NSC nursing

2026, Volume 2, Nr. 4 pp 77-98

THE IMPACT OF AN INTERACTIVE MODULE–BASED REFLECTIVE FLIPPED CLASSROOM ON SELF-EFFICACY AND REFLECTIVE THINKING IN SPIRITUAL CARE EDUCATION FOR NURSING STUDENTS IN INDONESIA: A QUASI-EXPERIMENTAL STUDY

Inggriane Puspita Dewi [1]*, Popy Irawati [2], Sharifah Shafinaz Sh Abdullah [3], Soviaturohmah Nur Rizky [4], Resti Febrianti [4], Santy Sanusi [1]

1. Department of Nursing, Faculty of Health Sciences, Universitas Aisyiyah, Bandung, West Java, Indonesia.
2. Department of Nursing, Faculty of Health Sciences, Universitas Muhammadiyah, Tangerang, West Java, Indonesia.
3. Centre for Nursing Studies, Faculty of Health Sciences, UiTM Selangor, Puncak Alam, Selangor, Malaysia.
4. Nursing Department, Faculty of Health Sciences, Universitas Aisyiyah, Bandung, West Java, Indonesia.

* *Corresponding author*: Inggriane Puspita Dewi, Department of Nursing, Universitas Aisyiyah, Bandung, West Java, Indonesia. E-mail: inggriane.puspita@unisa-bandung.ac.id

Original article

DOI: 10.32549/OPI-NSC-139

Submitted: 10 January 2026

Revised: 06 April 2026

Accepted: 10 April 2026

Published online: 17 April 2026

ABSTRACT

Introduction: Spiritual care is essential in holistic nursing; however, nursing students often feel less confident and reflective in providing it. Innovative teaching methods combining active learning and reflection are needed to fill this gap.

Objective: This study evaluated the impact of reflective, flipped-classroom spiritual care training on students' self-efficacy and reflective thinking.

Methods: A quasi-experimental pretest–posttest design with a control group was conducted among 82 undergraduate nursing students from two universities in Indonesia. Participants were allocated to an intervention group (n = 41) or a control group (n = 41) based on existing class enrollment. The intervention consisted of a 16-week reflective flipped classroom supported by an interactive e-module, while the control group received conventional lecture-based instruction. Self-efficacy and reflective thinking were measured at baseline and post-intervention. Data normality was assessed using the Shapiro–Wilk test. Within-group differences were analyzed using the Wilcoxon signed-rank test or paired sample t-test as appropriate, and between-group differences were examined using the Mann–Whitney U test.

Results: Within-group analyses showed statistically significant improvements in self-efficacy and reflective thinking in the intervention group ($p < 0.001$). In the control group, changes in reflective thinking were not statistically significant ($p = 0.062$). Between-group post-test comparisons demonstrated significantly higher self-efficacy and reflective thinking scores in the intervention group than in the control group ($p < 0.001$), with a large effect ($r = 0.67$ for self-efficacy and $r = 0.61$ for reflective thinking).

Conclusion: The findings indicate that a reflective flipped classroom approach is associated with higher self-efficacy and reflective thinking among nursing students in spiritual care education. While causal conclusions cannot be drawn, the results support the educational value of reflective and interactive learning strategies in undergraduate nursing curricula.

Keywords: spiritual care, flipped classroom, reflective learning, self-efficacy, nursing education.

INTRODUCTION

Spirituality is increasingly recognized as a core component of holistic nursing, encompassing individuals' search for meaning, purpose, connection, and transcendence amid health, illness, and suffering [1,2]. In clinical practice, spiritual care plays a crucial role in supporting patients' emotional well-being, coping processes, and psychological adjustment, particularly among individuals facing chronic illness, serious health conditions, and end-of-life situations [3,4].

A growing body of empirical evidence indicates that spiritual care interventions are associated with positive patient outcomes across diverse healthcare settings. Previous studies have reported that spiritual care may contribute to reducing anxiety, enhancing emotional regulation, improving coping strategies, and a greater sense of meaning and connectedness among patients experiencing vulnerability or existential distress [5,6]. These findings underscore nurses' professional responsibility to competently assess and address patients' spiritual needs as an integral part of person-centered care. Despite its recognized importance, spiritual care remains one of the areas in which nurses and nursing students report the lowest levels of confidence. Numerous studies have shown that nurses often feel uncertain, uncomfortable, or inadequately prepared to engage in spiritual care, even when they acknowledge its relevance to quality nursing practice [2,7,8]. This discrepancy suggests a persistent gap between professional expectations and cultural clinical practice. One contributing factor to this gap lies in undergraduate nursing education. Although spirituality is frequently included in nursing curricula, it is often addressed at a conceptual or theoretical level, with limited opportunities for experiential learning, structured reflection, and skill-based application [9,10]. As a result, nursing students may develop theoretical awareness of spiritual care without sufficient confidence or readiness to engage in spiritual conversations and interventions during clinical encounters [11,12]. Research focusing on nursing students highlights

particular challenges related to self-efficacy and reflective capacity in spiritual care. Self-efficacy, defined as an individual's belief in their ability to perform specific tasks [9,10], plays a key role in translating knowledge into action. Students with low self-efficacy may avoid initiating spiritual care interactions, even when they possess adequate theoretical understanding [13,14]. In parallel, reflective thinking is essential for effective spiritual care, as it enables nurses to critically examine their personal values, emotional responses, and professional responsibilities when addressing patients' existential concerns [15,16]. However, reflective practice is not consistently embedded in nursing education. Previous studies have reported that nursing curricula often lack structured reflective activities, standardized guidance, and intentional pedagogical planning to support the development of reflective thinking alongside clinical competence [17,18]. This limitation may hinder students' ability to integrate spiritual care knowledge with self-awareness and ethical sensitivity. To address these educational challenges, active and student-centered learning strategies that intentionally integrate reflection are increasingly recommended. The flipped classroom model, which shifts content delivery to pre-class learning and utilizes in-class time for higher-order cognitive activities, has gained recognition as an effective pedagogical approach in nursing education [19,20]. Additionally, flipped classrooms support self-regulated learning and increase student confidence, which are linked to the development of self-efficacy [21,22]. However, the use of flipped classroom strategies in spiritual care education remains limited, particularly when reflective learning is not intentionally integrated into the teaching approach. Within a flipped classroom framework, interactive learning modules can function as structured pre-class resources that integrate content, reflection, and formative feedback. In this study, an interactive module is conceptualized as a structured instructional unit that combines case-based scenarios, guided reflective questions, and multimedia content to support self-directed and meaningful learning [4,19,23]. In a flipped classroom, it serves as a pre-class tool that prepares students for higher-order activities during in-class sessions, which focus on discussion, reflection, and the application of

spiritual care concepts in simulated or case-based contexts [24].

The interactive and reflective nature of the module aligns with key outcomes in spiritual care education. Active engagement with realistic scenarios and reflection helps develop self-efficacy and reflective thinking, especially in emotional sensitivity and existential care [16,25]. Despite existing spiritual care competency frameworks, guidance on pedagogical methods that foster reflective thinking and self-efficacy through innovative, student-centered learning is limited.

A significant gap remains in nursing education regarding the effective implementation of spiritual care competencies through integrated, reflective, and interactive flipped classroom approaches.

Objective

This study investigates the impact of a reflective flipped classroom, supplemented by an interactive module, on the self-efficacy and reflective thinking of undergraduate nursing students in spiritual care. It is expected that students engaging with this innovative learning model will show notably greater self-efficacy and reflective thinking than those taught through traditional methods approaches.

MATERIALS AND METHODS

Design

A quasi-experimental pre-post-test design with a control group was used to examine differences in self-efficacy and reflective thinking between students who participated in a reflective flipped classroom intervention and those who received traditional instruction.

Participants and Setting

The study population comprised undergraduate nursing students in Indonesia. The sample size calculation was performed using G*Power version 3.1, based on the Wilcoxon–Mann–Whitney test

for two independent groups, with a significance level of 0.05 and a statistical power of 80% [26,27]. This choice was made because the outcome variables were expected to be analyzed using a nonparametric approach if the assumption of normality was violated. A moderate effect size (d = 0.60) was selected based on previous meta-analyses of flipped classroom interventions in nursing education, which report medium to large effects on educational outcomes [26,27]. This conservative estimate was chosen to avoid overestimating intervention effects in applied educational settings.

Based on this calculation, a minimum of 37 participants per group was required. To account for potential participant attrition, an additional 10% was added to the total sample size, resulting in a final sample of 82 participants (41 per group).

A purposive sampling technique was employed. The inclusion criteria were undergraduate nursing students in their third year of academic study who were actively enrolled and willing to participate in the study. The exclusion criteria included undergraduate nursing students who were on academic leave during the data collection period.

The study was conducted at two universities in West Java that had supportive curricula, classrooms, and labs for learning activities and data collection processes.

Group Allocation and Baseline Comparability

Participants were allocated to either the intervention or control group based on their existing class assignments at each institution to minimize contamination between groups. Random assignment was not feasible due to academic scheduling constraints.

To reduce selection bias, both groups were drawn from the same academic year and comparable institutional settings. Baseline comparability was assessed using demographic characteristics (age, gender, and religion), which showed similar distributions between groups (Table 1), supporting demographic equivalence at study entry. However, no baseline psychometric measurements were collected for the outcome variables.

Assessments and Measures

Post-intervention data on self-efficacy and reflective thinking were collected from the intervention group after the instructional intervention concluded. Control group data were collected simultaneously at the corresponding time point in separate classrooms to ensure temporal equivalence and minimize cross-group contamination. The estimated time to complete the questionnaires was 25-30 minutes.

The self-efficacy instrument was adapted from Bandura's (1997) [25] General Self-Efficacy, and reflective thinking was measured using the Level of Reflective Thinking Questionnaire developed by Kember et al. (2000) [28]. Prior to the main study, the translated instruments were tested for validity with a pilot sample of 30 undergraduate nursing students. The instruments were translated into Indonesian using a forward–back translation procedure, followed by expert review to ensure semantic and conceptual equivalence. A pilot test was conducted with 30 undergraduate nursing students to assess clarity and cultural appropriateness.

Reliability testing demonstrated high internal consistency, with Cronbach's alpha coefficients of 0.882 for self-efficacy and 0.984 for reflective thinking. While these values indicate strong reliability, the very high alpha for reflective thinking may also suggest potential item redundancy, which should be considered when interpreting results.

Each questionnaire consisted of 20 items, both the reflective thinking and self-efficacy instruments used the same scoring classification, categorizing scores as very (1) very poor [0,20[, (2) poor [20,40[, (3) average [40,60[, (4) good [60,80[, and (5) excellent (≥80).

Intervention Procedures

The intervention was developed using a constructive alignment framework to ensure coherence among course learning outcomes (CLOs), learning activities, and assessment strategies. It was grounded in the principles of flipped classroom pedagogy and reflective learning. The total

workload was equivalent to 2 academic credit units (approximately 58 hours), delivered over 16 weeks with an average of 4 hours of learning activities per week [9]. The full set of intervention procedures is outlined in Table 1.

Phase	Timing	Learning Activities	Learning Materials / Tools	Purpose
Preparation Phase	Before semester	1. Development of an interactive e-module 2. Alignment of course learning outcomes, activities, and assessment 3. Facilitator briefing (lecturers, chaplain, palliative nurses) 4. Learning management system (LMS) setup	1. Interactive e-module 2. Semester learning plan 3. Google Classroom	Ensure instructional consistency and constructive alignment
Baseline Assessment (Pre-Test)	Week 0 (before intervention)	1. Orientation session and informed consent 2. Administration of baseline questionnaires to both groups	1. Self-efficacy (pre-test) 2. Reflective thinking (pre-test)	Assess baseline equivalence between intervention and control groups
Pre-Class Learning (Flipped Component)	Weekly (≈ 2 hours/week)	1. Independent study using an interactive module 2. Viewing instructional videos 3. Analysis of case-based spiritual care scenarios 4. Completion of guided reflective questions 5. Formative quizzes	1. Interactive e-module 2. Instructional videos 3. Case scenarios 4. Online quizzes	Build foundational knowledge and support self-directed learning
In-Class Learning (Reflective & Active Learning)	Weekly (face-to-face / synchronous sessions)	1. Facilitated case-based group discussions 2. Guided reflective dialogue 3. Role play and communication skills practice 4. Spiritual assessment exercises 5. Practice of religion-based spiritual care (Islamic context)	1. Case discussion guides 2. Reflection prompts 3. Skills demonstration tools	Apply theoretical knowledge, enhance reflective thinking, and strengthen self-efficacy
Reflection and Feedback	Throughout semester	1. Submission of structured reflective journals 2. Facilitator feedback on reflection and participation 3. Ongoing formative assessment	1. Reflective journal templates 2. LMS feedback features	Deepen self-awareness and reinforce reflective learning
Post-	End of semester	1. Completion of the self-	1. Self-efficacy	Evaluate post-

Phase	Timing	Learning Activities	Learning Materials / Tools	Purpose
Intervention Assessment		efficacy questionnaire 2. Completion of the reflective thinking questionnaire	scale 2. Reflective thinking questionnaire	intervention outcomes and compare groups
Control Group (Comparison)	Throughout semester	1. Traditional lecture-based instruction 2. Classroom discussion without structured reflection or flipped classroom elements	1. Lecture materials 2. Standard classroom resources	Provide a comparison condition without reflective flipped learning

Table 1. *Intervention Procedures.*

Data Collection and Statistical Analysis

Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize participants' demographic characteristics and study variables. Instrument reliability was assessed using Cronbach's alpha coefficients.

The Shapiro–Wilk test was used to assess the normality of the distributions of self-efficacy and reflective thinking scores in both the intervention and control groups. In particular, a *p*-value greater than 0.05 indicates that the null hypothesis of normality cannot be rejected.

To examine within-group differences between pre-test and post-test scores in both the intervention and control groups, paired-sample t-tests were used to assess differences between means. When data were not normally distributed, the non-parametric Wilcoxon signed-rank test was applied as an alternative. To compare between-group differences in outcome scores, independent-sample t-tests were used. In cases of non-normal distribution, the Mann–Whitney U test was employed as a non-parametric alternative.

Effect sizes for the Mann–Whitney U test were calculated using the rank-biserial correlation (*r*) derived from the standardized Z value to estimate the magnitude of group differences and were interpreted according to established criteria. A two-tailed p-value < 0.05 was considered statistically significant.

All statistical analyses were performed using SPSS software (version 27).

RESULTS

Participants Characteristic

In Table 2 we have reported the main characteristics of our sample of undergraduate nursing students. Participants in both groups were predominantly in early adulthood. The intervention group had a mean age of 21.51 years (median = 21; range, 19–28), while the control group had a mean age of 20.54 years (median = 20; range, 19–26). In the intervention group, the highest proportion of participants was aged 21 years (29%), whereas in the control group, the majority of participants were aged 20 years (51%). Female participants constituted the majority in both groups. In the intervention group, 71% of participants were female, and 29% were male. Similarly, the control group consisted of 85% female and 15% male participants. All participants in the Islamic religion. Comparable age and gender characteristics across groups indicate baseline demographic homogeneity, thereby supporting the internal validity of the quasi-experimental design.

Characteristics	**Intervention Group**		**Control Group**	
	f	***%***	***f***	***%***
Age (years)				
19	4	10	5	12
20	7	17	21	51
21	12	29	10	24
22	9	22	2	5
23	5	12	1	2
24	2	5	1	2
25	1	2	0	0
26	0	0	1	2
28	1	2	0	0
Gender				
Male	12	29	6	15
Female	29	71	35	85
Religion				
Islam	41	100	41	100
Christianity	0	0	0	0
Buddhist	0	0	0	0
Hinduism	0	0	0	0

Table 2. *Participants Characteristics*

In the intervention group, the Shapiro–Wilk test showed that both pre-test and post-test scores for self-efficacy ($p < 0.0001$) and reflective thinking (pre-test $p = 0.001$; post-test $p < 0.0001$) were not normally distributed. Therefore, non-parametric statistical tests were considered appropriate for within-group analyses in the intervention group. In contrast, in the control group, the Shapiro–Wilk test indicated that pre-test and post-test scores for self-efficacy (pre-test $p = 0.214$; post-test $p = 0.149$) and reflective thinking (pre-test $p = 0.123$; post-test $p = 0.057$) were normally distributed ($p > 0.05$). Accordingly, parametric tests were applied for within-group analyses in the control group (Table 3).

Intervention Group	**Control point**	**n**	***p*-value**
Self-Efficacy	Pre-test	41	< 0.001
	Post-test	41	< 0.001
Reflective Thinking	Pre-test	41	0.001
	Post-test	41	< 0.001
Control Group	**Control point**	**n**	***p*-value**
Self-Efficacy	Pre-test	41	0.214
	Post-test	41	0.149
Reflective Thinking	Pre-test	41	0.123
	Post-test	41	0.057

Table 3. *The Shapiro–Wilk Normality Test*

Table 4 presents within-group comparisons of pre- and post-test scores for self-efficacy and reflective thinking in the intervention and control groups.

Variables	**Group**	**Pre-Test (Mean ± SD)**	**Post-Test (Mean ± SD)**	***p*-value**
Self-Efficacy	Intervention	82.10 ± 9.11	90.32 ± 9.59	< 0.001 [a]
	Control	73.49 ± 8.73	80.15 ± 11.66	< 0.001 [b]
Reflective Thinking	Intervention	80.54 ± 9.19	87.10 ± 9.97	< 0.001 [a]
	Control	73.05 ± 8.19	77.49 ± 12.00	0.062 [b]

Note: a = (Wilcoxon Signed-rank); b = (Paired Sample T-Test)

Table 4. *Pre-Test and Post-Test Comparison within Intervention and Control Groups*

In the intervention group, statistically significant differences were observed between pre- and post-test scores for both self-efficacy and reflective thinking ($p < 0.001$), indicating higher post-test scores than at baseline. In contrast, within the control group, no statistically significant differences were found between pre- and post-test scores for self-efficacy or reflective thinking ($p = 0.062$). These findings suggest different patterns of change over time between the intervention and control groups.

Table 5 further supports these findings through inferential analysis. Nursing students who participated in the reflective flipped classroom showed notably higher self-efficacy scores (mean = 90.32 ± 9.59) than those in the control group (mean = 80.15 ± 11.66), with a difference of 10.17 points ($p < 0.001$). Similarly, reflective thinking scores were substantially higher in the intervention group (87.10 ± 9.97) than in the control group (77.49 ± 12.00), with a difference of 9.61 points ($p < 0.001$). These significant and statistically strong differences suggest a meaningful educational impact rather than a minor effect improvement.

variables	n	mean±SD	mean difference (IC 95%)	*p*-value	Z	Effect size
Self-efficacy (intervention group)	41	90.32±9.59	10.17	<0.001	6.10	*r* = 0.67 large effect
Self-efficacy (control group)	41	80.15±11.66				
Reflective thinking (intervention group)	41	87.10±9.97	9.61	<0.001	5.65	*r* = 0.61 large effect
Reflective thinking (control group)	41	77.49±12.00				

Table 5. *Comparison of Post-Test Self-Efficacy and Critical Reflection Scores Between Intervention and Control Groups (Mann–Whitney U Test).*

Comparison of Post-Test Self-Efficacy and Critical Reflection Scores Between Intervention and Control Groups (Mann–Whitney U Test)

The analysis of effect sizes showed a significant educational benefit from the reflective flipped classroom approach to spiritual care education. The effect sizes were large for both self-efficacy ($r = 0.67$) and reflective thinking ($r = 0.61$), indicating substantial differences between the intervention

and control groups. These results demonstrate that the improvements are both statistically significant and educationally important, indicating a strong enhancement of effective and cognitive skills among nursing students. Reporting effect sizes along with *p*-values is recommended to provide information on the practical significance of the findings and to help compare results across studies [29].

DISCUSSION

This study examined changes in self-efficacy and reflective thinking among nursing students participating in an interactive, module–based reflective flipped classroom compared with those receiving traditional instruction. By incorporating both within-group and between-group analyses, the findings provide a more nuanced understanding of how students' learning outcomes evolved over the intervention period.

Within-group analyses showed that students in the intervention group experienced statistically significant improvements in both self-efficacy and reflective thinking from pre-test to post-test. These findings suggest that participation in a structured learning environment combining flipped classroom strategies and guided reflection was associated with higher post-intervention scores. Such outcomes align with theoretical perspectives that emphasize the role of active engagement and reflective processes in strengthening learners' confidence and cognitive development [25], [28]. Reflective learning activities, such as guided journals and case-based discussions, may help students make sense of complex learning experiences and integrate theoretical knowledge with professional values [15,16]. In contrast, in the control group, only self-efficacy showed a statistically significant pre–post change, while reflective thinking did not. This pattern suggests that conventional lecture-based instruction may support certain aspects of learning, such as perceived confidence, but may be less effective in fostering deeper reflective capacities without explicit reflective structures. Previous studies have similarly reported that the absence of intentional reflective pedagogies can limit

students' development of reflective thinking skills, particularly in professional nursing education contexts [29,30].

Between-group comparisons at post-test further indicated that students in the intervention group reported higher levels of self-efficacy and reflective thinking than those in the control group, with statistically significant differences for both outcomes. These findings align with existing evidence demonstrating that flipped classroom approaches in nursing education are associated with improved learning-related outcomes, including self-efficacy, engagement, and reflective abilities [19,26]. Technology-enhanced flipped learning environments may allow learners to engage with content at their own pace while reserving classroom time for higher-order cognitive activities, which may contribute to these observed differences [24,31,32]. The relevance of these findings is particularly pronounced in the context of spiritual care education. Previous research has identified persistent gaps in nursing students' preparedness, confidence, and competence in delivering spiritual care, often attributed to limited curricular integration and insufficient experiential learning opportunities [3,9]. The reflective flipped classroom approach implemented in this study may offer a pedagogical structure that supports students in engaging with spiritual care content in a more meaningful and culturally grounded manner, particularly within Islamic nursing education contexts [33,34].

Overall, this study contributes to the growing literature on reflective and flipped learning strategies in nursing education by demonstrating differential patterns of change in self-efficacy and reflective thinking across instructional approaches. Future research employing randomized controlled designs, longitudinal follow-up, and qualitative inquiry may further elucidate the mechanisms through which reflective flipped classroom models support the development of nursing students' professional confidence and reflective capacity.

CONCLUSION

This study examined changes in self-efficacy and reflective thinking among nursing students

participating in an interactive, module–based reflective flipped classroom, compared with those receiving traditional instruction. The findings showed statistically significant within-group improvements in both outcomes among students in the intervention group, along with higher post-test scores than in the control group. In contrast, changes in the control group were more limited and inconsistent across outcomes.

Together, these results suggest that integrating reflective learning activities and flipped classroom strategies is associated with more favorable learning outcomes in spiritual care education. Although causal conclusions cannot be drawn from the quasi-experimental design, the findings provide empirical support for the educational value of reflective, interactive pedagogical approaches in undergraduate nursing education.

Implications for nursing education and future research

This study advocates integrating reflective flipped classrooms into undergraduate nursing education, particularly for complex topics such as spiritual care. Activities that involve reflective exercises, interactive modules, and active participation can enhance students' confidence and depth of reflection. Educators could blend these approaches with traditional teaching methods to promote student-centered learning. Utilizing culturally relevant materials, such as Islamic perspectives on spiritual care, can further enhance engagement in contexts where religion plays a significant role. Future research should focus on randomized controlled trials, longitudinal studies, and qualitative methods to investigate the long-term effects and underlying mechanisms of these strategies. Expanding research across diverse settings will provide a more comprehensive assessment of their generalizability and effectiveness in nursing education.

Limitations

This study employed a quasi-experimental design without randomization, limiting causal inference.

The sample was drawn from two institutions within a specific cultural and religious context, potentially limiting generalizability. Outcomes were measured using self-reported instruments, which may be subject to response bias. Additionally, the use of different statistical tests due to variations in data distribution and the absence of long-term follow-up should be considered when interpreting the findings.

Ethical Approval

Ethical approval for this study was obtained from the Ethics Committee of Universitas Aisyiyah Bandung (date approval May 15, 2025; no. 1270/KEP.01/UNISA-BANDUNG/V/20). The study was conducted in accordance with the principles outlined in the Declaration of Helsinki. All participants were informed about the study objectives, procedures, and their right to withdraw at any time, and written informed consent was obtained prior to data collection.

Funding statement

This research was funded by the Majelis Pendidikan Tinggi, Pimpinan Pusat' Aisyiyah, under contract number 036A/PPA/I/IX/2025 and was facilitated by the Institute for Research and Community Service (Lembaga Penelitian dan Pengabdian kepada Masyarakat) at Universitas' Aisyiyah Bandung.

Conflict of interest

The authors declare that they have no competing interests.

Authors' contribution

Inggriane Puspita Dewi: Conceptualization, study design, development of the interactive module, and drafting of the original manuscript.

Popy Irawati: Contribution to spiritual care content expertise, educational evaluation, and critical manuscript revision.

Sharifah Shafinaz Sh Abdullah: Methodology development, data analysis, and critical revision of the manuscript

Soviaturohmah Nur Rizky: Data collection, participant coordination, and data organization

Resti Febrianti: Assistance in data collection, preliminary data processing, and support in manuscript preparation.

Santy Sanusi: Supervision of the flipped classroom implementation, validation of instruments, and manuscript review.

Acknowledgements

The authors appreciate all nursing students who volunteered for this study. They also extend their gratitude to the faculty members and academic staff for their support during the reflective flipped classroom activities.

REFERENCES

1. Taylor EJ. Healing communication: A precision instrument for spiritual care. Semin Oncol Nurs. 2021 Oct 1;37(5). https://doi.org/10.1016/j.soncn.2021.151213
2. Taylor EJ, Pariñas S, Mamier I, Atarhim MA, Angeles L, Aslan H, et al. Frequency of nurse-provided spiritual care: An international comparison. J Clin Nurs. 2023 Feb 1;32(3–4):597–609. https://doi.org/10.1111/jocn.16497
3. Stephens MT, Rochmawati E. The need for palliative care education and training in Liberia and Indonesia: A literature review. Jurnal Aisyah : Jurnal Ilmu Kesehatan. 2022 Feb 8;7(1):277–86. https://dx.doi.org/10.30604/jika.v7i1.881
4. van Leeuwen R, Attard J, Ross L, Boughey A, Giske T, Kleiven T, et al. The development of a consensus-based spiritual care education standard for undergraduate nursing and midwifery students: An educational mixed methods study. J Adv Nurs. 2021 Feb 1;77(2):973–86. https://doi.org/10.1111/jan.14613
5. Komariah M, Hatthakit U, Boonyoung N. Impact of Islam-based caring intervention on spiritual well-being in muslim women with breast cancer undergoing chemotherapy. Religions (Basel). 2020;11(7):1–13. https://doi.org/10.3390/rel11070361
6. Wulandari M, Muhith A. Islamic spiritual care in supporting emotional stability in high care unit patients: A systematic review. Journal of Applied Nursing and Health [Internet]. 2024 Dec 29;6(2):182–92. https://doi.org/10.55018/janh.v6i2.243
7. Alch CK, Wright CL, Collier KM, Choi PJ. Barriers to addressing the spiritual and religious needs of patients and families in the intensive care unit: A qualitative study of critical care physicians. American Journal of Hospice and Palliative Medicine. 2021 Sep 1;38(9):1120–5. https://doi.org/10.1177/1049909120970903
8. Momeni G, Hashemi MS, Hemati Z. Barriers to providing spiritual care from a nurses' perspective: A content analysis study. Iran J Nurs Midwifery Res. 2022 Nov 1;27(6):575–80.

https://doi.org/10.4103/ijnmr.ijnmr_422_21

9. Dewi IP, Haroen H, Agustina HR, Pahria T, Arisanti N, Keawpimon P. Spiritual care competencies among nursing students in the Middle East and Asia: A systematic review. BMC Nurs [Internet]. 2025 Apr 10;24(1):401. https://doi.org/10.1186/s12912-025-03047-3
10. Setiowati D, Said HA. Spiritual care readiness among newly graduated Muslim nurses: A qualitative approach. Islam Transformatif : Journal of Islamic Studies. 2024;8(1):24–44. http://dx.doi.org/10.30983/it.v8i1.8422
11. Linda NSB, Klopper HC, Phetlhu DR. Development of a conceptual framework for teaching-learning of spiritual care in nursing education. Curationis. 2024 Feb 29;47(1). https://doi.org/10.4102/curationis.v47i1.2461
12. Afonso A, Sitefane S, Fabri J, Rabiais I, Caldeira S. Teaching spirituality in nursing: A bibliometric analysis. J Relig Health. 2025. https://doi.org/10.1007/s10943-024-02247-6
13. Jang K, Kim SH, Oh JY, Mun JY. Effectiveness of self-re-learning using video recordings of advanced life support on nursing students' knowledge, self-efficacy, and skills performance. BMC Nurs 20(1):1–10. https://doi.org/10.1186/s12912-021-00573-8
14. Sahebi Z, Barkhordari-Sharifabad M. Spiritual care competency and its relationship with clinical self-efficacy in nursing students. BMC Med Educ. 2023 Dec 1;23(1). https://doi.org/10.1186/s12909-023-04937-3
15. Naicker K, van Rensburg GH. Facilitation of reflective learning in nursing: Reflective teaching practices of educators. Afr J Nurs Midwifery. 2018;20(2):1–15. https://doi.org/10.25159/2520-5293/3386
16. Azizah Khoiriyati, Novita Kurnia Sari. Reflective practice on nursing students: A qualitative study. Indonesian Nursing Journal of Education and Clinic (INJEC). 2021 Sep 7;6(2):201–9. https://doi.org/10.24990/injecv6i2.391
17. El Atmani Z. Exploring the development of reflective practice knowledge in nursing students.

Journal of Research in Environmental and Science Education. 2025 Jan 2;2(1):29–37.https://doi.org/10.70232/jrese.v2i1.8

18. Kapachika M, Baluwa MA, Mbakaya BC, Mhango L, Bvumbwe T. Knowledge, practices and barriers of reflective practice among undergraduate nursing and midwifery students in Malawi. Adv Med Educ Pract. 2025;16:825–36. https://doi.org/10.2147/AMEP.S507766
19. Barranquero-Herbosa M, Abajas-Bustillo R, Ortego-Maté C. Effectiveness of flipped classroom in nursing education: A systematic review of systematic and integrative reviews. Vol. 135, International Journal of Nursing Studies. Elsevier Ltd; 2022. https://doi.org/10.1016/j.ijnurstu.2022.104327
20. Andargeery SY, Bahri HA, Alhalwani RA, Alahmedi SH, Ali WH. Using a flipped teaching strategy in undergraduate nursing education: students' perceptions and performance. BMC Med Educ. 2024 Dec 1;24(1). https://doi.org/10.1186/s12909-024-05749-9
21. Chu TL, Wang J, Monrouxe L, Sung YC, Kuo CL, Ho LH, et al. The effects of the flipped classroom in teaching evidence based nursing: A quasi-experimental study. PLoS One [Internet]. 2019;14(1). https://doi.org/10.1371/journal.pone.0210606
22. Mohseni S, Motlagh MK, Ashrafifard H, Rasti A. The effectiveness of the technology-enhanced flipped class on the learning and satisfaction of nursing students in the immunology course: A quasi-experimental study. Nurse Educ Today. 2024 Oct 1;141. https://doi.org/10.1016/j.nedt.2024.106314
23. Emily Ka Lai Ng. Student engagement in the flipped classroom in nursing education: An integrative review. Vol. 68, Nurse Education in Practice. Elsevier Ltd, 2023. https://doi.org/10.1016/j.nepr.2023.103585
24. Ruzafa-Martínez M, Molina-Rodríguez A, Pérez-Muñoz V, Leal-Costa C, Ramos-Morcillo AJ. Effectiveness of the flipped classroom methodology on the learning of evidence-based practice of nursing students: Quasi-experimental design. Nurse Educ Today. 2023 Sep 1;128.

https://doi.org/10.1016/j.nedt.2023.105878

25. Albert Bandura. Self-efficacy: The exercise of control. New York: Freeman and Company; 1997.
26. Park I, Suh Y. Meta-analysis of flipped learning effects in nursing education. Int J Environ Res Public Health. 2021 Dec 1;18(23). https://doi.org/10.3390/ijerph182312814
27. Kang H. Sample size determination and power analysis using the G*Power software. Vol. 18, Journal of Educational Evaluation for Health Professions. Korea Health Personnel Licensing Examination Institute; 2021. https://doi.org/10.3352/jeehp.2021.18.17
28. Kember D, Leung DYP, Jones A, Loke AY, McKay J, Sinclair K, et al. Development of a questionnaire to measure the level of reflective thinking. Vol. 25, Assessment and Evaluation in Higher Education. 2000. p. 381–95. https://doi.org/10.1080/713611442
29. Cohen J. A power primer. Psychol Bull. 1992;1(July):155.
30. Mamat WHW, Zubaidi EEEE, Shariff NM, Jaafar SNI, Ahmad AC, Hairi NAHM, et al. Spiritual care: What do nursing students say about it? Malaysian Journal of Medicine and Health Sciences. 2025 May 1;21(3):404–11. http://irep.iium.edu.my/id/eprint/122427
31. Setiowati D, Utomo WB, Agustina M. Integration in nursing curriculum for building Islamic nurses' character in Indonesia: a descriptive qualitative approach. Healthc Low Resour Settings. 2023 Dec 28;11(2). https://doi.org/10.4081/hls.2023.11739
32. Baig N. The Islamic theological basis for spiritual care and hospital chaplaincy. In: complexities of spiritual care in plurals: Education, praxis and concepts. De Gruyter; 2022. p. 99–122.https://doi.org/10.1515/9783110717365-005?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle
33. Baig N. Theology of the heart and spiritual care-reflections from an Islamic perspective [Internet]. Copenhagen University; 2007 [cited 2018 Sep 18]. Available from: http://ikstudiecenter.dk/wp-content/uploads/2014/02/Theology-of-the-heart-and-spiritual-

care.pdf

34. Rothman A, Coyle A. Toward a framework for Islamic psychology and psychotherapy: An Islamic model of the soul. J Relig Health. 2018 Oct 1;57(5):1731–44. https://doi.org/10.1007/s10943-018-0651-x