



# A Descriptive Study of Teachers' Pedagogical Competence Based on the Indonesian Madrasah Competency Assessment (AKMI)

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**Abstract:** The purpose of this study is to analyze how teachers' pedagogical competence contributes to the implementation of the Indonesian Madrasah Competency Assessment (AKMI) program and its influence on students' literacy performance. This research employs a descriptive-exploratory qualitative design using multiple case study sites in three districts: Kuningan, Majalengka, and Ciamis across the MI, MTs, and MA levels. Qualitative data were collected through in-depth interviews, observations, and document analysis, while quantitative data from teacher pedagogical competence questionnaires and student AKMI report cards were used as supporting materials to strengthen the interpretation of the qualitative findings. The results show that AKMI training (BIMTEK) has been implemented adequately, enabling teachers to apply literacy-based lesson planning and contextual learning strategies. Teachers reported gains in understanding differentiated learning and the use of AKMI reports, although several challenges remain—particularly limited conceptual mastery, insufficient dissemination, tight implementation schedules, and constraints in online training. The analysis also indicates a tendency that higher pedagogical competence is aligned with better student literacy outcomes, although the relationship is not yet strongly consistent across levels. In conclusion, pedagogical competence plays an essential role in supporting the effectiveness of AKMI implementation, yet continuous mentoring and strengthened conceptual training are required to optimize program outcomes.

**Keywords:** AKMI; Multi-site case study; Pedagogical competence; Student literacy

## Introduction

Competency assessment is an essential process in evaluating the extent to which educational objectives are achieved at the institutional and classroom levels (Krstikj et al., 2022; Mohan, 2023). In the context of Indonesian madrasahs, each institution has a distinct vision and mission, resulting in varied expectations regarding competency development. The Indonesian Madrasah Competency Assessment (AKMI), introduced in 2021, serves as a national benchmark for measuring students' literacy abilities and providing evidence-based information to improve instructional practices (Satori et al., 2025).

Pedagogical competence plays a crucial role in ensuring that literacy-oriented learning can be

implemented effectively (Fauyan et al., 2023; Romli et al., 2024). Teachers with strong pedagogical skills are better able to design contextual learning experiences, select appropriate instructional strategies, and respond to students' diverse characteristics (Abu-Rasheed et al., 2023; Soghomonyan & Karapetyan, 2023). However, despite AKMI being implemented nationally, there is still limited empirical understanding of how far teachers' pedagogical competence actually contributes to the effectiveness of AKMI and how this competence is reflected in students' literacy outcomes across different madrasah levels (Anwar et al., 2024; Hikamudin & Suryadi, 2025; Novebri & Samosir, 2024).

This study offers novelty by integrating multi-site qualitative analysis with quantitative support from AKMI report cards and teacher competency

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questionnaires to comprehensively examine the relationship between pedagogical competence and AKMI implementation (Millah et al., 2022; Zarkasi et al., 2025). Previous studies have discussed pedagogical competence or literacy performance separately, but research connecting the two specifically within the AKMI ecosystem remains scarce (Hidayati & Amar, 2023).

This research is important because the success of AKMI does not depend solely on assessment tools but also heavily relies on teachers' ability to interpret and integrate AKMI results into classroom instruction. Without understanding this link, policies and training programs may fail to improve learning outcomes. Moreover, identifying pedagogical gaps helps madrasahs and the Ministry of Religious Affairs to design targeted capacity-building initiatives, ensuring that literacy improvement efforts are sustainable and systematically supported.

## Method

This type of research is a descriptive-exploratory qualitative study, using a multi-site case study approach. This study was conducted to explore in depth how teachers' pedagogical competence, particularly based on the seven main components according to Suryana (2015), contribute to the implementation of the AKMI program and the literacy skills of students.

Qualitative research was chosen because it is able to explore the meanings, perceptions, experiences, and strategies of BIMTEK teachers in applying the results of AKMI training to classroom practice, as well as to reveal the obstacles and opportunities in the implementation of the program holistically (Arikunto, 2018; Sugiyono, 2022).

The population in this study includes all AKMI madrasah MI, MTS, and MA in the regions of Kuningan

with 42 madrasahs, Majalengka with 53 madrasahs, and Ciamis with 31 madrasahs in 2024.

To measure the level of achievement in this research, the following data collection tools are required: 1) The BIMTEK AKMI Teacher Response Questionnaire is used to measure pedagogical competence. Responses were collected via Google Form. 2) The AKMI madrasah report card is student assessment data regarding literacy in numeracy, language, socio-cultural literacy, and science literacy. The instrument validation sheet was filled out by validators who are experts and teacher practitioners. 3) The type of interview use was a structured interview, limited to questions intended to further explore the information to be obtained, namely regarding the 7 pedagogical competencies and the results of the implementation of the AKMI program in madrasahs. The research results include: (1) Results of AKMI activities based on interviews and AKMI reports, (2) Analysis of constraints in the implementation of the AKMI program, (3) Pedagogical analysis of students' literacy competencies in the AKMI madrasah program in the regions of Kuningan, Ciamis, Majalengka.

## Results and Discussion

### AKMI Results

The implementation of the Madrasah Competency Assessment (AKMI) across the three districts shows that BIMTEK teachers generally understood the purpose of AKMI and reported several improvements in literacy-oriented learning. Interview transcripts indicate that teachers benefited from the training, especially in understanding contextual learning, differentiated instruction, and the use of AKMI report cards as diagnostic tools. One teacher stated, "AKMI helped us identify students who need additional support, so planning became more targeted."

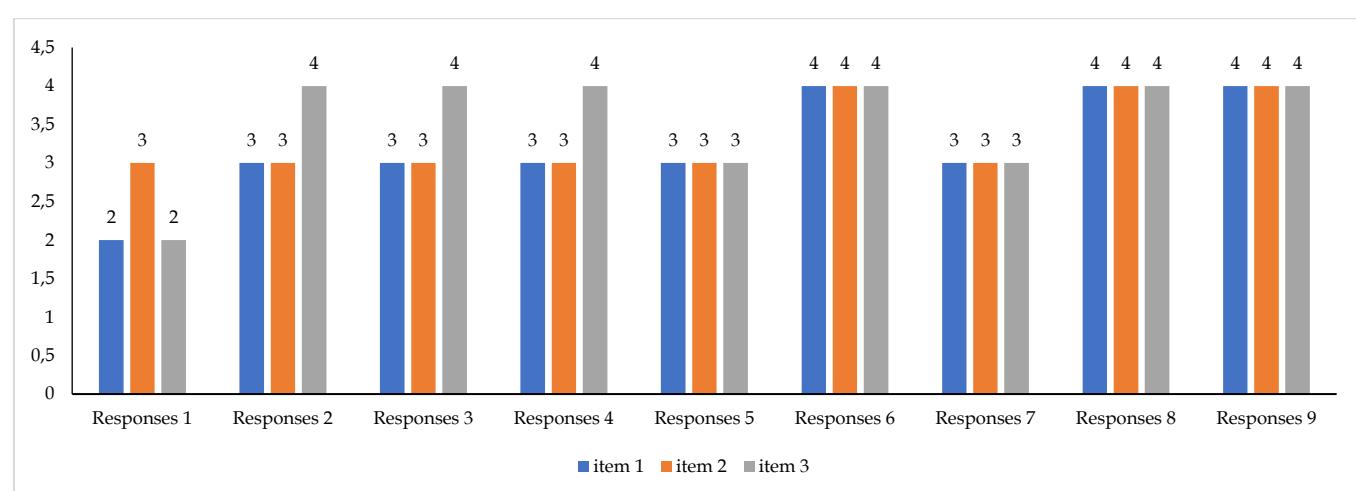


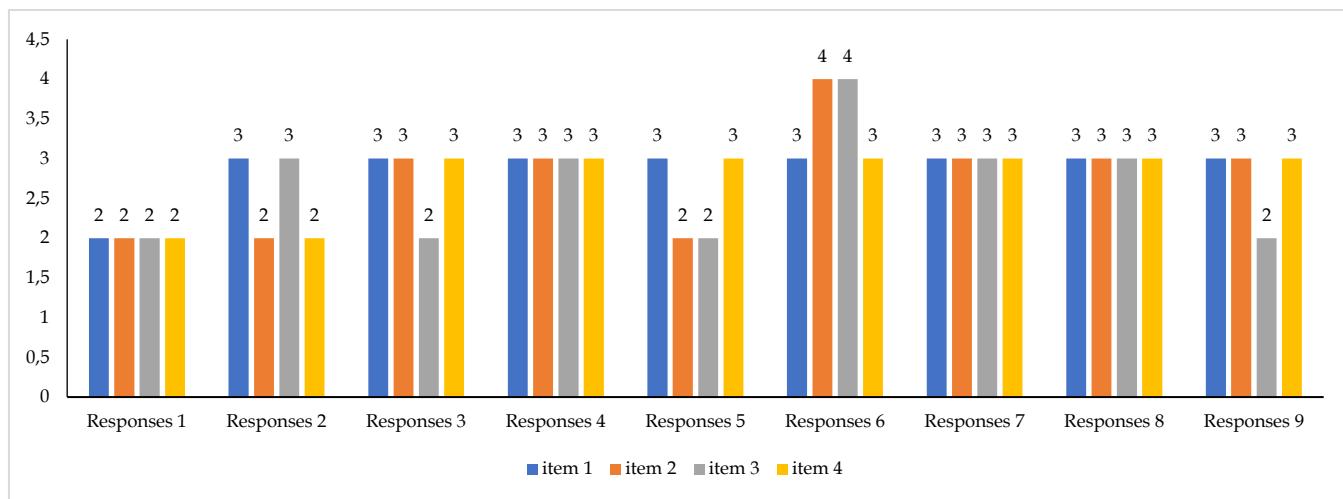
Figure 1. Competency by item high average scores

Document reviews and field observations also reveal that most madrasahs have started integrating literacy activities into lesson planning and classroom strategies, although the depth and consistency vary among teachers and school levels.

Pedagogical competence was measured using a 40-item Likert-scale questionnaire (1-4), completed by nine BIMTEK teachers representing MI, MTs, and MA. The descriptive analysis shows that item means range from 2.7 to 3.4, indicating that teachers' competencies fall within the "adequate" to "good" categories.

Competence by Item, Items with the highest average scores include: compiling lesson plans (RPP)

according to the syllabus; implementing learning activities according to plan; and motivating students using various engaging instructional activities. These findings indicate that teachers have mastered standard instructional procedures and exhibit strong engagement practices. Competency by items with the lowest average scores are related to: adapting learning methods to individual differences; diagnosing student learning characteristics; strategies for preventing disruptive behavior; and modifying instructional activities for diverse ability levels.



**Figure 2.** Competency by item lowest average scores

These results suggest that teachers still face challenges in applying differentiated instruction and nuanced classroom management – areas emphasized in AKMI pedagogy. To provide a clearer interpretation, the 40 items were categorized into six pedagogical themes.

showing teachers' uncertainty in adjusting materials and teaching strategies for varied literacy levels.

Qualitative Findings Interview based themes were obtained with the code at Figure 3.

**Table 1.** Competency by Thematic Group

Theme	Mean Score	Interpretation
Motivation & Engagement	3.30	Strong competencies
Curriculum & Lesson Alignment	3.28	Strong, consistent implementation
Assessment & Instructional Planning	3.22	Adequate-good
Inclusion & Classroom Management	3.11	Adequate but uneven
Behavioral Support & Individualization	3.05	Adequate but needs strengthening
Differentiation & Learning Adjustment	2.95	Weakest theme

The lowest-performing theme differentiation and learning adjustment aligns with interview findings



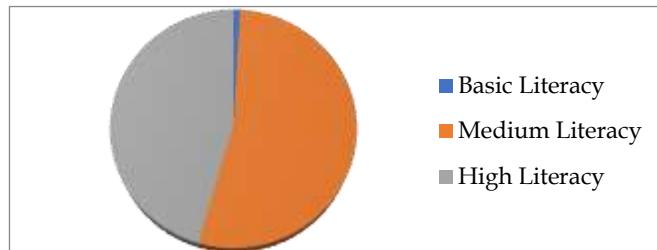
**Figure 3.** Code analysis of interviews with BIMTEK teachers

Analysis of interview transcripts produced three major themes: Increased Awareness but Uneven Mastery of AKMI concepts, teachers reported understanding the importance of literacy, yet many still struggle to translate AKMI results into instructional decisions (Amalia, 2023; Zainiyati & Suyitno, 2022). A teacher noted, "We understand the report, but applying it to lesson modification is still difficult; Structural

Constraints Affecting Training Effectiveness, the AKMI training faced limitations such as, short training duration, fully online modules, scheduling conflicts with teaching hours. These constraints did not directly cause low competence, but they limited opportunities for deeper practice, resulting in uneven pedagogical mastery; and need for Sustained Mentoring and Practical Guidance: Teachers expressed the need for follow-up mentoring to help them apply AKMI literacy concepts in real classroom situations. This indicates that training alone is insufficient without continuous coaching.

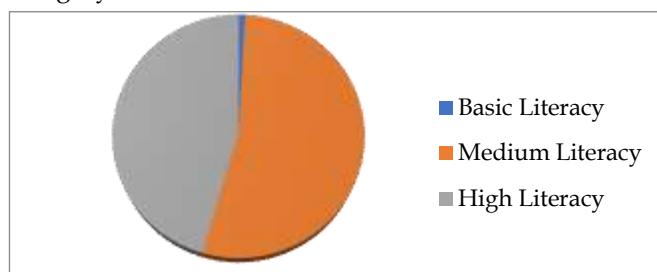
The implementation of the madrasah teacher training results has a positive and beneficial impact. One of the BIMTEK teachers in Kuningan at the MTs level stated that they had found a new understanding of learning activities by incorporating more meaningful and contextual literacy elements. Almost all BIMTEK teachers at every level stated that "The literacy provided in learning is able to stimulate critical and exploratory thinking, making students more actively participate in discussions or assigned tasks."

Then all the BIMTEK teachers declared "In developing differentiated learning strategies, it feels easier with the availability of AKMI report results to adjust to the needs and potential of everyone. Out of three MI regions consisting of 224 students, there were two students in the basic literacy category, 120 students in the proficient category, and 102 students in the skilled category.



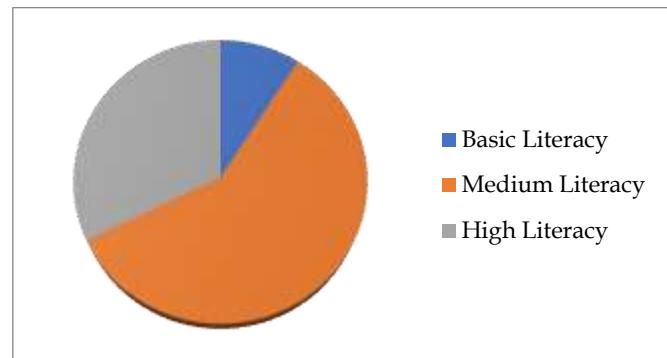
**Figure 4.** Literacy Competence of MI Students

The out of 620 students at MTs, 54 students are in the basic literacy category, 383 students are in the competent category, and 183 students are in the skilled category.



**Figure 5.** Literacy Competence of MTs Students

Meanwhile, at the MA level, which consists of 462 students, 42 students were found to have basic literacy, 271 students had proficient literacy, and 149 students had advanced literacy.



**Figure 6.** Literacy Competence of MA Students

The conclusion is that the results of the BIMTEK training have been able to be implemented functionally and have had a positive impact on teaching and learning activities, especially in the context of literacy.

Challenges in the Implementation of AKMI

Based on the interview analysis, the code results were obtained in Figure 7.



**Figure 7.** Constraints and Obstacles Code for AKM1 Activities

Although the training results perceived by BIMTEK teachers indicate success, several serious obstacles in the implementation of the AKMI program have been found through interview and observation data. These obstacles were encountered

The challenges begin from the lack of attention from teachers and principals towards dissemination in the madrasah, which led to miscommunication between teachers and students in the implementation of AKMI. As a result, when developing AKMI-based modules, teachers have not fully understood how to integrate assessment results into the syllabus (Kusaeri et al., 2022).

The findings indicate that AKMI implementation has begun to influence instructional practices, particularly in lesson planning and literacy-focused engagement (Cahyaningsih & Nasution, 2023). Teachers demonstrate adequate understanding of fundamental pedagogical aspects but are still developing competencies related to differentiation and behavioral support.

The results support Suryana (2015) view that pedagogical competence is an integrated system—meaning that weaknesses in one domain (e.g., understanding student needs) affect the overall effectiveness of instruction.

This study also aligns with prior research showing that literacy improvement initiatives require consistent mentoring and practice-based training. Therefore, enhancing AKMI implementation requires deeper conceptual training, sustained hands-on mentoring, structured follow-up workshops, and improved dissemination of AKMI literacy frameworks. Such efforts will ensure that AKMI functions not only as an assessment but also as a driver of instructional quality improvement across madrasahs (Nailan et al., 2025).

#### *The Influence of Teachers' Pedagogical Competence on Students' Literacy Skills*

The AKMI report cards that have been collected consist of three levels of madrasahs, namely Madrasah Ibtidaiyah (MI), Madrasah Tsanawiyah (MTs), and Madrasah Aliyah (MA). One teacher from each madrasah was selected for BIMTEK as representative data for each level in their area. These madrasas are in three regencies in West Java: Kabupaten Kuningan, Kabupaten Ciamis, dan Kabupaten Majalengka

**Tabel 2.** Average Pedagogical and Literacy Scores of Students

Level	Pedagogical Score (Average)	Literacy Score (Average)
MI	123.33	54.00
MTs	124.33	92.33
MA	123.67	131.67

The data processing results show that the average pedagogical competence of teachers is 123.33 for MI, 124.33 for MTs, and 123.67 for MA. Meanwhile, the average student literacy scores are 54.00 for MI, 92.33 for MTs, and 131.67 for MA. This means that these schools have achieved the national standard literacy scores. There appears to be no significant increase in pedagogical competence across levels, indicating that teachers of different cohorts have nearly the same abilities. However, when looking at student literacy

scores, there is a considerable improvement from MI to MA.

Based on the seven pedagogical competencies according to Suryana (2015), these competency elements cannot stand alone, but rather form an integrated competency system. Each competency supports and strengthens the others in shaping professional teachers. A comprehensive implementation of these seven aspects will result in a learning process that is adaptive, meaningful, and effective in enhancing students' literacy skills and learning outcomes, in line with the main objectives of the AKMI program (Ningrum et al., 2025; Novebri & Oktarina, 2024; Sa'idah & Fauziah, 2025; Sulistyawati et al., 2025).

This indicates that teachers' pedagogical competence has not shown a statistically significant effect on students' literacy skills because, based on the analyzed data, there are several pedagogical competencies that are not well implemented.

## Conclusion

The findings of this study demonstrate that pedagogical competence is not a single, isolated construct but a set of mutually reinforcing abilities. Teachers' skills in understanding student characteristics, differentiating instruction, conducting assessment, planning lessons, and managing learning environments operate as an interdependent system. The analysis shows that weaknesses in one dimension—particularly differentiation and diagnostic use of assessment—constrain the effectiveness of other pedagogical components. Consequently, the influence of pedagogical competence on students' literacy outcomes cannot be captured by a single indicator or measured solely through statistical significance; rather, it emerges from the cumulative interaction among these competencies. The results further indicate that challenges in AKMI implementation are not caused merely by "limited understanding," but by fragmented mastery across related pedagogical dimensions. For instance, teachers who understand AKMI concepts conceptually may still struggle to translate assessment results into instructional decisions due to weak diagnostic or differentiation practices. This highlights the need for strengthening pedagogical competence as an integrated whole rather than improving individual skills in isolation. In practical terms, the study emphasizes the importance of sustained, targeted follow-up programs that focus on coherent competency development. Recommended follow-up actions include: structured coaching to help teachers interpret AKMI results and incorporate them into lesson design; hands-on workshops on differentiated literacy instruction; classroom-based

mentoring to model diagnostic teaching strategies; and subject teachers' meeting (STM) to support collaborative reflection and refinement of pedagogical practices. In summary, the effectiveness of AKMI implementation is closely linked to the interconnected nature of teachers' pedagogical competence. Strengthening these competencies holistically—rather than through fragmented or one-off training—will enhance teachers' ability to utilize assessment data meaningfully and support improved literacy learning across all madrasah levels. "...as an interconnected system, pedagogical competence cannot be understood as isolated skills...".

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### Author Contributions

Creator, Lutfi Rahman Purbasari, ; Mentor- Anna Fitri Hindriyana, Agus Yadi Ismail writing— original draft preparation, I.U.M, L.S, A.I.W.S.R, and H.J.; writing—review and editing, I.U.M, H.J, J.J, H.A.E, and M.R.; Visualization. H.J and M.R. All authors have agreed to the published version of the manuscript.

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### Conflicts of Interest

The author declares no conflict of interest in this study.

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