Multiple Intelligences as a Pedagogical Activation System in Primary Education

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Abstract	This study aims to reconstruct multiple intelligences as a system for activating human potential in primary education through a multi-site qualitative study in five schools in Kudus, namely MI Negeri Prambatan, SD al-Islam Glantengan, SD Islam Nawakartika Langgardalem, MI Muhammadiyah Damaran, and SD Kristen Cahaya Nur Barongan. The research was conducted from August 2023 to February 2024 and involved five school principals and ten teachers as key informants. Data were collected through in-depth observation, semi-structured interviews, and document analysis, and were then analyzed thematically and constructively to develop theoretical propositions. The findings show that multiple intelligences operate through three systemic mechanisms: the diagnosis of potential through continuous observation, the activation of potential through a multimodal learning ecosystem that integrates various types of intelligence, and the validation of potential through multidimensional, authentic assessment. This process not only increases learning engagement but also transforms students' identities from passive recipients to active agents capable of developing reflective, creative, and adaptive thinking capacities. This research contributes by developing the Multiple Intelligences as Pedagogical Activation System theoretical model, which reconceptualizes the role of multiple intelligences from mere learning strategies into an ontological system for activating human potential, and opens new directions in the development of educational theory and practice that are more oriented towards transforming student potential.
Keywords	Multiple Intelligences, Potential Activation, Pedagogical System, Basic Education.

INTRODUCTION

Education is widely recognized as a key mechanism for preparing individuals to face the increasingly complex social, economic, and technological transformations of the twenty-first century. However, many contemporary education systems still tend to prioritize standardized academic achievement and cognitive outcomes, often neglecting the diversity of students' intellectual potential and learning characteristics. This limitation raises critical concerns regarding the ability of schools to cultivate the broad range of competencies required in a knowledge-based society, such as creativity, collaboration, critical thinking, and adaptive problem-solving (Drigas et al., 2023; Gisore, 2023; OECD, 2021). Consequently, there is a growing urgency to develop pedagogical approaches that not only transmit knowledge but also activate the diverse intellectual capacities of learners in a more holistic and inclusive manner (Biesta, 2015; Priestley et al., 2015).

In basic education, attention to students' diverse potential is increasingly important because this phase is a critical period in the formation of individuals' cognitive foundations and character (Darling-Hammond, 2017). Specifically, in education and educational psychology, intelligence is no longer understood solely as logical and linguistic abilities measured by the Intelligence Quotient, but rather as a multidimensional construct that reflects various forms of human capacity for understanding and interacting with the world (Davis et al., 2011; B. Gardner et al., 2022; H. Gardner & Moran, 2006; Sternberg, 2015). The Multiple Intelligences theory expands the concept of intelligence by recognizing multiple types of intelligence, including interpersonal, intrapersonal, kinesthetic, musical, and naturalistic intelligence, all of which contribute to the overall development of individuals (Davis et al., 2011, 2011). This perspective emphasizes that each learner has a unique intelligence profile, so the learning process needs to be designed differently to accommodate this diversity.

Several previous studies have examined the implementation of Multiple Intelligences in education, particularly to increase learning engagement, motivation, and effectiveness. Studies in educational psychology show that a Multiple Intelligences-based approach can increase students' active participation by providing learning experiences aligned with their individual strengths (Kornhaber, 2019; Li, 2024; Wang, 2024). Other research in the field of pedagogy also highlights the role of Multiple Intelligences in supporting learner-centered learning and in developing creativity and problem-solving (Massey et al., 2023; Schnackenberg & Tomlinson, 2016). Furthermore, studies in the context of 21st-century education emphasize that integrating the Multiple Intelligences

approach can foster key competencies such as critical thinking, collaboration, and communication (Jebur et al., 2025; Sholeh et al., 2025). However, most of these studies focus on conceptual aspects, curriculum design, or evaluation of learning outcomes in general. At the same time, attention to the actual implementation process in elementary schools remains relatively limited.

Despite the growing body of research on Multiple Intelligences in education, several important gaps remain in the existing literature. Most previous studies have primarily focused on conceptual discussions, curriculum design, or the effectiveness of Multiple Intelligences in improving learning motivation and academic outcomes. However, relatively little empirical research has examined how the Multiple Intelligences framework is systematically translated into everyday pedagogical practices in primary education, particularly in relation to learning planning, classroom implementation, and assessment systems. As a result, the practical mechanisms through which Multiple Intelligences can function as an integrated pedagogical system for activating students' potential remain insufficiently understood. Addressing this gap is important because understanding how Multiple Intelligences operates in real educational contexts can provide deeper insights into how schools can design more inclusive, differentiated, and learner-centered learning environments.

Based on these gaps, this study aims to empirically examine how Multiple Intelligences-based learning is planned, implemented, and assessed in elementary schools, and how these practices contribute to the development of students' 21st-century skills

METHOD

This study uses a qualitative, multi-site design to gain an in-depth understanding of how Multiple Intelligences-based learning is planned, implemented, and evaluated in the context of primary education. The qualitative approach was chosen because it allows for contextual exploration of educational phenomena, emphasizing the meanings, experiences, and actual practices of educational actors in their natural environments (Bearman, 2019; Creswell & Creswell, 2022). A multi-site design was used because this research was conducted across several educational institutions with different characteristics, allowing for the identification of common patterns and contextual variations in the implementation of Multiple Intelligences-based learning (Yin, 2014). This design is methodologically aligned with the research objective, which focuses on a deep understanding of the pedagogical process rather than on testing causal relationships statistically.

The research was conducted in five elementary schools in Kudus Regency, Central Java, namely MI Negeri Prambatan, SD Al-Islam Glantengan, SD Islam Nawakartika Langgardalem, MI Muhammadiyah Damaran, and SD Kristen Cahaya Nur Barongan, from February to August 2023. The locations were selected purposively based on empirical relevance, namely that these schools demonstrated learning practices that accommodated the diversity of student potential through a range of academic and non-academic activities. The diversity of institutional backgrounds, including public madrasahs, private Islamic schools, and other religious-based schools, provided a rich empirical context for understanding how the Multiple Intelligences approach is implemented in various primary education settings. This context enabled exploration of the relationship among school policy, pedagogical practices, and the holistic development of students' potential.

The research participants consisted of five school principals and ten teachers, with two teachers from each school. Participants were selected using purposive sampling, with the criteria that participants had a direct role in planning, implementing, and evaluating learning. School principals were selected for their strategic role in developing school policy and academic culture, while teachers were selected for their direct involvement in classroom learning practices. In addition to interviews with participants, data were collected through classroom observation and the analysis of educational documents, including lesson plans, evaluation records, and school activity documents. The combination of these data sources enabled a more comprehensive understanding of the implementation of Multiple Intelligences in actual educational practice.

Data collection was conducted through semi-structured in-depth interviews, non-participatory observation, and document analysis, which were carried out gradually during the research period (Bowen, 2009; Knott et al., 2022; Walsh, 2020). Interviews were used to explore participants' understanding, experiences, and strategies for implementing Multiple Intelligences-based learning, with each session lasting 45-90 minutes. Observations were conducted to directly observe students' learning practices, pedagogical interactions, and activities that reflected the various forms of intelligence. At the same time, document analysis was used to understand the integration of Multiple Intelligences in learning planning and evaluation. Data were analyzed using a thematic analysis approach (Braun & Clarke, 2019), through the stages of transcription, open coding, categorization, and theme development, which were carried out iteratively and reflectively to identify patterns of implementation and conceptual meanings that emerged from the data.

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The validity of the research was maintained through trustworthiness strategies, including triangulation of data sources, member checking, and systematic documentation of the research process to ensure the credibility, dependability, and confirmability of the research findings (Denzin, 2012; Marlina et al., 2024). This research was also conducted in accordance with research ethics principles, including obtaining informed consent, protecting participants' identities' confidentiality, and using data solely for academic purposes. Although this study is not intended for statistical generalization because it uses a qualitative approach with a limited number of participants, the multi-site design and data triangulation provide a strong basis for generating a deep and contextual understanding of the implementation of Multiple Intelligences-based learning in primary education, as well as providing significant empirical contributions to the development of educational theory and practice.

FINDINGS AND DISCUSSION

Findings

The results of the analysis show that the implementation of Multiple Intelligences is not only understood as a theoretical concept, but has been translated into real pedagogical practices through differentiated learning planning, multimodal learning strategies, and authentic assessment systems. In general, the research findings reveal three main themes, namely (1) the reconstruction of learning planning based on diversity of intelligences, (2) the implementation of multimodal learning strategies as a space for the actualization of students' intelligence, and (3) the transformation of the assessment system towards authentic evaluation based on individual potential. Collectively, these three findings show that Multiple Intelligences functions as an operational framework in developing students' 21st-century skills.

1. Reconstruction of Learning Planning Based on Multiple Intelligences

The first finding (see Table 1) shows that the implementation of Multiple Intelligences begins at the learning planning stage, where teachers consciously design learning activities that accommodate students' diverse potential. Learning planning is no longer oriented towards the uniform delivery of material. Still, it is designed to offer a range of activities that allow students to express their understanding through different modalities of intelligence. Teachers recognize that each student has different strengths, so learning needs to be designed flexibly and differentiated.

Table 1. Multiple Intelligences-Based Learning Planning

Data Source	Theme	Frequency	Empirical Excerpt	Interpretation
Interview with the Principal (5)	Potential-based learning policy	5	"We encourage teachers to understand the unique potential of each student, not just look at academic grades."	Multiple Intelligences integrated into school policy
Teacher Interview (10)	Differentiated planning	9/10	"In one subject, we create several types of activities, such as discussions, drawing, and practice."	Teachers design multimodal activities
Classroom observation (5 schools)	Variation in learning activities	5	Discussion, presentation, practice, and visual exploration activities were found	Learning is designed for multiple intelligences
Lesson Plan Documents	Integration of diverse activities	5/5	The lesson plan includes visual, kinesthetic, and collaborative activities	Planning supports MI implementation

Source: Primary data processed by the researcher

These findings indicate that Multiple Intelligences have influenced the learning planning paradigm, from a uniform approach to a differentiated approach. Learning planning has become a strategic space to ensure that every student has the opportunity to learn according to their strengths.

2. Implementation of Multimodal Learning Strategies

The second finding (see Table 2) shows that the implementation of Multiple Intelligences is realized through multimodal learning strategies that provide students with opportunities to learn through various activities. Teachers not only use lecture methods but also integrate group discussions, hands-on practice, creative activities, and presentations into the learning process. This strategy allows students to develop various forms of intelligence simultaneously.

Table 2. Multimodal Learning Strategies

Data Source	Theme	Frequency	Empirical Excerpt	Interpretation
Teacher Interviews (10)	Variation in teaching methods	10	"We use a variety of methods so that all students can be involved."	Multimodal strategies are widely used
Class observation	Collaborative activities	5	Students work in groups and discuss	Interpersonal intelligence develops
Class observation	Practical activities	4/5	Students engage in hands-on practice	Kinesthetic intelligence is facilitated
Documentation of activities	Creative activities	5/5	Art activities, presentations, and projects	Supports creative and visual intelligence

Source: Primary data processed by Researcher

These findings indicate that Multiple Intelligences serve as an operational framework in developing active, participatory, and learner-centered learning. Multimodal strategies enable learners to learn more meaningfully and in accordance with their individual characteristics.

3. Transformation of the Assessment System Towards Authentic Assessment

The third finding (see Table 3) shows that implementing Multiple Intelligences also affects the assessment system, with schools no longer relying solely on written tests as the sole indicator of learning success. Instead, teachers use various forms of assessment, including observation, performance assessment, and project-based evaluation.

Table 3. Multiple Intelligences-Based Assessment System

Data Source	Theme	Frequency	Empirical Excerpt	Interpretation
Teacher Interviews	Authentic Assessment	9/10	"We assess students not only from tests, but also from their activities"	More comprehensive assessment
Observation	Activity-based assessment	5	Teachers observe student engagement	Process-based assessment
Assessment documents	Variations in evaluation forms	5/5	There are project assessments and presentations	Evaluation supports MI

Source: Primary data processed by Researcher

The findings in Table 3 above show that Multiple Intelligences have encouraged the transformation of the assessment system towards a more authentic and holistic approach.

4. Synthesis of Findings: Multiple Intelligences as a Framework for Pedagogical Transformation

The synthesis of findings (see Table 4) shows that Multiple Intelligences not only functions as a theoretical concept, but also as a framework for pedagogical transformation that influences learning planning, learning implementation, and assessment systems.

Table 4. Synthesis of Findings

Dimension	Form of Implementation	Impact
Planning	Differentiative activities	Accommodating diversity of potential
Implementation	Multimodal strategy	Increasing student engagement
Assessment	Authentic evaluation	Generating holistic assessments

Source: Primary data processed by the researcher

Overall, the research findings indicate that the implementation of Multiple Intelligences has contributed to transforming pedagogical practices towards a more inclusive, differentiated, and learner-centered approach. Multiple Intelligences serves as a conceptual and operational framework that enables schools to develop learners' potential in an optimal, holistic manner.

Discussion

The findings of this study indicate that the implementation of Multiple Intelligences in elementary education not only serves as an alternative pedagogical approach but has also developed into an operational framework that transforms the entire learning ecosystem, from planning and implementation to the assessment system. Specifically, this study reveals that teachers actively reconstruct learning plans to accommodate students' diverse potential, implement multimodal learning strategies that enable the actualization of various types of intelligence, and develop a more comprehensive, holistic, and authentic assessment system. These findings show that Multiple Intelligences is no longer positioned as a purely theoretical concept, but as a practical framework that mediates pedagogical transformation towards more inclusive, differentiated, and learner-centered learning.

Theoretically, these findings can be explained through the Multiple Intelligences theoretical framework developed by Gardner (B. Gardner et al., 2022; H. Gardner & Hatch, 1989; H. Gardner & Moran, 2006), which asserts that human intelligence is multidimensional and cannot be reduced to linguistic and logical abilities alone. The implementation of learning that provides various forms of activities, such as discussions, hands-on practice, creative activities, and collaborative work, reflects recognition of this plurality of intelligence. From a social constructivist perspective, this practice aligns with Vygotsky's (1978) view, which emphasizes that learning is a social process mediated by interaction, experience, and cultural context. The multimodal learning strategies identified in this study show that teachers act as facilitators, creating a learning environment that allows students to construct knowledge through various cognitive pathways and embodied learning experiences (Kolb, 1984; Miller, 2023). Thus, Multiple Intelligences in this context function as an epistemological mechanism that broadens students' ways of understanding and internalizing knowledge.

Furthermore, findings regarding the reconstruction of learning planning indicate a shift from a uniform to a differentiated pedagogical approach. This shift aligns with the theory of differentiated instruction, which emphasizes tailoring learning to students' needs, interests, and learning profiles (Massey et al., 2023; Schnackenberg & Tomlinson, 2016). In this study, teachers no longer design

learning as a one-way transmission of knowledge, but rather as an ecosystem of learning experiences that supports various forms of cognitive participation. This perspective is also consistent with the Universal Design for Learning framework, which emphasizes providing multiple means of representation, expression, and engagement to ensure equal access to learning for all learners (Courtad, 2019; Veytia Bucheli et al., 2024). Thus, Multiple Intelligences serves as a conceptual framework for implementing inclusive and adaptive learning.

The findings of this study also indicate that implementing Multiple Intelligences contributes to the development of 21st-century skills, particularly collaboration, creativity, communication, and problem-solving. The project-based learning strategies, group discussions, and creative activities found in this study reflect the characteristics of 21st-century learning that emphasize active participation and knowledge production by learners (Baranovska-Vasiljeva, 2024; Firmansyah et al., 2022; Günzel & Brehm, 2024). In this context, Multiple Intelligences not only serves as a tool for understanding intelligence diversity but also as a mechanism for developing the transformative competencies needed in a knowledge-based society (Drigas et al., 2023; Gisore, 2023; OECD, 2021). This shows that Multiple Intelligences is highly relevant in contemporary education focused on the development of adaptive and creative capacities.

Compared to previous studies, these findings reinforce and expand the literature on the implementation of Multiple Intelligences in education. Previous studies tended to focus on the effectiveness of Multiple Intelligences in improving learning motivation or academic outcomes (Kornhaber, 2019; Li, 2024; Supaat et al., 2025; Wang, 2024), or on the development of Multiple Intelligences-based curriculum models (Batdı, 2017; Sholiah et al., 2020). However, most of these studies are still limited to the conceptual or experimental level. This study provides empirical contributions by showing how Multiple Intelligences are operationalized in everyday pedagogical practices, including in the planning, implementation, and evaluation of learning. Thus, this study fills the gap between theory and practice and provides a deeper understanding of the mechanisms of implementing Multiple Intelligences in the context of basic education.

In addition, this study also shows that Multiple Intelligences serves as a framework for transforming assessment systems. The shift from test-based assessment to authentic assessment reflects an epistemological change in how schools understand learning success. This perspective aligns with the theory of authentic assessment, which emphasizes assessing students' abilities through tasks that reflect real-world application of knowledge and skills (Abbasi, 2025; Kokotsaki

et al., 2016; Vlachopoulos & Makri, 2024). In the context of Multiple Intelligences, authentic assessment recognizes various forms of competence that written tests may not always measure. This shows that Multiple Intelligences not only influence the learning process, but also the educational evaluation paradigm.

Based on a synthesis of empirical findings and theoretical frameworks, this study proposes a new concept, "Multiple Intelligences as a Pedagogical Transformation Framework," as shown in Figure 1. In this framework, Multiple Intelligences is not only understood as a cognitive psychology theory but also as a pedagogical transformation framework that integrates three main dimensions: differentiation of learning planning, multimodality of learning implementation, and authenticity of the assessment system.
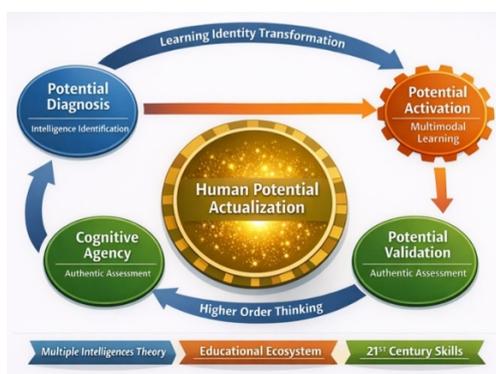
Figure 1. Multiple Intelligences as Pedagogical Transformation Framework

This model shows that Multiple Intelligences serve as an epistemological foundation that mediates systemic pedagogical transformation. This transformation not only affects learning strategies but also how schools understand student potential and educational success.

The contribution of this research is theoretical, empirical, and practical. Theoretically, this research expands understanding of Multiple Intelligences by positioning it as a framework for pedagogical transformation rather than just a theory of intelligence. Empirically, this research provides field-based evidence on the implementation of Multiple Intelligences in primary education in Indonesia, a context that remains relatively underrepresented in the international literature. Practically, this research provides implications for teachers, principals, and education policymakers regarding the importance of designing learning and assessment systems that accommodate the diversity of student potential.

However, this study has several limitations. First, this study focuses on teachers' and principals' perspectives, so it does not fully capture students' experiences. Second, this study was conducted in a specific geographical context, so the implementation of Multiple Intelligences in

other contexts may differ. Third, this study uses a qualitative approach, so it does not measure the impact of Multiple Intelligences on learning outcomes quantitatively.

Further research can develop this model through a mixed-methods approach to empirically test the relationship between the implementation of Multiple Intelligences and the development of 21st-century skills. In addition, longitudinal research is also needed to understand the long-term impact of Multiple Intelligences implementation on student development. Thus, this study provides a strong conceptual and empirical foundation for the development of education that is more inclusive, adaptive, and oriented towards holistic human potential development.

CONCLUSION

This study shows that Multiple Intelligences has evolved from a mere theoretical concept into an operational framework that has tangibly transformed pedagogical practices in elementary education. The main findings reveal that the implementation of Multiple Intelligences occurs through three interconnected systemic mechanisms, namely differentiated learning planning, multimodal learning implementation, and authentic assessment systems. Teachers no longer design learning as a process of uniform knowledge transmission, but as a pedagogical ecosystem that provides space for students to actualize their potential through various intelligence pathways. Multimodal learning strategies enable students to engage actively through discussion, practice, creative activities, and collaboration, which ultimately strengthens their cognitive engagement and learning identity. In addition, the transformation of the assessment system towards authentic assessment marks a paradigm shift from outcome-based evaluation to process- and potential-based evaluation, which better represents the complexity of students' abilities holistically.

These findings have important implications both theoretically and practically. Theoretically, this research extends the position of Multiple Intelligences from a cognitive psychology theory into a pedagogical transformation framework that mediates the relationships among learning structures, learning experiences, and the actualization of human potential. The resulting conceptual model shows that Multiple Intelligences function as an epistemological and pedagogical mechanism that enables schools to develop 21st-century competencies more systematically and sustainably. Practically, these findings emphasize the important role of teachers and educational institutions in creating an adaptive, inclusive, and learner-centered learning ecosystem. The implementation of Multiple Intelligences not only improves the quality of learning experiences but also strengthens

learners' capacity for reflective, creative, and adaptive thinking in facing future challenges.

This study makes a significant contribution to the development of educational literature by providing empirical evidence based on field data on how Multiple Intelligences are systematically operationalized in the context of primary education. However, this study has limitations, particularly in terms of the scope of participants, which is limited to school principals and teachers, and a specific geographical context, so the findings need to be generalized with caution. Future research should integrate students' perspectives and use a longitudinal or mixed-methods approach to understand the long-term impact of implementing Multiple Intelligences on students' cognitive, social, and learning identity development. Thus, this study not only strengthens the conceptual foundation of Multiple Intelligences but also opens new directions for the development of educational models more oriented toward the holistic activation and actualization of human potential.

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