

KNOWLEDGE OF ISLAMIC RELIGIOUS EDUCATION TEACHERS IN IMPLEMENTING THE DEEP LEARNING APPROACH IN PALEMBANG ELEMENTARY SCHOOLS

Rossa Ramadhona¹, Shirley A Padua²

^{1,2}The Philippine Women's University, Manila, Philippines

¹2023t1200@pwu.edu.ph

ABSTRACT

This study aimed to analyze the level of knowledge of Islamic Religious Education (IRE) teachers in implementing the deep learning approach in elementary schools in Palembang, Indonesia. The study focused on a single research variable, namely teacher knowledge, which comprised five dimensions: conceptual understanding, technical competence, curriculum integration skills, pedagogical knowledge, and assessment. A quantitative descriptive survey design was employed. The respondents consisted of 208 elementary IRE teachers in Palembang City. Data were collected using a researcher-developed questionnaire that had undergone expert validation and reliability testing. The data were analyzed using descriptive statistics, particularly mean and standard deviation. The findings indicated that IRE teachers demonstrated a high level of knowledge across all five dimensions. The assessment dimension obtained the highest mean score ($M = 3.20$), followed by technical competence and pedagogical knowledge ($M = 3.17$), curriculum integration skills ($M = 3.16$), and conceptual understanding ($M = 3.14$). These findings suggest that IRE teachers possess a promising cognitive foundation for implementing deep learning. Nevertheless, professional development remains necessary, particularly in strengthening conceptual clarity, designing student-centered learning activities, aligning assessment with deep learning outcomes, and integrating digital resources in meaningful, ethical, and contextually relevant ways. The study recommends practice-based professional development, school-based mentoring, and collaborative teacher learning communities to support the sustainable implementation of deep learning in elementary IRE.

Keywords: deep learning, Islamic Religious Education, teacher knowledge, elementary school, Palembang

A. Introduction

The transformation of elementary education in Indonesia increasingly requires teachers not merely to transmit subject matter, but also to design learning experiences that cultivate conceptual understanding, character formation,

and higher-order thinking skills. Within this context, the deep learning approach has become highly relevant because it emphasizes meaningful, conscious, joyful, and holistic learning experiences. Deep learning encourages students to connect knowledge with real-life situations,

construct meaning through reflection, and apply what they learn in authentic contexts (Fullan et al., 2018; Kementerian Pendidikan Dasar dan Menengah Republik Indonesia, 2025). Therefore, the successful implementation of this approach depends substantially on teachers' knowledge as the primary foundation for instructional decision-making.

The need for deep learning is particularly significant in Islamic Religious Education (IRE). IRE is not limited to the mastery of religious concepts; it also involves value internalization, moral formation, reflective capacity, and the application of Islamic values in everyday conduct. Consequently, IRE teachers require adequate knowledge to transform religious content into learning experiences that are dialogical, contextual, and relevant to students' lives. In elementary schools, this challenge becomes even more complex because teachers must align religious materials with the developmental characteristics of young learners, the learning environment, and the broader direction of national education policy.

In the international literature, deep learning is understood as an effort to redesign learning so that students are able to master core academic content, think critically, solve complex problems, collaborate, communicate effectively, learn how to learn, and develop positive academic mindsets (Vander Ark & Schneider, 2014). Fullan and Langworthy (2014) explain that deep learning emerges when new pedagogies, learning partnerships, digital tools, and meaningful learning tasks work together to produce learning that is deeper and more transferable. The Indonesian policy discourse similarly positions Pembelajaran Mendalam as a pedagogical approach that strengthens meaningful learning, reflective awareness, and holistic student development (Kementerian Pendidikan Dasar dan Menengah Republik Indonesia, 2025; Menteri Pendidikan Dasar dan Menengah Republik Indonesia, 2025).

Teacher knowledge is a critical prerequisite for every instructional innovation. In the context of deep learning, teacher knowledge cannot be reduced to definitional knowledge alone. It includes conceptual

understanding of deep learning, technical competence in using instructional and digital tools, curriculum integration skills, pedagogical knowledge, and assessment literacy. Without adequate knowledge in these areas, deep learning may be reduced to a policy slogan or a superficial label for routine classroom activities.

Theoretically, the construct of teacher knowledge in this article is informed by pedagogical content knowledge, technological pedagogical content knowledge, digital competence frameworks, and constructive alignment. Shulman (1986) conceptualized teacher knowledge as the integration of subject matter and pedagogy. Mishra and Koehler (2006) extended this perspective through the technological pedagogical content knowledge framework, which explains that technology integration requires teachers to connect technology, pedagogy, and content in meaningful ways. Biggs (1996) further emphasized the importance of alignment among learning outcomes, learning activities, and assessment. These perspectives provide a strong

conceptual basis for analyzing IRE teachers' knowledge of deep learning.

In elementary school practice, a frequent challenge lies in the gap between teachers' general familiarity with the term deep learning and their operational capacity to implement it in lesson planning and classroom instruction. Teachers may report that they understand deep learning, yet they may still require support in designing student-centered activities, developing reflective learning tasks, integrating digital resources, and constructing assessment instruments that measure deeper understanding. This issue indicates the need to examine teacher knowledge empirically rather than assuming that policy dissemination automatically results in pedagogical readiness.

In Palembang City, elementary IRE teachers occupy a strategic position because they connect national education policy, the characteristics of elementary learners, and the contextual demands of religious education. As a major city in South Sumatra, Palembang has diverse elementary school contexts, including variations in school resources, teacher experience,

access to professional development, and digital infrastructure. These contextual realities make it important to investigate the extent to which IRE teachers possess knowledge of deep learning implementation.

Based on this background, the present article focuses on one main variable: the knowledge of IRE teachers in implementing the deep learning approach in elementary schools in Palembang. The single-variable focus was selected to ensure a sharper and more coherent analysis, rather than expanding the discussion to other constructs such as attitudes, intention, or implementation practices. Accordingly, the purpose of this study was to describe and analyze the level of IRE teachers' knowledge of deep learning implementation across five dimensions: conceptual understanding, technical competence, curriculum integration skills, pedagogical knowledge, and assessment.

B. Research Method

This study employed a quantitative approach with a descriptive survey design. This design was considered appropriate because the study sought to describe the level

of IRE teachers' knowledge of the implementation of the deep learning approach based on numerical data collected through a questionnaire. Creswell and Creswell (2018) explain that survey research is suitable for describing tendencies, attitudes, or characteristics of a population based on data obtained from a sample of respondents. In this study, the survey design was not intended to test causal relationships, but to provide an empirical profile of teacher knowledge.

The respondents consisted of 208 elementary Islamic Religious Education teachers in Palembang City, South Sumatra, Indonesia. They were active IRE teachers at the elementary school level and agreed to complete the research questionnaire. Respondent selection considered their direct involvement in teaching IRE and their relevance to the implementation of the deep learning approach in elementary education. The respondent profile was described using demographic information, including age, sex, educational attainment, and teaching experience.

The research instrument was a questionnaire measuring IRE teachers' knowledge of deep learning

implementation. The instrument was developed based on five dimensions of knowledge: conceptual understanding, technical competence, curriculum integration skills, pedagogical knowledge, and assessment. Each dimension consisted of indicators related to the ability to understand, plan, facilitate, and assess learning in line with the principles of deep learning. The response format used a four-point Likert scale to minimize neutral responses and encourage respondents to indicate their level of agreement more clearly.

Content validity was established through expert judgment. The validators reviewed the alignment between indicators and the knowledge construct, the clarity of item wording, and the readability of the instrument. Following the validation process, the instrument was revised to ensure stronger alignment with the context of elementary IRE. A reliability test was then conducted to examine the internal consistency of the instrument. The results indicated that the questionnaire was sufficiently reliable for data collection.

Data were analyzed using descriptive statistics, particularly mean and standard deviation. The mean scores were interpreted using the following categories: 3.50-4.00 = Very High Knowledge, 2.50-3.49 = High Knowledge, 1.50-2.49 = Moderate Knowledge, and 1.00-1.49 = Low Knowledge. In this English article, the interpretation labels are presented as Very High, High, Moderate, and Low. The analysis focused on identifying the general pattern of teacher knowledge across the five dimensions and examining the strongest and weakest indicators in each dimension.

Research ethics were maintained through informed participation, confidentiality of data, and aggregate reporting of findings. Individual respondent identities were not disclosed in the article. All data were used solely for academic purposes and for the improvement of IRE learning quality in elementary schools. Through these procedures, the study sought to ensure that data collection was conducted responsibly and respectfully.

C. Results and Discussion

This section presents the research findings on the level of IRE teachers' knowledge in implementing the deep learning approach. The presentation begins with the respondent profile to provide the general context of the study, followed by the results for the five dimensions of teacher knowledge. The discussion does not merely report numerical results; it interprets the findings in relation to the theoretical framework, the context of IRE, and the professional development needs of elementary teachers.

Table 1 Respondent Profile

Category	Subcategory	Frequency	Percentage (%)
Age	25 years and below	20	9.62
	31-35 years	105	50.48
	41-45 years	61	29.33
	51 years and above	22	10.58
	Total	208	100.00
Sex	Female	124	59.62
	Male	84	40.38
	Total	208	100.00
Educational attainment	Bachelor's degree	143	68.75
	Master's degree	53	25.48
	Doctoral degree	12	5.77
	Total	208	100.00
Years of teaching IRE	Less than 1 year	21	10.10
	1-5 years	68	32.69
	6-10 years	81	38.94
	More than 10 years	38	18.27

Category	Subcategory	Frequency	Percentage (%)
	Total	208	100.00

Source: Processed primary data, 2025

The respondent profile shows that the largest group consisted of teachers aged 31-35 years, totaling 105 respondents or 50.48%. This indicates that most teachers were in the early-to-middle stage of their professional careers. At this stage, teachers generally possess sufficient classroom experience while still having substantial opportunities for professional growth. This profile is relevant because the implementation of deep learning requires teachers who are willing to learn, adapt, and redesign their instructional practices.

In terms of educational attainment, most respondents held a bachelor's degree, totaling 143 teachers or 68.75%, followed by 53 teachers with a master's degree or 25.48%, and 12 teachers with a doctoral degree or 5.77%. This composition indicates that IRE teachers generally had adequate formal academic qualifications as a foundation for understanding educational innovation. However, academic qualification alone does not automatically guarantee operational

knowledge of deep learning. Therefore, empirical measurement remains necessary to determine teachers' actual knowledge profile.

Table 2 Summary of IRE Teachers' Knowledge Level of Deep Learning Implementation

Knowledge Dimension	Mean	S.D.	Interpretation
Conceptual understanding	3.14	0.430	High
Technical competence	3.17	0.433	High
Curriculum integration skills	3.16	0.429	High
Pedagogical knowledge	3.17	0.434	High
Assessment	3.20	0.410	High
Overall mean	3.17	0.427	High

Note: 3.50-4.00 = very high; 2.50-3.49 = high; 1.50-2.49 = moderate; 1.00-1.49 = low.

The main results presented in Table 2 indicate that all dimensions of IRE teachers' knowledge were in the high category. The assessment dimension obtained the highest mean score of 3.20 with a standard deviation of 0.410. Technical competence and pedagogical knowledge both obtained a mean score of 3.17, while curriculum integration skills obtained a mean of 3.16. Conceptual understanding obtained the lowest mean score, although it remained in the high category, with a mean of 3.14. Overall, the grand mean was 3.17, indicating a high level of knowledge.

These findings should be interpreted carefully. A high category does not mean that all aspects of implementation have been fully achieved. Rather, it indicates that

teachers possess an initial cognitive readiness to engage with deep learning. Fullan et al. (2018) emphasize that deep learning requires changes in learning culture, teacher-student relationships, learning design, and assessment. Therefore, teacher knowledge must be further developed into practical competence through continuous support, mentoring, and professional learning communities.

From the perspective of deep learning, the high knowledge scores suggest that teachers are cognitively prepared to guide students from surface-level content acquisition toward deeper understanding and transfer of knowledge. Chi and Wylie (2014) explain that student engagement ranges from passive, active, and constructive to interactive forms of learning. Deep learning requires movement toward constructive and interactive engagement, in which students generate meaning, connect ideas, ask questions, and collaborate in solving problems. Teachers require strong knowledge to design these forms of engagement intentionally.

Table 3 Highest and Lowest Indicators in Each Knowledge Dimension

Dimensi	Posisi	Indicator	Mean	S.D.	Interpretation
Conceptual understanding	Highest	Understanding the role of critical thinking in deep learning	3.22	0.727	High
	Lowest	Understanding the definition and objectives of deep learning	2.97	0.680	High
Technical competence	Highest	Integrating multimedia and understanding the role of technology in deep learning	3.22	0.657-0.720	High
	Lowest	Using digital tools to support deep learning	3.02	0.705	High
Curriculum integration skills	Highest	Connecting Islamic values and assessment with deep learning objectives	3.25	0.685-0.697	High
	Lowest	Aligning deep learning activities with the curriculum	3.04	0.785	High
Pedagogical knowledge	Highest	Encouraging self-directed learning	3.24	0.686	High
	Lowest	Designing student-centered deep learning activities	3.05	0.781	High
Assessment	Highest	Involving students in self-assessment	3.33	0.680	High
	Lowest	Assessing deep learning achievement	3.09	0.690	High

Source: Processed primary data, 2025

In the conceptual understanding dimension, teachers obtained a high mean score of 3.14. The highest indicator was knowledge of the role of critical thinking in deep learning, with a mean score of 3.22. This finding suggests that teachers relatively understood that deep learning is associated with students' ability to reason, analyze, and evaluate information. The lowest indicator was understanding the definition and purpose of deep learning, with a mean score of 2.97. Although still categorized as high, this result indicates that conceptual clarification remains necessary.

In the context of IRE, conceptual understanding must go beyond knowing terminology.

Teachers need to understand how concepts such as tawhid, morality, worship, Islamic history, and socio-religious values can be studied through reflective and contextual learning experiences. Bråten and Skeie (2020) argue that deep learning in religious education requires students to engage with meaning, interpretation, and worldview-related understanding. Thus, IRE teachers' conceptual knowledge should enable them to connect religious content with students' lived experiences and moral reasoning.

In the technical competence dimension, the mean score of 3.17 indicates that teachers had a high level of knowledge regarding the use of technology in deep learning. The highest indicators were related to multimedia integration and understanding the role of technology, while the lowest indicator concerned the use of digital tools to support deep learning. This pattern shows that teachers may understand the value of technology in general but may still require practical guidance in selecting and applying specific digital tools for learning design.

This finding is consistent with Basilotta-Gómez-Pablos et al. (2022), who explain that teachers' digital competence should not be measured only by the ability to operate devices, but also by pedagogical capacity to select and integrate technology according to learning objectives. In IRE, technology should not merely function as a medium for displaying materials. It can support reflection, collaborative discussion, digital storytelling, ethical inquiry, formative assessment, and students' documentation of learning. Therefore, technical competence must be developed in relation to pedagogical and religious education goals.

In the curriculum integration skills dimension, teachers obtained a mean score of 3.16. The highest indicators were teachers' familiarity with Islamic values in the deep learning approach and assessment aligned with deep learning objectives, each with a mean score of 3.25. This indicates that teachers perceived compatibility between deep learning and the value orientation of IRE. The lowest indicator was designing integrated lesson plans, which obtained a mean score of 3.04. This

suggests that lesson planning remains an area requiring further support.

Curriculum integration skills are crucial because deep learning should not be positioned as an additional activity outside the curriculum. Instead, it must be embedded in lesson planning through clear objectives, meaningful activities, and assessment tasks that demonstrate deeper understanding. The Indonesian curriculum framework has increasingly emphasized deep learning as part of the basic curriculum orientation (Menteri Pendidikan Dasar dan Menengah Republik Indonesia, 2025). Therefore, IRE teachers need to translate curriculum policy into instructional scenarios that are feasible, contextual, and consistent with the characteristics of elementary learners.

In the pedagogical knowledge dimension, teachers obtained a mean score of 3.17. The highest indicator was the ability to encourage self-directed learning, with a mean score of 3.24. The lowest indicator was the ability to design student-centered deep learning activities, with a mean score of 3.05. This finding indicates that teachers were relatively aware of

the importance of learner autonomy, yet still needed to strengthen their knowledge of how to design activities that position students as active constructors of meaning.

Fullan and Langworthy (2014) emphasize that new pedagogies position teachers and students as learning partners. In this relationship, teachers do not lose their role; rather, they transform their role into that of learning designers, facilitators, activators, and moral guides. In IRE, teachers remain important role models and value references, but they must also create space for students to ask questions, reflect, collaborate, and apply religious values in real situations. This balance between guidance and student agency is a key challenge in pedagogical knowledge for deep learning.

In the assessment dimension, teachers obtained the highest score, with a mean of 3.20. The highest indicator was involving students in self-assessment, with a mean score of 3.33. This suggests that teachers had a good understanding of the importance of student reflection on their own learning process. However, the lowest indicator concerned

assessing students' ability to connect Islamic values with real-life situations, with a mean score of 3.11. This indicates that assessment practices still need to be strengthened so that they measure not only recall but also interpretation, application, and value-based reasoning.

Assessment is a central component of deep learning because it determines what kinds of learning evidence are considered meaningful. If assessment focuses only on memorization, teachers and students may be drawn back into surface learning. Conversely, when assessment measures students' ability to explain meaning, apply values, solve contextual problems, and reflect on ethical choices, assessment can become a driver of deep learning. Hattie and Donoghue (2016) argue that effective learning strategies are closely related to the level of learning expected and the type of learning evidence collected.

Overall, the pattern of findings reveals a relatively balanced profile of teacher knowledge. None of the dimensions fell into the moderate or low category. This finding is an important asset for the implementation

of deep learning in Palembang elementary schools. However, conceptual understanding and curriculum integration skills were slightly lower than assessment, technical competence, and pedagogical knowledge. This pattern indicates that teachers may be more familiar with practical aspects than with the conceptual and structural integration of deep learning into curriculum planning.

From a professional development perspective, the findings suggest the need for a staged training design. The first stage should focus on conceptual clarification, including the distinction between deep learning, ordinary active learning, project-based learning, and technology-assisted learning. The second stage should focus on lesson design, particularly how to formulate learning objectives, construct meaningful activities, and select assessment evidence. The third stage should involve classroom-based mentoring so that teachers can test, revise, and reflect on their learning designs.

OECD (2020) and the Education Endowment Foundation (2021) emphasize that effective

teacher professional development cannot rely solely on one-shot seminars. It requires a clear content focus, modeling, practice, feedback, and follow-up. Based on the findings of this study, IRE teachers need professional development that is concrete, contextual, and closely related to classroom problems. Such development should include examples of IRE lesson plans, reflective activities, rubrics, digital resources, and assessment tasks that correspond to deep learning principles.

The direction of professional strengthening should also consider current evidence on teacher development. Desimone (2009), Darling-Hammond et al. (2017), and Sims and Fletcher-Wood (2021) highlight that effective professional development requires content focus, active learning, coherence, sufficient duration, and collective participation. These principles are highly relevant to IRE teachers because deep learning involves not only new terminology but also changes in instructional design, classroom interaction, assessment, and teacher beliefs about learning.

A practical implication of this study is the need for deep learning modules specifically designed for elementary IRE. Such modules should not only contain theoretical explanations, but also examples of learning objectives, activity scenarios, reflection sheets, assessment rubrics, and simple projects aligned with IRE content. For example, in a lesson on honesty, students could analyze real-life situations, discuss moral dilemmas, create reflective journals, and design small campaigns that promote honest behavior in school. Such activities would make religious learning more meaningful and applicable.

In addition to modules, schools and IRE teacher working groups need to develop professional learning communities. These communities can serve as spaces for sharing lesson plans, discussing classroom difficulties, testing assessment rubrics, and reflecting on practice. Fullan et al. (2018) emphasize that learning transformation requires collaborative culture rather than isolated individual effort. Therefore, the high level of teacher knowledge identified in this study should be

expanded through collective learning so that it can become classroom practice.

Thus, the finding that IRE teachers had a high level of knowledge should not be interpreted as the end point of professional development. It should be understood as a strong starting point for transforming instructional practice. Teachers already possess cognitive capital, but this capital must be strengthened through continuous professional learning, institutional support, and practical resources that enable deep learning to be implemented sustainably in elementary IRE.

D. Conclusion

Based on the findings, it can be concluded that the knowledge of Islamic Religious Education teachers in implementing the deep learning approach in elementary schools in Palembang was in the high category. The five dimensions analyzed in this study—conceptual understanding, technical competence, curriculum integration skills, pedagogical knowledge, and assessment—were all categorized as high. The assessment dimension obtained the

highest mean score, while conceptual understanding obtained the lowest mean score, although it remained within the high category.

These findings indicate that IRE teachers possess a promising cognitive foundation for implementing deep learning. Nevertheless, the results also confirm that professional strengthening remains necessary, particularly in conceptual clarification, student-centered activity design, curriculum alignment, authentic assessment, and meaningful digital integration. The high level of teacher knowledge should therefore be viewed as a foundation that must be developed into consistent classroom practice.

This study recommends that professional development for IRE teachers be conducted through practice-based training, school-based mentoring, and collaborative teacher learning communities. Training materials should be developed specifically for IRE by providing lesson design examples, activity scenarios, assessment rubrics, and digital resources aligned with the principles of deep learning. Future studies may expand the analysis by examining the

relationship between teacher knowledge, attitudes, intention, and actual classroom implementation, or by employing qualitative and mixed-method designs to explore how teachers translate knowledge into practice.

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