among the four process elements examined, only lecturers were found to significantly predict reflective learning. Reflective learning emerged as the primary determinant of Islamic spiritual care competency, accounting for 62.6% of its variance with a notably strong predictive relevance. Second, despite significant emphasis during the qualitative phase on the importance of curriculum, facilities, and the learning environment, these factors did not have a substantial structural effect. Finally, student attributes proved to be an ineffective measurable construct and were subsequently excluded from the model. Collectively, these findings reshape the framework of Islamic spiritual care education, illustrating that, rather than a collection of equally weighted components, the model operates through a single causal chain in which lecturers foster reflective learning, which, in turn, enhances competency.

Lecturers as the driving element

The pivotal role of lecturers aligns with evidence that the quality of learning is heavily influenced by educators. Forsbrand et al. (2025) demonstrated that how teachers design and deliver learning experiences plays a critical role in shaping students' reasoning abilities. (36) Additionally, Woodall et al. (2026) found that educators view facilitating genuine reflection as a fundamental responsibility, despite the challenges it presents. (37) From a constructivist perspective, the lecturer functions as a facilitator, mediator, and scaffolder, rather than merely transmitting content. (38, 39) Our measurement refinement introduces a culturally specific dimension to this role. We removed the indicator of formal pedagogical qualification (D1) as it was redundant; its content was already encapsulated by the retained indicators of role modeling and professional experience. Consequently, the final model of the lecturer construct is anchored in exemplary conduct, resonating with the Islamic educational concept of uswah, in which character is developed through the educator's lived example rather than credentials alone (40, 41).

Reflective learning is the core mechanism

The tafakur cycle was constructed rather than borrowed: the Gibbs reflective cycle supplied its procedural scaffold, the Phase I qualitative data supplied its Islamic content, and its six stages achieved full expert consensus in the Delphi study. While it shares its early stages with Gibbs and Kolb in describing, evaluating, and analyzing experience, tafakur extends beyond practice improvement into the transcendental dimension, understanding the spiritual meaning of an experience, transforming one's perspective, and renewing one's spiritual commitment, so that reflection itself becomes an act of devotion. The very large effect of reflective learning on competency ($f^2 = 1.673$) provides the first quantitative support for this religiously grounded conception of reflection and justifies positioning it as the core of the model rather than one strategy among several, consistent with evidence that reflection-based methods enhance students' spiritual well-being and perceptions of spiritual care (17, 18, 42, 43), as well as critical thinking, empathy, and communication (44, 45). The removal of the conclusion-stage

indicator (R5) was a psychometric adjustment, not the elimination of a pedagogical stage: the remaining indicators fully captured the reflective domain (loadings 0.898–0.959; AVE = 0.869), and the intervention retains all six tafakur stages, including drawing conclusions and planning action.

Curriculum, facilities, and environment as enabling conditions

The absence of significant pathways from curriculum, facilities, and learning environment should not be misconstrued as a sign of their irrelevance. We view these elements as enabling conditions, structural prerequisites that facilitate reflective processes without directly contributing to competency development. This interpretation is consistent with the spiritual care education matrix, which identifies academic climate and environmental support as factors that can either facilitate or hinder competency growth, rather than dictate it (15). Additionally, evidence suggests that learning environments influence professional identity and the learning experience through the learning process itself, rather than directly impacting outcomes (46). While a curriculum establishes a structural framework, its effectiveness depends on active, reflective pedagogical practices (17, 47). From a methodological perspective, the homogeneous single-site context restricted the variability of these constructs, resulting in lower path coefficients, while the moderate sample size limited the ability to detect small effects (28).

Student attributes are not direct determinants

Students were one of the seven core elements that achieved full expert consensus in the content validation phase, yet the construct proved unmeasurable as specified here and was removed. This is the first substantive revision that structural testing imposes on the consensus model: expert judgement affirmed that student characteristics matter, but the present data indicate that they do not behave as a coherent latent input construct alongside the process elements. The failure of the student construct (α = 0.147; HTMT > 1.00) contrasts with correlational studies that identify self-efficacy and spiritual intelligence as predictors of spiritual care competency (21, 48). This divergence can be attributed to the study design: in cross-sectional studies, attributes and competencies are assessed simultaneously, leading to apparent associations. However, within a model that outlines the learning process, the structured reflective process accounts for the development of competency, leaving little room for the direct influence of entry attributes. A similar observation was made by O'Connell-Persaud (2019), who found that while students believed they could provide spiritual care, their spirituality did not quantitatively predict their perceived ability to do so (49). It seems that personal attributes serve as inputs whose impact is contingent upon the learning process, rather than functioning as direct determinants. This proposition can be further explored in the program's subsequent quasi-experimental phase.

Theoretical synthesis: convergence on the reflective process

The pattern identified here illustrates a clear causal chain: the educator initiates reflection, which subsequently leads to the development of competency. This is not merely an incidental finding; it is

consistent with the model's three foundational theories. Constructivist learning theory (39, 50), the Person-Centered Nursing Framework (51), and al-Ghazali's perspective on human nature (25, 52) all converge on a pivotal notion: competency in spiritual care is evidenced through ongoing processes rather than mere delivery. These three viewpoints do not merely enhance the findings; rather, each one underscores a distinct aspect of the same mechanism. Together, they elucidate why the structural model adopts its specific form.

From a constructivist standpoint, the primacy of the lecturer over curriculum, facilities, and environment is theoretically expected rather than anomalous. Knowledge is not transmitted but reconstructed by the learner through the reflective reworking of experience (Dewey, 1938) (53, 54), and this reconstruction is socially mediated, advancing when a more knowledgeable other scaffolds the learner across the zone of proximal development (Vygotsky, 1978) (39). Curricular documents and physical facilities furnish the conditions for such mediation but cannot perform it, because only a person can scaffold another person; this is the theoretical reason the three non-personal inputs registered negligible effects ($f^2 \leq 0.010$) while the lecturer did not. The strong path from tafakur to competency further gives quantitative form to Mezirow's (1991) proposition that genuine learning occurs when critical reflection restructures the learner's frame of reference (55). The later stages of the tafakur cycle, transforming perspective and renewing spiritual commitment, are functionally a perspective transformation, and the finding that this reflective construct, rather than any structural input, predicts competency is the structural signature of transformative learning.

The Person-Centered Nursing Framework reflects the same structure from a practice perspective. In this framework, person-centered outcomes are produced through person-centered processes and are influenced, but not directly caused, by the care environment, while the practitioner's own attributes serve as prerequisites (51, 56). The current model aligns with this order: the educational setting, comprising curriculum, facilities, and academic atmosphere, serves as an enabling backdrop; the lecturer's exemplary behavior is a prerequisite; and competency is achieved through a reflective process that connects them. This parallel is analytically significant rather than decorative because it shows that the results are not unique to Islamic spiritual care but reflect a broader pattern of how person-centered capacities develop, in which capacity is mediated through relational processes and does not pass directly from context to outcome.

Al-Ghazali's anthropology supplies the mechanism that the statistical model can only point toward. In his account, the human person is constituted by body, soul, heart, and spirit (jasad, nafs, qalb, ruh), and moral and spiritual capacity is not a fixed endowment but a state cultivated through the disciplined purification of the self (tazkiyat al-nafs), enacted through contemplation (tafakur) and self-examination (muhasabah) (25, 57). This frame accounts for the two most distinctive results. It explains why student attributes failed as a static input construct, since in an al-Ghazalian reading, the self is not a fixed determinant but the very material upon which the reflective process works, so that competency should, and did, load on process rather than on entry traits. It equally explains why the educator proved decisive, since the path of self-purification is classically undertaken under a guide, which renders the lecturer's

role as uswah, a moral exemplar, not incidental pedagogy but the structurally necessary condition of the learner's reflective transformation.

These traditions are not three separate justifications placed side by side; they converge. What constructivism describes as scaffolded reflective reconstruction, the Person-Centered Nursing Framework describes as outcomes mediated through relational process, and al-Ghazali describes as the guided purification of the self all name the same causal logic that the structural model recovered. This convergence strengthens confidence that the chain from lecturer to reflection to competency reflects a genuine formative mechanism rather than a sampling artifact, and it warrants positioning the reflective process, rather than the accumulation of educational inputs, as the theoretical and practical center of Islamic spiritual care education

Strengths and limitations

The strengths of this study include a theory-driven model developed from a systematic qualitative foundation and expert consensus, a pre-determined sample size, and a rigorous two-step PLS-SEM evaluation that incorporates out-of-sample prediction (PLSpredict). However, several limitations warrant attention. First, three pairs of conceptually related process constructs surpassed the HTMT threshold of 0.90, with the most notable being the learning environment and lecturers (0.972). These elevated values likely reflect the genuine interrelatedness of process elements within a single institution, yet they indicate imperfect discriminant validity, suggesting that the affected constructs should be interpreted as closely related aspects of the learning process. Second, the single-site design and homogeneous sample restrict generalizability and limit the variance of contextual constructs. Third, competency was assessed through a validated self-assessment, which may be subject to social desirability bias; the quasi-experimental phase mitigates this by using knowledge tests and observed skills. Fourth, not every element of the published model was represented at the same level of granularity: the Islamic spiritual care content topics validated in the Delphi study were represented within a single composite curriculum indicator rather than modelled separately, the simulated and engaged learning strategies that give the model its name were captured only indirectly through the learning-methods indicator, and support for technological innovation, validated as a learning-environment sub-element, was operationalised here under facilities; this last reassignment may have contributed, alongside the single-site design, to the elevated HTMT values observed among conceptually adjacent process constructs. Lastly, the cross-sectional design limits causal inference; the substantial reflective learning competency coefficient necessitates replication in larger, multi-site, longitudinal studies.

Implications

In the realm of nursing education, the findings indicate that enhancing lecturer capacity encompassing content mastery, reflective facilitation skills, and exemplary spiritual conduct, combined with the institutionalization of structured reflection, is likely to produce greater competency gains than merely investing in facilities or curricular documents. While curriculum, facilities, and an Islamic academic atmosphere are essential enabling conditions, they are insufficient on their own. For faith-based curricula

on an international scale, this model presents a transferable framework: a religiously grounded reflective cycle led by educators as role models, with competency defined in dimensions that resonate with the faith context.

Conclusion

The IneRISE-IMAN model demonstrated commendable measurement properties and a coherent structural framework: lecturers facilitate reflective learning, which, in turn, enhances competency in Islamic spiritual care. Furthermore, the curriculum, facilities, and learning environment function as supportive conditions. These findings offer an evidence-based justification for prioritizing lecturer development and incorporating tafakur-based structured reflection within Islamic spiritual care education.

Declarations

Ethical approval

for this study was granted by the Research Ethics Committee of Universitas Padjadjaran (No. 7/UN6.KEP/EC/2025), and institutional permission for data collection was obtained from Universitas 'Aisyiyah Bandung (No. 114/LPPM/Unisa-Bandung/VII/2025). Clinical trial number: not applicable.

Consent to Participate

All participants received written and verbal information about the study and provided written informed consent. All procedures were conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing Interests

The authors declare that there are no competing interests.

Funding

This research did not receive any specific grant for its conduct. The article processing charge was covered by Universitas Padjadjaran through the Indonesian Endowment Fund for Education (LPDP), on behalf of the Indonesian Ministry of Higher Education, Science and Technology, under the EQUITY Program (Contract Nos. 4303/B3/DT.03.08/2025 and 3927/UN6.RKT/HK.07.00/2025).

Author Contribution

IPD conceptualized the study, designed the IneRISE-IMAN model and the measurement instruments, coordinated data collection, performed the PLS-SEM analysis, and drafted the manuscript. HH supervised the study, contributed to the design of the methodology and the interpretation of the structural model, and revised the manuscript critically for important intellectual content. HR contributed to the design of the measurement instruments, the interpretation of the findings, and the critical revision of the manuscript. TP contributed to the theoretical framing of the model, the interpretation of the results, and the critical revision of the manuscript. NA contributed to the statistical design, the verification of the analysis, and the critical revision of the manuscript. All authors read and approved the final manuscript

Acknowledgement

The authors thank the students who participated and the Faculty of Nursing at Universitas 'Aisyiyah Bandung for their help with data collection. Funding for this publication was provided by Unpad through the Indonesian Endowment Fund for Education (LPDP), on behalf of the Indonesian Ministry of Higher Education, Science and Technology. It is managed under the EQUITY Program (Contract Nos. 4303/B3/DT.03.08/2025 and 3927/UN6.RKT/HK.07.00/2025).

Availability of Data and Materials

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

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Figures

The final measurement and structural (full) model is presented in Figure 1. Path significance is reported in Table 4

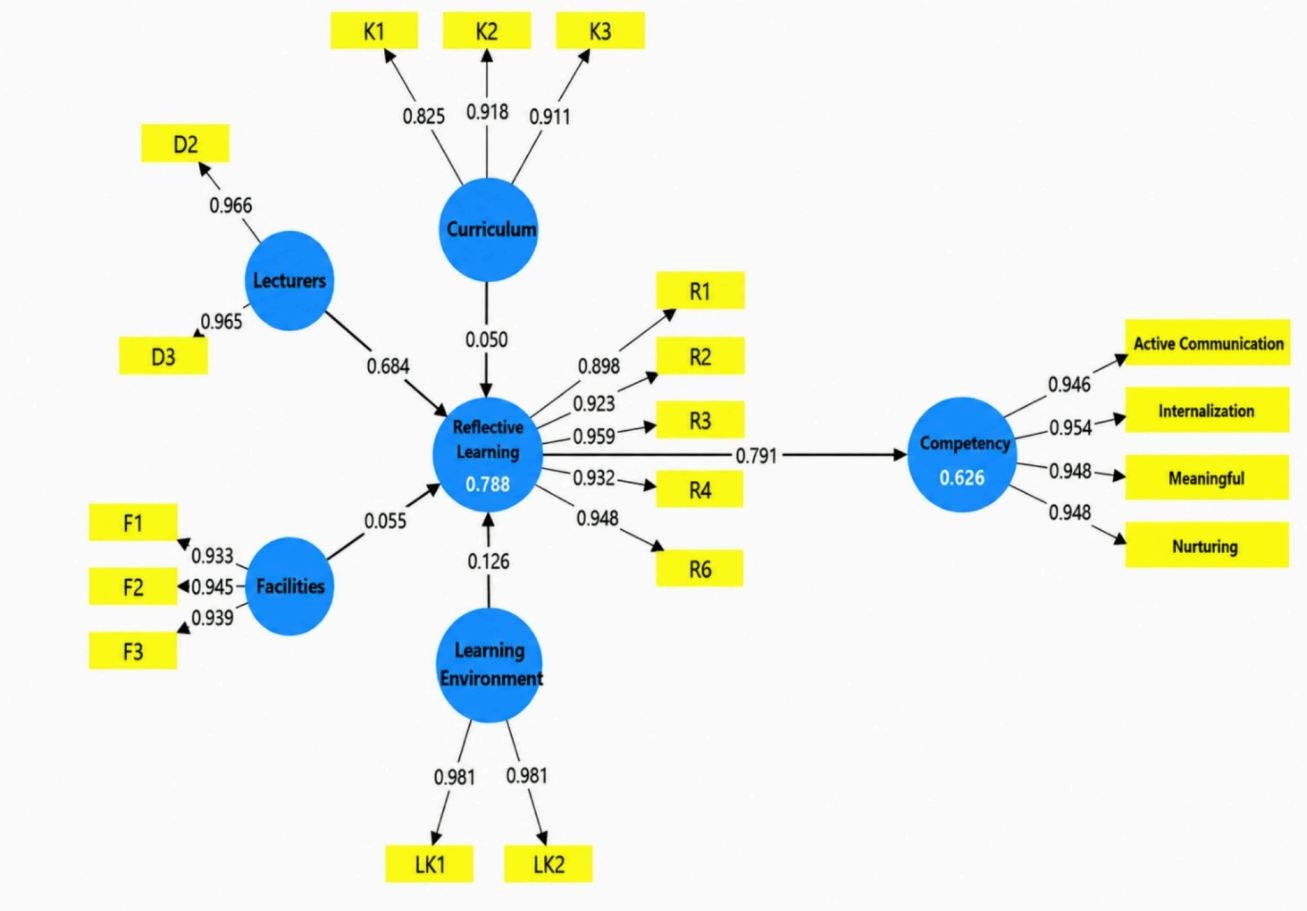


Figure 1

Final structural model of the IneRISE-IMAN constructs with standardized loadings, path coefficients, and explained variance (R^2).

Supplementary Files

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- Thesupplementaryfile.pdf