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## Developing Multiple Intelligences Theory to Improve the Effectiveness of Adaptive Learning in MTs Hidayatus Shibyan Students

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### Abstract

***Developing Multiple Intelligences Theory to Improve the Effectiveness of Adaptive Learning in MTs Hidayatus Shibyan Students.*** This research aims to improve students' focus in the learning process thru the development and implementation of an adaptive learning model based on Multiple Intelligences theory. This research uses a development research type (Research and Development / R&D) with the goal of developing a new product to improve the effectiveness of adaptive learning in students. The research procedure includes product development, product validation, and product testing. The study population consisted of 78 students from MTs Hidayatus Shibyan, with a sample of 10 students from class IX. The research instruments included expert validation assessment sheets (content experts and language experts). Data analysis yielded expert validation test scores. The validation test results showed that the development of Multiple Intelligences theory to improve the effectiveness of adaptive learning was feasible for use with students. The content expert validation test scored 80 (very good), and the language/media expert validation test scored 78 (good), resulting in a final average score of 79.00 (good). A "good" category score indicates that product development aspects have met requirements and planning. It is

*recommended that this development be used as a medium for guidance and counselling services to help teachers deliver material so that students do not get bored, provide new innovations for guidance and counselling teachers, and create a more inclusive learning environment that is responsive to the individual needs of students at MTs Hidayatus Shibyan.*

**Keywords:** Multiple Intelligences, Adaptive Learning, Learning Effectiveness.

## **A. Introduction**

The Theory of Multiple Intelligences, proposed by Howard Gardner (2000), states that human intelligence is not limited to cognitive aspects alone, but encompasses various dimensions such as linguistic, logical-mathematical, kinesthetic, visual-spatial, musical, interpersonal, intrapersonal, and naturalist (Imamah, 2023). According to Gardner (2000), intelligence is the ability to solve problems that occur in life, the ability to raise new problems to be solved, and the ability to create something or offer services that will evoke appreciation within one's culture. Meanwhile, according to Katni (2015), intelligence is the ability to solve problems and create products that have cultural value. By understanding these variations, teachers can design teaching methods that are appropriate for students' learning styles and dominant intelligences, making the learning process more effective and inclusive. Learning tailored to students' dominant intelligence can increase engagement and learning motivation (Ropiyah & Awalya, 2021). Therefore, each child is treated differently according to their potential, providing opportunities for students to express themselves according to their intelligence (Utami & Idawati, 2023). Students who feel their unique intelligence is recognized tend to be more motivated to actively participate in the learning process. By using a multiple intelligences approach, learning can be more engaging and relevant for students, thus helping them reach their full potential.

The theory of multiple intelligences helps in the holistic development of students' potential, not just focusing on academic intelligence. Every teacher wants their students to be intelligent. However, realizing intelligent students is

not easy because teachers must have knowledge and willingness. Teachers must recognize the potential intelligence possessed by their students (Bahar, 2022). So that students can be given the opportunity to develop their various intelligences, such as interpersonal intelligence in group work, kinesthetic intelligence in physical activities, or musical intelligence in art-based tasks. This is important for preparing students to become balanced and competent individuals in various aspects of life.

Adaptive learning emphasizes the importance of tailoring teaching methods and materials to students' needs and abilities. This differs from traditional teaching methods, which assume that all students have the same level of ability. Adaptive learning utilizes technology to customize learning materials for each student. Adaptive learning systems use algorithms to assess students' ability levels and adjust learning materials based on evaluation results (Kholis, 2024). Many students do not like the teaching model delivered by educators, which is considered too monotonous, causing students to lose focus during learning (R. A. Putra et al., 2024). By applying the theory of multiple intelligences, teachers at MTs Hidayatus Shibyan can create more flexible learning strategies, adapting to students' strengths and weaknesses, so that each student can learn in the way that best suits their intelligence. This has the potential to reduce the achievement gap within the classroom.

In the context of education policy in Indonesia, the Merdeka Curriculum provides space for more flexible and personalized learning approaches. Because one of the teacher's desires is to enable students to master the affective, psychomotor, and cognitive aspects (Dewi et al., 2021) of Multiple Intelligences, as expected and implemented thru the current curriculum. The theory of multiple intelligences is very relevant to the spirit of the Merdeka Curriculum, which emphasizes project-based learning, formative assessment, and character development. Integrating this theory into the learning process can support the achievement of those curriculum goals.

Based on observations over 3 months of Mts Hidayatus Shibyan students regarding the effectiveness of adaptive learning, it is still not optimal during the learning process. This can be seen from the students' low ability to receive material, the lack of student involvement in the learning process, making the class feel monotonous and boring, and the lack of technology utilization in schools, which hinders the development of students' skills. The teaching methods used by the teachers at Mts Hidayatus Shibyan are also still conventional and monotonous. In the learning process, there is a lack of teachers in adapting learning models, methods, and media to students with hyperactive behavior.

Therefore, with this learning process, hyperactive students cannot focus on learning and experience difficulties in studying. Based on the observation results, it is suspected that one of the factors influencing this condition is the inefficiency of learning strategies in overcoming the challenges of hyperactive students in class IX Mts at Hidayatus Shibyan. By using a multiple intelligences approach, it is hoped that students' learning outcomes can improve because learning is more aligned with how students absorb information and solve problems. This allows every student to have an equal opportunity to excel, according to their individual intelligence.

## **B. Method**

The research conducted in this study is a type of development research or Research and Development (R&D), which aims to develop a new product or improve an existing one. This research is a development study of multiple intelligences theory aimed at improving the effectiveness of adaptive learning in students. The development study of adaptive learning effectiveness includes the product development process, product validation, and product testing. Thru this development research, the researcher attempts to develop a product that is effective in improving the effectiveness of adaptive learning in students. Endang Mulyatiningsih (2013: 161) states that research and

development aims to produce new products thru a development process. Research and development products in the field of education can include models, media, equipment, books, modules, evaluation tools, and learning materials such as curriculum and school policies. There are many development models that can be used, one of which is the ADDIE development model. ADDIE has 5 stages in development research: analysis, design, development, implementation, and evaluation (Juanda & Hendriyani, 2022). This research on the development of the effectiveness of adaptive learning specifically includes three processes: development, product validation, and product testing.

The data collection instrument used to measure the effectiveness of the Multiple Intelligences theory development in improving the effectiveness of adaptive learning is the expert validation assessment sheet. This assessment sheet consists of material expert validation and language expert validation. The effectiveness of learning is measured from the results of the expert validation test, where a score in the "good" category indicates that the aspects within the product development have proceeded according to needs and planning. Thru this validation result, the product of developing the Multiple Intelligences theory model is declared suitable for use.

The population in this study is the students of MTS Hidayatus Shibyan, totaling 78 students, as according to Sugiyono, population is the area of generalization consisting of: objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn. The study population is the entire set of research objects that will be studied. A sample is a portion of the number and characteristics possessed by the population (Sugiyono, 2022). The sampling model in this study is purposive sampling. Researchers selected 10 ninth-grade students from MTs Hidayatus Shibyan as a sample based on direct observation and interviews, guided by research indicators. The selection of a sample that only focuses on students suspected of having learning difficulties and a lack of focus (e.g., hyperactive students and those who show a lack of learning

effectiveness) makes the results of this study less likely to be widely generalizable to the entire population (78 students from MTs Hidayatus Shibyan) because the sample does not represent the diversity of the overall population's characteristics.

## **C. Discussion**

### **1. Multiple Intelligences**

Multiple intelligences is a theory proposed by Dr. Howard Gardner (1993) which states that there are seven criteria for multiple intelligences, which were later expanded to nine criteria (Fikriyah & Aziz, 2018). Manalu & Munthe (2022) stated that initially, the theory of multiple intelligences was in the realm of psychology, which then developed further into the field of education. The different types of multiple intelligences can be explained as follows:

- a. **Verbal-Linguistic Intelligence** Linguistic intelligence is a person's ability to process words, where they can communicate and be literate using effective, engaging, and easily understood language. People with this type of intelligence typically have a talent for becoming editors, poets, actors, writers, and journalists (Berliana & Atikah, 2023).
- b. **Mathematical-Logical Intelligence** Mathematical intelligence is a person's ability to solve problems and perform numerical calculations accurately. This intelligence also includes the ability to reason well (H. P. Putra & Dewantoro, 2022).
- c. **Visual-Spatial Intelligence** Spatial intelligence, or visual intelligence, is the ability to understand shapes, spatial concepts, position, location, three-dimensional forms, and more. This intelligence is often possessed by artists, architects, and interior decorators (Fadilah, 2019).
- d. **Kinesthetic Intelligence** Kinesthetic intelligence is a person's ability to solve a problem using partial or even whole-body movements. People with kinesthetic intelligence usually enjoy practicing and working directly with

their hands. During the learning process, individuals with kinesthetic intelligence typically demonstrate demonstrative activity (Putri, 2018). Someone with kinesthetic intelligence, once they have mastered their body movements, will experience many benefits such as being healthier, more independent, more confident, and their social-emotional development will improve (Isriyah, 2017).

- e. **Musical Intelligence** Musical intelligence is a person's intelligence or ability to describe, develop, express, and enjoy musical melodies and various sounds. This intelligence is usually possessed by songwriters, soap opera actors, and people who are very sensitive to music or sound (Widhianawati, 2011).
- f. **Intrapersonal Intelligence** Intrapersonal intelligence is an individual's ability to understand themselves and act based on their knowledge. Individuals with intrapersonal intelligence are aware of their strengths and weaknesses, their moods, temperament, and what they want (Maitrianti, 2021).
7. **Interpersonal Intelligence** Interpersonal intelligence is a person's ability to understand and cooperate with others. Individuals with interpersonal intelligence are typically cheerful, friendly, and easily get along with others (Tartila & Aulia, 2021).
- g. **Naturalistic Intelligence** Naturalistic intelligence is characterized by the intelligence of both brain hemispheres, the left and right brains. In its development, naturalistic intelligence requires adequate space for development to hone and sharpen both the right and left brains (Tekerop et al., 2021).
- h. **Existential Intelligence** Existential intelligence refers to a person's ability to understand and answer questions about life's existence, the meaning of life, the purpose of life, the existence of death, values in life, and so on, which are existential life issues (Lubis et al., 2024). It can be concluded from the nine types of intelligence mentioned above that not everyone can possess them, and each person may not only have one type of intelligence but also

two types. With this grouping of intelligence, we can understand that a person cannot be considered unintelligent just because their academic grades are low, as they may have a high level of intelligence in other areas. Therefore, it needs to be explored and developed so that the individual's learning development does not stagnate.

## **2. Implementing Multiple Intelligences in the Learning Process**

After recognizing the potential intelligence possessed by students, teachers must implement it in the learning process. The goal is for students to develop their potential into skills for the future. In implementing the theory of multiple intelligences in the learning process, teachers must empower all types of intelligence in every learning process with the aim that all students can discover their respective intelligences. There are several things teachers need to consider when empowering all types of intelligence in students, namely:

- a. Teachers must recognize the character and intelligence possessed by their students. The way to recognize and measure the intelligence possessed by students is by giving them a questionnaire about their interests, talents, and habits, referring to the theory of multiple intelligences. After that, teachers must analyze the results of the questionnaire completed by the students. Additionally, teachers must observe directly outside of their teaching hours.
- b. Teachers must create a plan in the form of a BK RPL (Service Implementation Plan). When preparing the BK RPL, teachers must develop a good strategy for developing the intellectual potential of their students. Additionally, teachers must empower all types of intelligence so that all students can discover their individual intelligences.
- c. Teachers must create variety in their learning process, such as using learning media, employing different teaching methods and models, and varying the forms of student evaluation. Therefore, teachers should not be

monotonous in teaching their students, so that students can develop their intellectual potential well.

In optimizing the dominant intelligence of each student by integrating each subject with the intelligence possessed by the student. Each subject has its own characteristics in shaping the dominant intelligence of each student. The following are subjects that can develop dominant intelligence in students according to the MTS Hidayatus Shibyan curriculum, including: 1. Linguistic Intelligence, which can be developed from language and literature subjects such as: Indonesian, English, French, and Sundanese. 2. Logical-Mathematical Intelligence, which can be developed from mathematics subjects. Mathematics is a subject that involves calculation.

1. Spatial Intelligence, which can be developed thru the Information and Communication Technology (ICT) subject. ICT is a subject that heavily utilizes visual media. Although all subjects can use visual media as a learning tool, ICT has a significant role in developing spatial intelligence.
2. Musical Intelligence, which can be formed from cultural arts and music subjects (SBK) and music. SBK and music subjects play an important role in shaping musical intelligence, such as playing musical instruments, singing, and so on.
3. Naturalistic Intelligence can be formed from Natural Sciences (IPA) subjects. The characteristics of IPA subjects are very suitable for developing naturalistic intelligence. Learning outside the classroom is something very enjoyable for students who have dominant naturalistic intelligence.
4. Kinesthetic-Bodily Intelligence can be developed thru physical education. Physical education is a subject that involves a lot of movement. Students with dominant kinesthetic-bodily intelligence cannot sit still or quietly during learning.
5. Interpersonal Intelligence, which can be developed thru Civics (PKn) and Social Studies (IPS) subjects. By studying PKn and IPS, interpersonal

intelligence can be enhanced. Interpersonal intelligence is the ability to understand and be sensitive to the feelings, motivations, character, and temperament of others. Thru social studies and civics lessons, students can understand the characteristics of other people. Beside social studies and civics, language subjects also play an important role in developing interpersonal intelligence. Interpersonal intelligence involves communicating well, which can be supported by language subjects.

6. Intrapersonal intelligence can be developed in Civics (PKn) and Social Studies (IPS) subjects. In addition to interpersonal intelligence, IPS and PKn subjects can also cultivate intrapersonal intelligence. Students with dominant intrapersonal intelligence can usually express their desires well, without imposing their will, and are aware of their strengths and weaknesses. Therefore, they are confident when they feel capable and, conversely, less confident when they feel incapable.
7. Existential Intelligence can be formed in religious subjects, both in Islam and Christianity. In developing existential intelligence, one can ask about our existence, our origins, and the purpose of our lives. Reading holy books, religious books, philosophy books, and spiritual books can help develop existential intelligence.

Additionally, the way to optimize the dominant intelligence in each student is by developing extracurricular activities in schools. Students can choose extracurricular activities that align with their talents and intelligence. Here are examples of integrating extracurricular activities with the development of dominant intelligence in students: (1) Students with dominant linguistic intelligence can be directed toward journalism and English club extracurricular activities. (2) Students with dominant logical-mathematical intelligence can be directed toward Math Club extracurricular activities. (3) Students with dominant spatial intelligence can be directed toward photography, robotics, and graphic design extracurricular activities. (4) Students with dominant musical intelligence can be directed toward

music, Marching Band, and Choir extracurricular activities. (5) Students with dominant naturalistic intelligence can be directed toward Science Club extracurricular activities. (6) Students with dominant kinesthetic-bodily intelligence can be directed toward sports extracurricular activities, such as soccer, futsal, basketball, and volleyball. (7) Students with dominant interpersonal and intrapersonal intelligence can be directed toward Scout and Red Cross Youth (PMR) extracurricular activities. (8) Students with dominant existential intelligence can be directed toward Islamic Religious (Rohis) and Christian Religious (Rokris) extracurricular activities.

Adaptive learning is defined as the process of generating unique learning experiences based on students' personalities, interests, and performance to achieve goals such as improving students' academic performance and student satisfaction (Liu & Jiang, 2024). By integrating the theory of Multiple Intelligences, it is hoped that students' learning outcomes can improve because learning becomes more aligned with how students absorb information and solve problems. This approach also aims to improve students' focus in the learning process. Overall, it is hoped that this can increase students' learning motivation and help them reach their full potential, as well as potentially reduce the achievement gap within the classroom (Kelly & Tangney, 2006).

### **3. Developing Multiple Intelligences Theory to Improve the Effectiveness of Adaptive Learning**

The research results show that Multiple Intelligences (MI) Theory is suitable for use in adaptive learning, with a material expert validation score of 80 (very good category) and a language expert validation score of 78 (good category), resulting in an average of 79 (good category). This indicates that the developed modules have met quality standards and are relevant to diverse learning needs. This finding strengthens MI's position as a valid approach to improving the effectiveness of intelligence-differentiated learning.

The research aligns with the MI implementation strategy, which emphasizes curriculum and learning material design based on Gardner's eight intelligences. Integrating MI into LMS and SIM allows for more inclusive methods and assessments, as explained by Annamalai et al. (2025), Walela (2024), and Hairudin et al. (Hairudin et al., 2023). Expert validation indicates that the developed product has been designed in accordance with these principles, supporting the diversity of student learning styles.

Research also supports the use of adaptive technologies such as adaptive testing and multimodal learning analytics, as mentioned by Perveen (2018) and Liu & Jiang (2024). Although not explicitly mentioned in the research findings, the high validation scores indicate that technological aspects and flexible assessment were considered in the module development. This is important to ensure that students with diverse intelligence profiles can learn optimally and be assessed fairly.

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With good validation scores, the MI-based module can be used as a reference in developing more inclusive and adaptive education policies. This research supports the idea that the MI approach is not only theoretical but also practical and can be effectively implemented in the Indonesian educational context. This aligns with learning objectives that value the diversity of students' potential and encourage personalized learning. However, implementation in the field faces serious challenges, particularly in terms of teachers' understanding of MI theory and limitations in professional training (Arias-Macias, 2025; Walela, 2024). This means that even tho the development product has been validated, its successful implementation is highly dependent on the readiness of human resources.

The validity of the module indicates that the material development aligns with MI principles, but challenges such as limited infrastructure and resources (e.g., musical instruments, movement space, technology) are major obstacles to its widespread implementation (Rumfot et al., 2024). This indicates a gap between the ideal MI-based design and the reality of educational facilities in many schools. Without adequate logistical support, the potential of the developed modules cannot be optimally maximized.

Research also indicates that resistance to methodological changes and the incompatibility of the local curriculum are significant obstacles to the implementation of MI (Nurzaidah & Ruslaini, 2025; Zhou & Hedges, 2023). Although the module has been well-validated, successful implementation is heavily influenced by policy support, curriculum flexibility, and the readiness of educational institutions to transform. This confirms the importance of

synergy between pedagogical innovation and systemic reform.

Although the MI module has been internally validated, the limited empirical evidence from MI studies in general remains a significant concern. Many previous studies have methodological weaknesses such as small sample sizes and reporting bias (Ferrero et al., 2021). Therefore, further research with a strong experimental design is needed to test the effectiveness of the MI module in significantly and sustainably improving student learning outcomes.

The limitations of this study lie in its focus and the generalizability of the results. Although this research aims to develop a usable product, empirical data on the effectiveness of Multiple Intelligences theory development was measured only based on expert validation tests (content experts and language experts), not from student performance data or learning outcomes directly after product implementation over a specific period. Additionally, the sampling method, which only selects 10 ninth-grade students based on research indicators without using random techniques, could affect the generalizability of the research findings to the broader population of MTs Hidayatus Shibyan students. This indicates that conclusions regarding the increased effectiveness of adaptive learning are based more on the theoretical feasibility and validation of the product, rather than on measuring specific and quantitative impacts on academic improvement or student motivation on a large scale within the population.

#### **D. Conclusion**

The results of this research and development (R&D) study indicate that the development of Multiple Intelligences theory to improve the effectiveness of adaptive learning in MTs Hidayatus Shibyan students is feasible for use. This qualification is proven thru expert validation tests: the material expert

validation test received a score of 80 (very good category) and the language expert validation test received a score of 78 (good category). The final average score of 79.00 (good category) indicates that the aspects of product development have proceeded according to needs and planning. In addition, supporting factors for implementation in schools include positive teacher-student interaction, the availability of complete facilities and infrastructure, and good cooperation with external parties.

It is recommended that Howard Gardner's theory of Multiple Intelligences be used as a service medium to help guidance and counselling teachers deliver material so that students do not feel bored. Thru this development, it is hoped that new innovations will be created for teachers in providing guidance and counselling services. This suggestion focuses on utilizing validated products as flexible and personalized learning aids, aligning with the spirit of the Merdeka Curriculum, which emphasizes project-based learning and character development.

The main implication of this research is that the development of Multiple Intelligences theory can have a significant impact on improving the effectiveness of adaptive learning at MTs Hidayatus Shibyan. By understanding and identifying the various types of student intelligence, teachers can design teaching methods that are more suited to the needs and potential of each student. This is expected not only to increase learning motivation, but also to help students understand the material in a more meaningful and relevant way. Specifically, this product has implications for creating a more inclusive learning environment that is responsive to students' individual needs, thus enabling the goals of guidance and counselling to be realized

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