Improving Quality of Education in Elementary School:
Overcoming Any Issues of Elementary Education in Smart Society 5.0

Differentiated Learning Strategies in Increasing Students' Multiple Intelligence

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Abstract. Students' diverse learning needs require teachers to be able to determine learning strategies. Teachers must be able to recognise and understand students' intelligence and develop it for future success. Differentiated learning is an attempt to adjust the learning process in the classroom to meet the individual learning needs of each learner. Differentiated learning is flexible, meaning learners learn with peers of similar or different abilities according to their strengths and interests. Gardner's theory states that intelligence is not only Intelligence Quotient (IQ) Intelligence is not only about a child's high IQ level, but there are other aspects of intelligence found in children. Every child is unique, they have different ways of absorbing and processing the information they receive. The research method used is qualitative with observation and interview techniques. This research was conducted on teachers and students of grade 4 elementary school. The results showed that differentiated learning is able to facilitate the needs of diverse students. Through differentiated learning all students' learning needs can be accommodated so that it has an impact on the development of students' multiple intelligences.

Keywords: differentiated learning, multiple intelligences

INTRODUCTION

Indonesian human beings as a whole can be formed if they have intelligence. Human intelligence is different according to their own characteristics and potential, which is closely related to the concept of multiple intelligences. The concept of multiple intelligences was expressed by Howard Gardner, according to him, multiple intelligences consist of eight types, namely linguistic verbal intelligence, mathematical logical intelligence, spatial visual intelligence, musical intelligence, kinesthetic intelligence, interpersonal intelligence, naturalist intelligence, and intrapersonal intelligence (in Masfiroh, 2014). These eight concepts of intelligence are expected to be able to change the teacher's paradigm about intelligence. So far, teachers have assessed smart and unintelligent students based on logical-mathematical abilities alone. In fact, in reality all students are intelligent, it's just that the types of intelligence are different. For this reason, teachers need to understand the concept of multiple intelligences in order to understand students and determine the right strategy in developing each student's intelligence.

Intelligence according to Steven J. Gould of Harvard (1994) is a mental capacity that includes the ability to reason, plan, solve problems, think abstractly, handle complex ideas, learn from experience, and can be measured by intelligence tests that are not influenced by culture and genetics. intelligence is generally stable during childhood, but after childhood there is little change (Suarca, K., Soetjiningsih, S., & Ardjana, I.E., 2016).

Every human being in this world is created unique and special, no one person is exactly the same even if they are twins but there must be differences between them. Likewise with students in the classroom, they are certainly not a blank sheet of white paper. Each child has different characteristics and potentials that must be considered by the teacher. Tomlinson (2013) in his book explains the diversity of learners in terms of 3 different aspects, namely: (1) learning readiness; (2) learning interest; and (3) learning profile.

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In the aspect of potential development, current education is oriented only towards cognitive abilities, has not been able to develop the potential of students in accordance with their strengths so that, ignoring other intelligences, or often referred to as multiple intelligences that each student has. Cognitive ability is important in a person's life, but it is not the only factor that determines whether or not a person is successful. Each individual has a number of different potentials inherited from generation to generation which is a heredity factor as an initial ability he has, and all of that potential will be able to develop properly through educational stimulation and efforts from the environment. So that each student is different from one another, each student will develop knowledge, attitudes and skills in different ways. One of the innate potentials possessed by students neurobiologically is the brain. Its functional specialisation can lead to the development of unique human traits, such as different learning styles and unique spoken and written languages, in Munajah, R., & Supena, A. (2021).

Differentiated learning is a way in the teaching and learning process where learners can learn material according to their own abilities, choices and needs so that they do not feel failed and frustrated in their learning experience (Breaux and Magee, 2010; Fox & Hoffman, 2011; Tomlinson, 2017).

Currently, differentiated learning in primary schools is one of the topics of discussion in the implementation of Merdeka Curriculum. This differentiated learning is an interesting topic to research. Various studies have been conducted to identify the benefits and challenges of implementing differentiated learning in primary schools. In the context of the Merdeka Curriculum, the implementation of differentiated learning is expected to provide significant benefits in improving student learning outcomes and motivation with student-centred learning.

There are three approaches to differentiated learning: content, process and product. 1). Content differentiation is what learners learn, in terms of curriculum and learning materials. 2). Process differentiation is how learners process ideas and information, which includes how learners choose their learning style 3). Product differentiation is learners showing what they have learnt (Wasih et al., 2020 in Aprima, D., & Sari, S., 2022). Although differentiated learning is not new, its application in teaching and learning activities is still rarely done by teachers. Teachers still feel confused in implementing differentiated learning, this can be seen from the disruptive attitude of teachers who feel that differentiated learning is burdensome learning for teachers. This misconception makes it difficult for teachers to implement differentiated learning.

This research is motivated by the importance of understanding students' learning styles so that teachers are able to determine strategies that can facilitate students' diverse intelligences. This research aims to study how teachers integrate multiple intelligence theory and differentiated learning in the classroom, as well as the impact on student learning and performance. The results of this study are expected to be a reference for educators and various parties in applying differentiated learning approaches and integrating multiple intelligence theory.

METHOD

This research uses a qualitative approach through the case study method. Qualitative is research that is more focused on describing the nature or nature of the value of a particular object or symptom (Abdussamad, 2021). Stake (in Abdussamad, 2021), discussing case studies, would emphasise a qualitative approach, naturalistic in nature, based on culture and phenomenological interests.

Information gathering techniques are divided into two parts, namely: (1) Literature research includes theories and information collection techniques related to multiple intelligences and differentiated learning; (2) Field research includes field observations, interviews with informants, namely experienced teachers. The subjects of this research are grade 4 primary school teachers and students who have implemented the Merdeka curriculum in Campaka sub-district, Purwakarta district.

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RESULTS

Based on the results of interviews and observations that have been conducted by teachers implementing differentiated learning and applying multiple intelligence theory in IPAS subjects, researchers found the following results:

1. Differentiated learning strategy

Basically, teachers have understood the concept of differentiated learning. They understand that differentiated learning is learning that is adapted to the needs and learning styles of students, not discriminating or differentiating each student. In this case, teachers need to understand students' characters and adjust learning accordingly. In line with respondents' understanding, differentiated learning is an effort made by teachers in adjusting the learning process in the classroom to fulfil the learning needs of each student. The adjustments in question relate to learning interests, learning profiles, and student readiness to achieve learning outcomes. Explained by Marlina (2019), differentiated learning is the customising of students' interests, learning preferences and readiness to achieve better learning outcomes. Differentiated learning is not about individualised learning. However, it accommodates students' learning strengths and needs with independent learning strategies. She further explained that in differentiated learning, teachers are required to understand students by continuously building awareness about students' strengths and weaknesses, observing, assessing students' readiness, interests, and learning preferences. In addition, teachers must also use all preferences about how students show their learning preferences (related to content, process, product and learning environment). So when teachers continue to learn about the diversity of their students' potential, professional, efficient and effective learning will be actualised (in Herwina W., 2021).

Teachers or respondents understand the strategies that can be used in differentiated learning, which are content, process and product differentiation. Teachers can use one or combine these strategies in learning. According to (Marlina, 2019:11) differentiated learning can be applied by 1) content differentiation; 2) process differentiation; 3) product differentiation.

1. Content differentiation includes learning readiness, learners' interests, and learners' learning profiles in the learning process. In mapping students' learning readiness, there are several perspectives that can be used as indicators. The teacher has an important role in exploring students' interests, so that it can support the achievement of meaningful learning. The teacher makes a mapping of learning needs based on learning profile indicators that can provide opportunities for students to convey the desired methods in learning. In the mapping of learning readiness, the teacher gets the learners' interests, so that it can support the achievement of meaningful learning.

2. Process differentiation, teachers have a role to analyse learning carried out both independently and in groups. Based on (Faiz, 2022: 2850), process differentiation includes: 1) Level of understanding, meaning that at this stage students are ensured to build the same understanding in the material being studied, but still support the differences that exist; 2) Providing trigger questions as a trigger for learners to explore the material being studied. 3) Creating an individual learner agenda, such as creating a task list record that contains learner work according to their needs; 4) Teachers facilitate learners' time duration in completing tasks, in this section teachers need to pay attention to learners who need to be given additional time in doing tasks according to their abilities; 5) teachers develop visual, kinesthetic, and auditory learning styles; 6) teachers classify groups according to learners' abilities and interests.

3. Product differentiation is a form of student understanding of the learning material shown to the teacher. The resulting product allows the teacher to assess students' abilities and as a determinant for further learning. The types of products produced will be very diverse, including writing observations, presentations, videos, songs, and so on. Product making aims to determine the level of student understanding related to the material studied both individually and in groups. According to (Faiz, 2022: 2848) there are two focal points contained in product differentiation which are challenge and creativity. However, in this case the teacher needs to provide clear indicators for students to make a product with the

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help of twin work. Although teachers provide freedom in making products according to their interests and learning needs, there needs to be clear provisions. The role of the teacher is very important in determining the work of students including; 1) determining the indicators of the work to be achieved; 2) the content in the product must be able to appear; 3) planning a clear learning process; 4) and designing the work expected from the product (Faiz, 2022: 2847).

Differentiated learning basically does not discriminate between students, but there is a different process for each student according to the student's learning needs. According to Marlina (2019:3) Basically, differentiated learning is a learning approach that recognises that each student has differences and dynamic properties. In line with what teachers say in the field who interpret differentiated learning is not differentiating or compartmentalising, where smart students are grouped with smart ones and less smart ones are grouped with less smart ones but students are grouped according to their needs and learning styles.

Learning style is a consistent way that students capture stimulus or information, remember, think and solve problems. Not everyone has the same way. This learning style is closely related to a person's personality, which is certainly influenced by their education and developmental history. The reality is that students do not all learn in the same way. Treating them in the same way would be detrimental to them, so as not to achieve high learning effectiveness. Teaching methods should be adapted to students' learning styles (Fatonah, S., 2009). From the results of interviews and observations, teachers have conducted assessments to find out the learning styles of students, found three learning styles of students namely audiotory, visual and kinesthetic. Then the teacher plans to accommodate all students' needs in learning by implementing differentiated learning whether it is content, process, product or a combination of the three.

In conducting diagnostic assessments, teachers pay attention to several characteristics in determining test instruments for students, then develop them into diagnostic assessment tests. In general, human learning styles are divided into three groups, namely visual learning styles, audiotory learning styles and kinesthetic learning styles. Research conducted by Mary L. Wilson, a psychologist on learning styles, found that each type of learning style has characteristics. This makes it easier for each individual to be able to determine the right learning style for him. These characteristics are as follows (in Sufianti, A. V. 2022).

1. Characteristics of someone who has a visual learning style
    a. Tidy and organised
    b. Speak fast
    c. Good long-term planner and organiser
    d. Attentive to detail
    e. Prioritises appearance
    f. Good speller and can see the actual words
    g. Remembers what is seen, rather than what is heard
    h. Remembers by visual association
    i. Usually not distracted by noise
    j. Have weaknesses in remembering verbal instructions and often ask others to repeat them
    k. Fast and diligent reader
    l. Prefers reading to being read to
    m. Scribbles meaninglessly while talking on the phone and in meetings
    n. Often answers questions with short yes or no answers
2. Characteristics of someone who has an audiotory learning style
    a. Talking to yourself often
    b. Distracted by noise
    c. Reading aloud
    d. d. Enjoys reading and listening aloud
    e. Able to repeat back and imitate tones, rhythms and sound colours

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    f.   Has a weakness in writing, but is great at telling stories

    g.   Speaks regularly

    h.   Loves music

    i.   Learn by listening and remembering what is discussed

    j.   Enjoys talking, discussing, and explaining things at length

3. Characteristics of someone who has a kinesthetic learning style

    a.   Speak softly

    b.   Body language in touch

    c.   Standing up when talking to others

    d.   Move around a lot

    e.   Memorise by walking and looking

    f.   Uses fingers as cues when reading

    g.   Uses many body gestures

    h.   Unable to sit still for long durations

    i.   May have bad writing

From the diagnostic assessment conducted by the teacher, the following results were found:
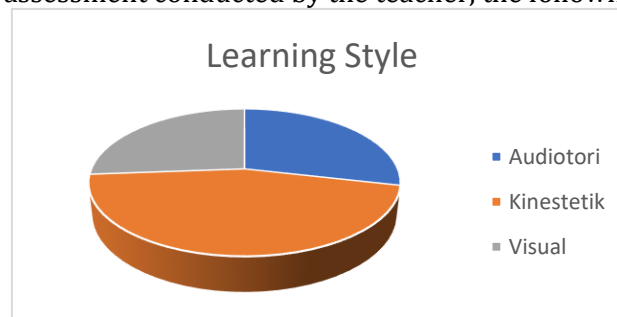
Figure 1. Learning Style Result

2. Students' Multiple Intelligence Theory

As a result of interviews and observations with teachers or respondents, teachers are not very familiar with and understand the theory of multiple intelligences. However, according to him, this theory is related to students' learning styles and differentiated learning. He said that actually teachers have developed the theory of multiple intelligences indirectly. Intelligence according to Steven J. Gould of Harvard (1994) is a mental capacity that includes the ability to reason, plan, solve problems, think abstractly, handle complex ideas, learn from experience, and can be measured by intelligence tests that are not influenced by culture and genetics. intelligence stabilises gradually during childhood, and after that there is little change (Suarca, K., Soetjiningsih, S., & Ardjana, I. E., 2016).

The concept of multiple intelligences was developed by Howard Gardner. Intelligence is an ability or capability to handle specific problem content in the world. The key points of Howard Gardner's theory of multiple intelligences are as follows:

1. Everyone has eight intelligences, it's just that each person's profile may be different. Some are high in all types of intelligence while others are only average and high in two or three types of intelligence.

2. Everyone can develop each of their intelligences, through enrichment, support and good teaching.

3. Intelligences generally work together in complex ways. In daily activities, intelligences are interrelated in a series, for example, when participating in a football match there is the activity of kicking the ball (kinesthetic), orientating oneself on the field (spatial) and protesting to the referee (linguistic and interpersonal).

4. There are many ways to be intelligent within each category. For example, someone who is linguistically intelligent may not be good at writing, but is good at telling stories and speaking memorably (Masfiroh, 2014).

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Multiple intelligences consist of eight intelligences including linguistic verbal intelligence, mathematical logical intelligence, spatial visual intelligence, musical intelligence, kinesthetic intelligence, interpersonal intelligence, naturalist intelligence, and intrapersonal intelligence.

1. Verbal Linguistic Intelligence is the intelligence of a person who is sensitive to the sound, structure, meaning, function of words and language. The characteristics of children who have good linguistic intelligence are that they can communicate effectively orally and in writing, enjoy arguing, have abilities in various languages, are good at making literary works, easily remember quotes or other people's words and are rich in vocabulary (Masfiroh, 2014).

2. Logical Mathematical Intelligence is the intelligence for logical thinking, dealing with numbers and having good reasoning for a long line of thought. The characteristics of children who have logical mathematical intelligence are having the ability to count, predict things, always experiment in finding a pattern of a phenomenon, being able to induce and conclude (Masfiroh, 2014).

3. Visual spatial intelligence is the ability to create precise designs or views of the world. Children with visual spatial intelligence are able to design buildings or areas, read maps and charts, create two- and three-dimensional works, and have the ability to combine colours well (Masfiroh, 2014).

4. Kinesthetic intelligence is the ability to control and organise the movements of the body. Generally, children who have kinesthetic intelligence are children who have hobbies related to body movements such as sports, dancing, carving and other hobbies (Masfiroh, 2014).

5. Musical intelligence is characterised by children who have the ability to create and appreciate rhythm, tone and tone colour and the ability to appreciate musical forms. The characteristics of children who have musical intelligence are happy to sing and memorise various songs, have the ability to play musical instruments and are able to recognise various types of sounds around them (Masfiroh, 2014).

6. Interpersonal intelligence is the intelligence to digest and respond to the moods, motivations and desires of others. Children who have interpersonal intelligence usually have the ability to care for and educate others, communicate effectively, sympathise with others, lead and organise others and can mediate conflicts (Masfiroh, 2014).

7. Naturalist intelligence is an ability that is closely related to the understanding of living things and their existence. Children with natural intelligence are generally able to analyse, care for and maintain various flora and fauna, and preserve the environment (Masfiroh, 2014).

8. Interpersonal intelligence is the ability to understand one's own feelings and have good social-emotional skills. Someone who has interpersonal intelligence is generally able to manage emotions well, motivate themselves, not easily discouraged and work more than talk (Masfiroh, 2014).

The teacher tried to conduct an intelligence test to the students, and the results of the test were as follows:
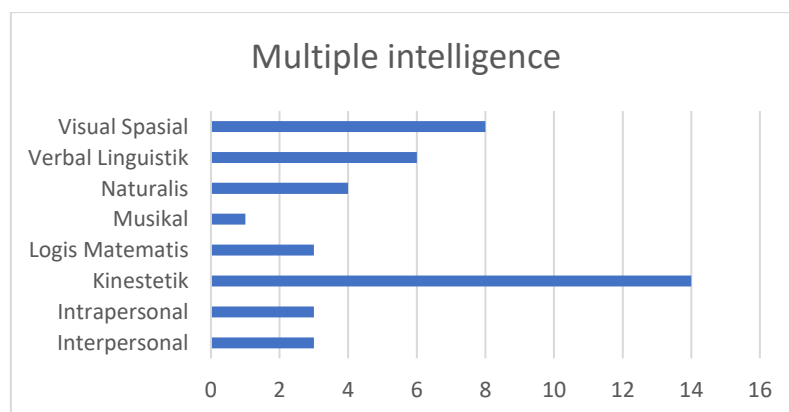

Figure 2. Multiple Intelligence Graphic

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The researcher made observations of the learning carried out by the teacher. From the observation, it was found that the teacher had implemented differentiated learning and was able to develop students' multiple intelligences, this was reinforced by the results of interviews with students, where students felt happy and students' learning motivation increased. The results of this study indicate that differentiated learning is able to facilitate the diverse needs of students. Through differentiated learning all students' learning needs can be accommodated so that it has an impact on the development of students' multiple intelligences.

CONCLUSION

Based on the results of the study, it was found that differentiated learning strategies have been carried out by teachers in IPAS subjects. However, in the implementation of differentiated learning, teachers still experience obstacles in determining the form of content, process, or product strategies. This is because teachers do not fully understand the character of students, so that students' intelligence has not fully developed. These obstacles can be overcome by teachers and researchers by developing differentiated learning strategies and integrating students' multiple intelligence theory. Learning is adjusted to students' learning styles, in this case students' learning styles are closely related to the development of students' multiple intelligences. Based on the research results, it shows that differentiated learning is able to facilitate the diverse needs of students. Through differentiated learning all students' learning needs can be accommodated so that it has an impact on the development of students' multiple intelligences.

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