



Understanding teachers' personality competence in mathematics instruction

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Abstract

Teacher personality competence, which includes ethical maturity, reflective self-development, and a student-centered orientation, is vital to effective mathematics instruction at Madrasah Ibtidaiyah. However, this crucial aspect remains overlooked mainly in instructional design, limiting the potential for meaningful and ethical learning experiences. This study explores how personality competence is demonstrated in classroom practices and contributes to high-quality mathematics teaching. Utilizing a qualitative approach and the Didactical Design Research (DDR) framework at the prospective analysis stage, the research involved six sixth-grade teachers from six different Madrasah Ibtidaiyah in Bandung Regency. Data were collected through classroom observations, in-depth interviews, teacher reflection sheets, and instructional document analysis. Data were analyzed using the three-stage framework of data reduction, data display, and conclusion drawing/verification through an iterative process to identify patterns and inform the subsequent DDR phases in the context of joyful mathematics learning at MI. Findings revealed that teachers scored at level 3 for moral, emotional, and spiritual maturity, level 1 for reflective self-development, and level 2 for student-centered orientation. These findings suggest that while MI teachers show emerging awareness of personality competence, most remain at early developmental stages, highlighting the need for structured support to foster ethical leadership, reflective practice, and student-centered teaching. Teachers with strong personality competence exhibited discipline and consistency and served as moral role models. Furthermore, they effectively managed classrooms and actively engaged students in mathematical learning. These results offer insights for developing instructional designs prioritizing teacher personality competence as a critical factor in educational quality.

Keywords: personality competence; Madrasah Ibtidaiyah; didactical design research (DDR)

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I. Introduction

In the context of Islamic-based elementary education, particularly at Madrasah Ibtidaiyah (MI), mathematics instruction often

faces challenges in creating an engaging and meaningful learning environment (Muhajir, 2024; Nurwahid, 2025; Mursalin, 2025). At Madrasah Ibtidaiyah, Islamic elementary schools, teaching



mathematics frequently encounter difficulties in delivering captivating and meaningful lessons, which hinders teachers from fully engaging students and promoting a deep understanding and appreciation of the material. This situation highlights the need for innovative teaching strategies and a greater focus on the personal competencies of teachers to create a more supportive and effective learning environment in mathematics (Vlasenko, Chumak, Achkan, Lovianova & Kondratyeva 2020; Vlasenko, Chumak, Lovianova, Achkan & Sitak, 2022).

Students frequently perceive mathematics as rigid and intimidating, leading to low participation and reduced academic performance (Heyd, 2015; Victor-Edema, 2024). This perception creates a significant barrier to learning, making it essential to develop teaching approaches that build confidence and foster a positive attitude toward mathematics. Addressing these challenges requires more than content knowledge; teachers must possess strong personal qualities to inspire and support students throughout the learning process. One essential but often overlooked aspect in both educational theory and practice is the teacher's personality competence, a component that encompasses not only professional and academic capabilities but also moral integrity, emotional maturity, and a student-centered (Tkachenko, Kushevskaya & Kabysheva, 2023; Uri & Chanifuddin, 2024; Ghaleb, 2024). When exploring the effect of teacher ontological and epistemic cognition on engagement with professional development, it is crucial to recognize that teachers' attributes significantly influence their approach to learning and professional growth (Fowler, Gabriel & Leonard, 2022; Barr & Askill, 2019; Lammassaari, Hietajarvi, Salmela-Aro, Hakkarainen & Lonka, 2022).

Teachers with high personality competence are likelier to engage deeply with professional development programs, as their moral integrity fosters a strong commitment to improving their pedagogical practices and personal growth. Additionally, emotional

maturity helps teachers manage professional development challenges, fostering resilience and a reflective mindset essential for continuous improvement. (Fowler et al., 2022; Meher, Sahu, Meher & Bariha, 2025).

According to the Regulation of the Director General of Teachers and Education Personnel Number 2626/B/HK.04.01/2023, personality competence refers to moral, emotional, and spiritual maturity to act by the professional code of ethics; self-development through reflective habits and a strong orientation toward student needs and development. Theoretical frameworks such as the *Teacher Professionalism Model* and *Reflective Teaching Theory* emphasize that personality competence significantly influences teaching effectiveness and classroom climate (Talib, 2025; Lindström, 2025; Sapkota, 2025; Alsaeed, 2024). However, in practice, this dimension is rarely a central focus in instructional design, especially in mathematics education at the elementary level.

While these theoretical and policy frameworks underscore the importance of personality competence, preliminary observations and interviews with teachers from several Madrasah Ibtidaiyah in Palu, Central Sulawesi, reveal a concerning trend. Many mathematics teachers struggle to translate their values into classroom practices, especially in managing emotions during teaching, reflecting on instructional effectiveness, and responding to students' diverse emotional and academic needs. Interviews indicate that some teachers perceive reflective practice as time-consuming or unnecessary, and few have received targeted training to develop this aspect of their competence.

Moreover, existing studies often emphasize pedagogical content knowledge or curriculum design. However, limited research specifically addresses the integration of personality competence into mathematics instruction at the elementary level, particularly within the Islamic educational context. This gap becomes critical, considering that low levels of

personality competence have been linked to increased classroom tension, reduced student motivation, and minimal professional collaboration among teachers (Farihati, 2024; Arifudin, 2022; Vicentini, 2025).

These findings suggest an urgent need for research highlighting the current state of teachers' personality competence and exploring how it can be nurtured and incorporated into the instructional design process. By addressing this gap, the study aims to contribute to developing more ethical, reflective, and student-centered mathematics teaching practices in Madrasah Ibtidaiyah.

Based on this context, the research problems addressed in this study are: (1) How is the teacher's personality competence manifested in mathematics instruction at MI? and (2) How does this competence contribute to the quality of learning implementation? To address these questions, a comprehensive approach is required, one that not only describes classroom practices but also explores the internal processes of teachers in fulfilling their roles.

Using the Didactical Design Research (DDR) framework at the prospective analysis stage, this study aims to identify the strengths and limitations of teachers' personality competence and inform the design of didactic strategies that align with the contextual needs of mathematics learning in MI. Rather than merely reporting existing conditions, this research intends to provide constructive insights for improving teaching practice.

Therefore, this study aims to understand the current forms of teacher personality competence in mathematics instruction at Madrasah Ibtidaiyah and to examine how this competence supports the implementation of quality teaching. Ultimately, the research contributes to developing more ethical and humanistic (Harefa, 2024).

II. Research Method

This study uses a qualitative approach with a descriptive method framed within the context of Didactical Design Research (DDR).

DDR is used to explore the social competence of Madrasah Ibtidaiyah (MI) teachers as a basis for designing mathematics instruction that supports students' emotional well-being. This study is positioned at the initial stage of DDR, namely prospective analysis, which aims to describe existing teaching practices and identify potential obstacles within the teaching process.

This study's subjects consisted of six sixth-grade MI teachers from six different schools in Bandung Regency, selected using purposive sampling. The selection criteria focused on teachers directly responsible for mathematics instruction in sixth grade and willing to engage in reflective and collaborative processes.

Data was collected through four primary techniques: teacher reflection sheets, classroom observations, in-depth interviews, and document analysis (e.g., lesson plans, student work, teacher journals) (Charmaz, 2015; Farrell & Ives, 2015). These instruments were designed to capture dimensions of teachers' social competence, including moral, emotional, and spiritual maturity, by the teacher's code of ethics, (2) self-development through habitual reflection, and (3) a student-centered orientation.

The instruments in this study were designed to explore three key dimensions of teachers' personality competence: (1) moral, emotional, and spiritual maturity in line with the professional code of ethics; (2) self-development through reflective habits; and (3) a student-centered orientation. Teacher reflection sheets contained prompts to encourage self-evaluation related to ethics, emotional regulation, and reflective practices (Woolcott et al., 2024). Classroom observations used checklists and field notes to capture behaviors demonstrating moral and emotional maturity and student-centered teaching strategies (Karasova & Nehyba, 2023). In-depth interviews further explored teachers' beliefs and experiences in managing emotions, acting ethically, and addressing student needs (Jiang, Vauras, Volet & Salo, 2019). Document analysis (including lesson plans, teacher journals, and student work) was conducted to assess

planning, reflection, and instructional strategies that reflect personality competence in practice.

Data analysis followed the framework of Miles, Huberman & Saldana (2014), which includes three stages: data reduction, data display, and conclusion drawing/verification. This process was conducted iteratively to identify patterns, synthesize key findings, and prepare for the next stage of DDR, namely the metapedadidactic and retrospective phases, which will be adapted to the joyful learning context of mathematics instruction in MI.

III. Results and Discussion

The findings of this study reveal varying levels of teachers' personality competence in mathematics instruction at Madrasah Ibtidaiyah. Based on data collected from classroom observations, teacher reflection sheets, document studies, and in-depth interviews, three key indicators of teachers' personality competence according to the Regulation of the Director General of Teachers and Education Personnel Number 2626/B/HK.04.01/2023, along with five progressive levels of mastery for each indicator as shown in Table 1.

Table 1. Developmental levels of teachers' personality competence

Level	Moral, Emotional, and Spiritual Maturity	Reflective Self-Development	Student-Centered Orientation
1	Understand the importance of ethical behavior	Recognizes the value of reflection	Aware of the importance of focusing on students
2	Applies ethical behavior consistently	Begins to reflect on teaching	Implements student-centered strategies occasionally
3	Evaluates personal ethical actions	Evaluate and adjust practices	Regularly applies and reviews student-centered practices

4	Collaborates with peers to improve ethics	Collaborates for reflective improvement	Works with peers to enhance student-centered strategies
5	Mentors' others in ethical conduct	Mentors' others in reflection	Mentors' peers in student-centered teaching

The first indicator, "Moral, emotional, and spiritual maturity to act by the teacher's code of ethics," begins at the level of understanding its importance, then advances to applying such behavior, evaluating one's ethical actions, collaborating with peers to refine such practices, and finally mentoring others in ethical conduct. The second indicator, "Self-development through reflective habits," similarly progresses from recognizing the value of reflection to actively engaging in reflective practices, evaluating those practices, collaborating with peers for improvement, and guiding others to adopt reflective habits.

The third indicator, "Student-centered orientation," starts with an awareness of the importance of focusing on students, followed by regular implementation of student-centered practices, evaluating and refining these habits, peer collaboration, and mentoring fellow teachers to promote student-centered approaches. These levels represent a developmental trajectory from basic awareness to leadership and mentoring, emphasizing the evolving nature of personality competence in professional teaching practice.

Moral, Emotional, and Spiritual Maturity

This indicator was found at Level 3, meaning most teachers exhibit a consistent moral stance, emotional stability, and spiritual awareness, aligning their behavior with professional codes of ethics. This was reflected in the classroom through disciplined behavior, respectful communication, and emotional control, as shown in Table 2.

Table 2. Excerpts from the interviews that illustrate indicators of moral, emotional, and spiritual maturity

RoCT₁	How do you usually manage your emotions when facing difficult situations or when students are not paying attention during lessons?
ToCPTy2	I always try to maintain my composure in front of the students. If I get emotional, I take a deep breath first; I do not want the students to get emotional.

The excerpt in Table 2 presents a representative response related to the first indicator of personality competence: moral, emotional, and spiritual maturity. This response was selected from the broader dataset to illustrate a typical pattern observed among several participants. In this case, the teacher (ToCPTy2) emphasized emotional regulation by describing strategies such as remaining calm and taking a deep breath during challenging situations. This behavior reflects a moderate level of maturity suggesting that the teacher recognizes the importance of emotional control and applies it in classroom interactions. Similar expressions of emotional regulation and professional composure were noted in responses from other participants, though with varying levels of consistency and depth. Therefore, this excerpt exemplifies a broader trend in the data, indicating that while most teachers demonstrate an awareness of ethical classroom conduct, few have progressed toward collaborative refinement or mentoring others in this area. It highlights that emotional and moral awareness exists among the participants but needs strengthening through structured development and peer support.

Self-Development through Reflective Habits

This indicator showed the lowest level (Level 1). Most teachers have not yet cultivated structured habits of reflection. Although they express awareness of the importance of self-improvement, it is not yet implemented regularly, as shown in Table 3.

Table 3. Excerpts from the interviews that illustrate indicators of self-development through reflective habits.

RoCT₁	Do you habitually evaluate or reflect on your teaching after class? If so, how do you usually do it?
ToCPTy3	Sometimes, I think about how the lesson went, but I do not write it down or formally evaluate it.

The excerpt in Table 3 presents a teacher's response concerning the second indicator of personality competence: self-development through reflective habits. When asked whether they reflected on their teaching practices after class, the teacher (ToCPTy3) acknowledged occasionally thinking about the lesson but admitted to not engaging in any formal or written reflection. This response reflects a common tendency among several participants an initial awareness of reflection's value but limited follow-through in practice. While informal reflection is a starting point, the lack of structure and consistency indicates that many teachers have not yet developed systematic habits that support meaningful professional growth. This example highlights a broader issue: reflective practices among the participants are generally underdeveloped. To strengthen this dimension, teachers need support to engage in more intentional reflection, such as maintaining teaching journals, participating in peer feedback sessions, or using structured self-assessment tools.

Student-Centered Orientation

This component was found at Level 2, indicating that teachers are beginning to show attention to students' needs but still rely heavily on traditional instruction. Teachers expressed efforts to build student confidence, often rooted in their personality traits, as shown in Table 4.

Table 4. Excerpts from the interviews that illustrate indicators of student-centered orientation.

RoCT₁	What do you do to help students feel comfortable and confident in learning mathematics, especially when asking them to come to the front of the class?
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ToCPty3 I praise them when they are willing to come to the front. It helps build their confidence.

The excerpt in Table 4 highlights a teacher's approach to demonstrating student-centered orientation in mathematics instruction. When asked about strategies to help students feel comfortable and confident, particularly when participating in front of the class, the teacher (ToCPty3) explained that they often use praise to encourage student participation. Positive reinforcement aims to boost students' self-confidence and reduce public speaking or performance anxiety. The response illustrates the teacher's awareness of the emotional dimensions of learning and the value of creating a psychologically safe environment. Moreover, it underscores how affirming feedback can foster student engagement by promoting a sense of belonging and encouraging academic risk-taking, key characteristics of student-centered learning.

Based on the indicator levels of teachers' personality competence, the current condition among Madrasah Ibtidaiyah teachers generally falls within the early to intermediate levels. For instance, regarding the indicator of *moral, emotional, and spiritual maturity to behave according to the teacher's code of ethics*, many teachers are at level 2 or 3. They demonstrate ethical behavior and self-evaluation but have not yet reached the stages of collaboration or mentoring with peers. Similarly, in *self-development through reflective habits*, most teachers remain at level 1 or 2, where reflection is informal and not systematically documented.

Meanwhile, in the *student-centered orientation* indicator, teachers know the importance of focusing on students and attempt to apply this in their teaching practices. However, their efforts in conducting evaluations and engaging in professional collaboration are still limited (Vicentini, 2025; Tengaa, 2024; Maunes, 2024). Therefore, the ideal target is for teachers to reach level 5 in all indicators. This means that teachers internalize and practice strong personal competencies and serve as mentors and role

models for their colleagues. Achieving level 5 reflects a teacher who is mature in personality, professionally reflective, and committed to promoting student-centered learning through collaboration and mentoring. In doing so, teachers grow personally and professionally while also contributing to transforming their educational communities (Farihati, 2024; Arifudin, 2022).

The results of this study indicate that Madrasah Ibtidaiyah (MI) teachers demonstrate varying levels of personality competence across the three assessed indicators. For the first aspect, emotional and spiritual maturity, the findings suggest that most teachers are at a moderate level, able to control emotions and act ethically in classroom interactions. This aligns with the findings of Alsaed (2024), who emphasized the role of emotional regulation and ethical behavior in building a positive learning environment. However, unlike Lindström's (2025) findings, which reported that teachers in high-performing schools often engage in peer collaboration to refine ethical practices, the teachers in this study have not widely progressed to that level. This suggests a developmental gap between awareness and collaborative action that needs institutional support.

Regarding self-development through reflective habits, the results showed the lowest levels of development among the three indicators. Teachers tend to engage in occasional, informal reflection without systematic evaluation. This confirms prior findings by Talib (2025), who observed that reflection is often underutilized in elementary teaching practice despite being crucial for continuous improvement. Compared to Sapkota's (2025) study, where structured reflection tools significantly improved instructional quality, the teachers in this study have not yet adopted such approaches. Thus, these findings highlight a need for structured professional learning communities and reflective documentation tools to enhance teachers' reflective capacity.

For the third aspect, student-centered orientation, the findings show early efforts by

teachers to support students emotionally, particularly through praise and encouragement. While this supports the work of Maunes (2024), who found that positive reinforcement helps reduce math anxiety, the lack of instructional strategies that actively engage students in inquiry or problem-solving tasks contrasts with the practices reported in Vicentini's (2025) research on student agency in mathematics learning. Therefore, while the emotional aspects of student-centered teaching are present, the cognitive dimensions remain underdeveloped, indicating that professional development should also target instructional design aligned with student-centered pedagogy.

In recent years, studies have consistently highlighted several significant problems resulting from low levels of teachers' personality competence, especially in primary-level education. First, teachers with weak moral and ethical foundations often fail to serve as effective student role models. This lack of integrity undermines efforts to instill core values and character development in learners, which is especially critical at the elementary level (Anisah, 2023). When students do not see consistent ethical behavior modeled by their teachers, it can lead to confusion regarding acceptable conduct and contribute to inconsistent or disruptive classroom behavior. The absence of a strong moral compass in teachers affects students' personal growth. It diminishes the overall learning climate, making it difficult to foster a respectful and disciplined environment essential for academic success (Darling, 2018). Second, a lack of self-reflection prevents teachers from improving their instructional practices, resulting in stagnant teaching methods failing to meet students' evolving needs. Third, low personality competence is frequently linked to reduced motivation and work discipline, such as poor punctuality, lack of preparation, and diminished enthusiasm, negatively affecting student engagement and learning outcomes. Fourth, teachers with underdeveloped personality traits often struggle with classroom management,

especially in responding constructively to student misbehavior, which disrupts the learning environment. Finally, insufficient personality competence can hinder collaboration with colleagues, limiting opportunities for professional growth and sharing effective teaching strategies. These problems underscore the urgent need for targeted interventions, including reflective training, mentorship, and structured professional development programs, to enhance teachers' personality competence and ultimately improve the quality of mathematics instruction in Madrasah Ibtidaiyah.

IV. Conclusion

The findings of this study indicate that the personality competence of Madrasah Ibtidaiyah (MI) teachers in mathematics instruction is generally at the early to intermediate developmental levels. Regarding moral, emotional, and spiritual maturity, most teachers can regulate their emotions and demonstrate ethical behavior in the classroom, reflecting moderate professional conduct. However, their engagement in self-development through reflective habits remains limited; reflection is primarily informal and unstructured, with few teachers documenting or systematically evaluating their teaching. Meanwhile, student-centered orientation shows initial efforts, such as using praise to build student confidence, but lacks deeper pedagogical strategies and collaborative refinement. These levels of competence influence the quality of learning implementation. Teachers with higher levels of emotional maturity contribute to a favorable classroom climate, but the potential for instructional improvement is limited without strong reflective practices and collaborative engagement. The study suggests that fostering personality competence, primarily through structured reflection and peer collaboration, enhances individual teacher development and plays a critical role in creating effective, ethical, and student-focused learning environments in MI mathematics instruction.

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