OVERCOMING STUDENTS' DIVERSITY THROUGH DIFFERENTIATED LEARNING: AN ANALYSIS OF TEACHER PRACTICES IN MADRASAH

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ABSTRACT

Student diversity is a challenge for teachers when implementing teaching and learning process. Teachers have a key role in managing student characteristics to identify and respond to individual student differences, especially in the aspect of numeracy skills. The purpose of the research is to analyse teachers' strategies in overcoming student diversity through differentiated learning. Qualitative approach was used as the research approach. The data collection process began with observation and continued with interviews with six teachers who teach science and mathematics subjects at MTs Almaarif 01 Singosari. The results showed that teachers have diverse strategies in overcoming student diversity, especially in measuring numeracy skills. In an effort to implement differentiated learning, teachers provide different student activities, such as conducting a pre-test before learning takes place, providing different reading materials and differentiating the difficulty level of student assignments according to their abilities. Initial assessment before learning takes place is an important thing to do so that teachers can design learning methods appropriately, especially in materials related to numeracy skills. Continuous assessment is also carried out as an evaluation material for teachers when implementing differentiated learning. Collaboration with fellow science and

math teachers is also used as a way to understand the level of students' numeracy skills. This is done because math and science lessons have a material connection that makes counting skills as an indicator.

Keywords: Diversity, teacher, madrasah, differentiated learning

INTRODUCTION

Tim Schools play an important role as a facility that not only offers education, but also ensures learning. In this case, the quality of educators is the main prerequisite in building a superior and optimal learning system (Indrawati, 2019). Teachers as educators not only play the role of curriculum implementers, but are also obliged to create a bridge between the needs of each diverse student and the achievement of more challenging learning objectives (Hammond in Hirsh, Å., & Segolsson, M, 2020). Teachers as professional educators need to develop reflective skills and practical abilities related to teaching (Toom, Tiilikainen, Heikonen, Leijen, Mena & Husu, 2019). Teachers' understanding of student diversity before learning takes place is an important step to facilitate a series of learning processes that is carried out (Bergan-Roller et. al., 2018). Every teacher needs to first identify student diversity before moving on to the next material that requires deeper understanding. This diversity includes differences in learning styles, academic abilities, speed in understanding lessons, as well as interests and personality (Wulandari, 2022). All these differences present uniqueness as well as gaps that can be both opportunities and challenges for students when undergoing the learning process (Morin & Herman, 2022). Student diversity is a form of inclusive education that requires attention from all elements, from teachers as educators, homerooms, parents to policy makers (Ansori et al., 2022). Teachers play a major role in ensuring every student's development from various important aspects that support students' basic abilities. These aspects are developed thoroughly and continuously. One important aspect that requires development is the cognitive aspect.

In this regard, the paradigm crisis is still a fundamental problem related to student diversity, especially in the cognitive aspect. The paradigm crisis means that there is a gap between the goals to be targeted and the educational paradigm to be applied. Many teachers still apply conformistic and uniform learning in the midst of demands for unique and divergent behaviour patterns (Suardi, 2018). The diversity challenge faced by teachers includes cognitive abilities such as students' numeracy skills. Numeracy skills are a fundamental requirement that must be mastered by students as a provision for learning. Numeracy begins with understanding the concept of numbers, their symbols, size, space, position, and the ability to develop logical, creative and analytical thinking patterns (Khan & Yuliani, 2016). Numeracy is closely related to mathematical logic. In addition, numeracy skills are also important in other materials such as science. According to Indrawati (2019), numeracy has psychological benefits in helping students develop logical thinking skills and making it easier for them to understand other sciences along with the development of language skills.

Unfortunately, the fundamentalism of numeracy skills is still contrary to the expected reality. Indonesia has been facing a learning crisis for a very long time. Studies and results of the PISA exam have explained that many students in Indonesia experience problems in understanding reading literacy and applying basic mathematical concepts (Wiguna & Tritaningrat, 2022). The Indonesia National Assessment Program (INAP) conducted a study comprising eighth grade students in two provinces in Indonesia in 2017. Based on the study, the results revealed that students' mathematical literacy competence was still below average, with a score of only 27.51 on a scale of 0 to 100, which indicates a very poor level of ability. In addition, another study was also conducted in 2018, which found that students' ability to solve simple mathematical questions showed no difference between students who had just entered the basic education level (SD) and students who graduated in the upper secondary education level (SMA) (Indrawati, 2019). Furthermore, further research on numeracy skills, especially in mathematics, was also conducted in the 2019 Program for International Student

Assessment (PISA). The results showed that Indonesian students were still ranked sixth from the bottom, occupying the 74th position out of 79 countries in mathematics and literacy (Andari, 2022).

In response to the existing information, the Government of Indonesia stated that the low mathematical competence of students in Indonesia must be improved more seriously, by improving the competence of educators. In his presentation, it is expected that educators can focus more on implementing mathematical concepts in social life, and these related skills need to be continuously developed (Indrawati, 2019). Literacy not only measures the ability to analyse the content of reading, but also to understand the concepts contained in the reading. Numeracy skills are focused not only in mathematical materials, but also in how students can apply mathematical concepts in real situations (Andari, 2022). In addition, to address the diversity of numeracy abilities among students, a differentiated learning approach is considered an effective way to respond to this diversity.

Differentiated learning can be interpreted as an approach that contains a cyclical process of understanding student characteristics based on differences. Differentiated learning places that students have diverse and dynamic (changing) characteristics (Marlina, 2019). The application of differentiated learning aims to create a student-centred learning atmosphere and is designed to get out of the existing comfort zone, so that it matches the competencies of different students. Thus, students are free to deeply explore the discussion delivered by the teacher (Usman et al., 2022). The implementation of differentiated learning is supported by support from the school regarding the implementation of inclusive school policies. This includes structured communication between the school committee, teachers and parents.

Marlina (2019) mentioned that there are several elements that form an important foundation in the contribution of learning and these elements need to be considered in detail. The following is a more detailed explanation of these elements:

1. Differentiated response: Teachers need to provide diverse responses according to students' individual characteristics.
2. Learning Strategy: The selection of appropriate learning strategies is needed to help students achieve learning objectives. Teachers should consider various methods and approaches to present the material in an interesting and understandable way to the students.
3. Learning Environment: Environmental factors in the classroom also affect the learning process. Teachers need to create a conducive and supportive environment for learning, including classroom organisation, use of technology and a positive atmosphere.
4. Learning Materials: The selection of learning materials that are relevant, up-to-date and in line with students' needs will increase the attractiveness of learning. Interesting and fun materials will make students more eager to improve their learning.
5. Learning Design: Good learning design involves careful planning, including setting clear learning objectives, determining appropriate teaching strategies and establishing appropriate assessment methods.
6. Assessment and Evaluation: The assessment and evaluation process is an important part of learning. Teachers need to use a variety of assessment instruments to measure students' understanding and progress. The results of these assessments will provide meaningful feedback for further development.

Differentiated learning is one of the efforts formulated in the Merdeka Curriculum implementation program. The Merdeka Curriculum is the result of a transformation from the name of the prototype curriculum. This curriculum is designed as a curriculum framework that is more flexible and focused on developing the uniqueness of each student's abilities (Rahayu, et al., 2022). Learning freedom for teachers or students is the main focus in independent learning. In early 2022, Indonesia launched the independent curriculum. In its launch, around 2,500 schools in Indonesia were formally appointed as the driving schools to implement the curriculum. Being named a driving school means

that the school is considered to have met the criteria so that it can implement the trial implementation of a differentiated learning system. (Usman, et al, 2022).

MTs Almaarif 01 Singosari is a private madrasah school in East Java that has adopted the Merdeka Curriculum. The implementation of this curriculum began in the 2022-2023 school year. Initially, this application was only carried out in grade VII. Meanwhile, in the 2023-2024 school year, the independent curriculum at MTs Almaarif 01 Singosari has spread to grades VII and VIII. The basis for the implementation of the independent curriculum, especially differentiated learning here, aims to realise an autonomous and flexible learning process, and according to student needs. These needs include developing students' knowledge, learning styles, interests and understanding of diverse subjects (Sugianto, 2022). The diversity that the school is currently focusing on is one of the students' numeracy skills. Based on the results of observations, the school seeks to improve students' numeracy skills because this skill is fundamental before students learn other material more deeply. Subjects that require this numeracy skills include math and science. Teachers argue that in order to learn math and science, students must be deepened in the arithmetic part as a basis. Sari, Zainuddin and Akbar (2020) viewed that efforts to improve counting skills in children require certain methods that are fun, interesting, and in accordance with the characteristics and age stages of children. This is in line with what is done by MTs Almaarif 01 Singosari, which began to answer the gap and diversity of students' numeracy skills with differentiated learning.

In the context of diversity and differentiated learning, there has been research that thoroughly examines this aspect from concept to implementation. According to research by Pane, Limbatoruan and Simanjuntak (2022), they found that this approach has a positive impact on students' thinking skills. The research focused on the relationship between diagonal space and diagonal plane in mathematics. In addition, research by Gusteti and Neviyarni (2022) also showed that differentiated learning can be integrated with the Problem Based Learning (PBL) model. As a result,

differentiated learning has an influence on student learning achievement in mathematics. This finding is in line with research conducted by Fitra (2022), which revealed that the concept of differentiation is in accordance with the flow of progressivism promoted by John Dewey. In this context, education is directed to be in accordance with the times, and gives teachers the freedom to develop students' potential and abilities according to their needs. However, it was found that the literature review that studies the implementation of differentiated learning in science materials at the first madrasah level is still limited. Most of the studies only show students' learning outcomes without providing a deeper analysis of the implementation and impact of differentiated learning on the subject.

So far, research conducted by experts has focused on the effect of differentiated learning motives on students' thinking skills and learning achievement. There is a void that has not answered the efficiency of the teacher's strategy in improving numeracy skills in math and science lessons. To answer this void, this research will describe in detail the strategies of MTs Almaarif Singosari teachers in improving students' numeracy skills in math and science lessons.

LITERATURE REVIEW

Diversity can be interpreted as a complex phenomenon and has an influence on information processing and social categorisation (Mayo in Morin & Herman, 2022). This diversity comes from various cognitive instrinsic factors that influence thinking activities and information processing (Aggarwal et. al., 2019). The process is influenced by many factors, including cognitive and affective aspects (Morin & Herman, 2022).

In the context of cognitive aspects, teachers often face a diversity of student characteristics in the classroom. This diversity includes differences in student competency levels, which can be categorised as follows: (1) independent level competence, where students can understand the material without significant difficulty;

(2) assistance level competence, where students need help in understanding the material; and (3) frustration level ability, where students need assistance because they experience special difficulties in understanding the material (Pawestri & Zulfiati, 2020). Wulandari (2022) observed that every student has inherent diversity and uniqueness in them.

Asri Budiningsih, et al. (2021) identified the diversity of student characteristics into four categories, namely as follows:

Intelligence

Intelligence generally consists of intellectual (cognitive), emotional and spiritual intelligence. In intellectual intelligence, the main aspect involved is cognitive. Intellectual intelligence is often used as an indicator that distinguishes the quality of one person from another (Benjamin et. al., 2018). Intellectual intelligence is an individual's ability to analyse, use logic and compare information. This includes the ability to speak, understand space and time, and awareness of things that can be observed and mastered in mathematics. Intellectual intelligence is often associated with IQ, which serves to measure a person's learning speed, ability to focus on various tasks and exercises, and ability to store and recall information objectively. This intellectual intelligence is also related to a person's thought process when working with numbers, abstract, analytical thinking skills and problem-solving skills (Pasek, N.S. (2016)). There are several indicators in intellectual intelligence, namely 1) ability to capture information effectively; 2) memory ability to store information within a certain period of time; 3) verbal ability, which means the ability to express ideas and opinions; 4) numerical ability, namely the ability to operate numbers and numbers; 5) ability of abstraction and visualisation of space; and 6) analytical ability in solving problems. Each student has different abilities in implementing their intellectual abilities (Herlina & Suwatno, 2018).

Numeracy is one part of intellectual intelligence. Numeracy is the basic ability that gets the most attention from teachers in the learning process, because numeracy is always related to all human

life activities. Afriani, Fardila and Septian (2019) defined numeracy as a skill in algebraic reasoning and formulating it in mathematical problems so that it can solve arithmetic operations that can then be utilised in everyday life. Numeracy is also defined as the ability of students to process numbers such as addition, subtraction, multiplication, division and reason algebraic skills (Nataliya, 2015). Students who have high numeracy skills are students that can complete calculations with numbers, and are able to solve math, science or other subjects (Himmah, Makmur & Nuraini, 2021). Students' numeracy skills can be continuously improved by using appropriate methods, techniques and learning media (Mubarokah, 2021). This numeracy ability is also related to mathematical thinking that includes higher-order skills.

Readiness and Motivation to Learn

Learning readiness and motivation work as indicators to form effective student characteristics in the learning process. Learning readiness prepares students physically and mentally to face learning challenges, while learning motivation becomes the main trigger that encourages students to strive to achieve academic and personal goals. This learning readiness includes physical readiness, mental readiness, previous learning experiences and support from the learning environment. Meanwhile, learning motivation includes intrinsic motivation (influence from within students to follow learning) and extrinsic motivation (influence from outside students such as praise, reward or punishment). Lack of learning motivation can affect students' mathematical understanding. This is because motivation plays a big role in supporting student success, especially in improving mathematical understanding as a basic ability in education.

Students who have high motivation, especially in mathematical understanding, understand the material that they have learnt and what steps to take, and can apply mathematical concepts in any subject matter. Students who are motivated towards mathematical understanding may also have a high enthusiasm to continue learning and trying to understand every subject learnt at school. This will certainly affect the learning outcomes obtained to be even better (Hikmah & Saputra, 2023). This learning motivation

gathers a series of efforts that provide certain conditions so that students can choose whether they want to do it or eliminate it if otherwise. Readiness and motivation to learn have several indicators, namely 1) Creating competencies to solve problems involving numeracy skills and appreciating by giving gifts; 2) Explaining the importance of the learning process; 3) Making remedial exams to improve poor grades; 4) Providing results through the return of graded exam answer sheets; 5) Giving praise to students.

Social-emotional Development

This characteristic is the main factor that supports students' success in relationships. Social-emotional development means relating to social skills about a person's potential to be able to interact with other people around them. Thus, teachers have an obligation to develop social skills so that students can have the ability to communicate, adapt and interact with each other well. Social skills play an important role in improving students' thinking skills in the classroom. If students have the right social skills, they are able to be in a more positive learning environment, interact with teachers and classmates effectively, and get a deeper understanding of the subject. There are several things that show that social skills affect students' thinking skills, namely increasing participation and discussion in class, the ability to ask relevant questions, increasing cooperation in group projects, managing conflict wisely, increasing social care, increasing openness to new thinking, and reducing stress and anxiety.

By having good social skills, students can improve their ability to think, ask questions critically, be able to collaborate well, manage conflict wisely, develop empathy and be more open to new thoughts. Therefore, teachers play an important role in facilitating the improvement of students' social skills through an inclusive and differentiated approach.

Learning Styles

Each student has a diverse way of learning to understand and absorb the material and discussion provided by the teacher. In general, learning styles can be divided into three types, namely visual, auditory and kinesthetic (Salsabila, et al, 2021). When associated with mathematical ability, the visual learning style can be characterised by being neat, organised and thorough in studying mathematics, and being able to associate visuals well such as on the blackboard, in the form of graphs, tables and images. Students who have auditorial type learn by listening. Usually, students with this learning style need a quiet atmosphere so that they can repeat the material explained by the teacher verbally or through discussion. Students with a kinesthetic style prefer to learn by manipulation, practice or problem exercises (Jagom, et al, 2021).

The government has always tried to improve the quality of education through various strategies, including improving the curriculum to keep up with the times and increasing the role of teachers in learning. One of the approaches enshrined in the independent curriculum design is the concept of differentiated learning, which is expected to be part of teachers' learning practices in the classroom. Differentiated learning is actually not new in education. This concept is in line with the philosophy of Ki Hajar Dewantara, who stated that educating students means providing guidance in accordance with the nature of students. Therefore, teachers as educators play a major role in directing the development of students in accordance with their nature (Herwina in Ngaisah, et al, 2023). In its implementation, both teachers and students consciously take the initiative to diagnose learning needs, design goals, identify materials and apply appropriate learning strategies to evaluate learning (Pitaloka & Arsanti, 2022).

Differentiated learning can be definitively defined as a process in which students are given the opportunity to learn material according to their individual competencies, interests and needs. The purpose of this learning is to ensure that students do not feel frustrated, or discouraged in their learning process (Tomlinson in Khristiani, et al, 2021). Differentiated learning can also be

interpreted as a series of reasonable learning processes, designed by teachers, that focuses on student needs (Kusuma et al., 2022). Wahyuni (2022) viewed differentiated learning as a learning process that adapts to students' learning needs through the use of customised methods. In general, the purpose of differentiated learning is to provide learning that suits students' needs. The benefits of differentiated learning include facilitating the development of student activity and creativity, substantially reducing failure, encouraging adaptation based on individual expertise, and supporting student behavioural regularity (Santos et al., 2021).

Tomlinson (2022) categorised the differentiated approach in three aspects, namely:

1. Content differentiation: What material will be learnt by students. The content aspect is related to the applicable curriculum.
2. Process differentiation: Students' strategies to process ideas and information. In this aspect, students interact according to the material, which will affect the determination of learning choices. Differences in learning styles are a trigger for teachers to modify learning in such a way that different needs can be accommodated.
3. Product differentiation: Related to how students can demonstrate the discussion that has been learnt. In this case, the teacher conducts an assessment related to the discussion that has been mastered by students. As for students who have not mastered the material, the teacher can conduct a learning evaluation. Teachers can also identify students' learning styles with their learning results, which in the end can be used as material for joint evaluation.

The key principles in differentiated learning are classified into five basic principles, namely:

1. The learning environment includes the physical environment as a place for students to learn. An appropriate learning climate can help students feel comfortable so that they are better prepared to learn. Connectivity between teachers and students is also needed so that teachers can

deeply understand the profile of each student. The existence of a strong relationship between teachers and students will make students have full trust in their teachers. Trust is very much needed because it can affect students' optimism and belief.

2. A quality curriculum is the key to effective differentiated learning. Differentiated learning will be maximised if it is supported by an appropriate and quality curriculum. The curriculum should provide definite objectives, so that teachers can understand what students will achieve by the end of the lesson. In addition, it is important for teachers to understand students well. For students whose understanding is below average, teachers need to find concrete solutions to help them overcome their learning difficulties. Thus, a quality curriculum will provide a strong foundation for effective and empowering differentiated learning.
3. Continuous Assessment: Teachers need to conduct formative assessments on an ongoing basis to find out the extent of students' understanding and develop strategies to improve their teaching. This formative assessment is not only about giving numerical assessments but also examining what problems students face that make it difficult for them to understand the lesson, and conducting student diagnostic tests to find out the strengths and weaknesses of students in learning and what the teacher can do to improve student understanding. This can be started by implementing diagnostic assessments at the beginning of the lesson.
4. Responsive teaching. Through responsive teaching, teachers can find out the shortcomings of each student. The teacher can modify the lesson plan according to the conditions and situation in the field, and adjust to the final results obtained previously. Because the teaching system is said to have its own level of cruciality compared to the curriculum at school, it is important for teachers to respond to the learning results that have been done before. This response can be adjusted to the readiness, interest and

learning profile until the teacher can get the expected results.

5. Leadership and classroom activities. A professional teacher means a teacher who can manage the classroom conditions well. Teacher leadership means that the teacher can lead the class well so that students can follow the learning according to the predetermined learning contract. Things that can be done by teachers in carrying out leadership in the classroom are designing learning according to student needs, providing clear directions related to the subject matter provided, keeping classroom discussions going well and helping students if students experience difficulties.

Differentiated learning is designed as a cyclical approach where teachers can respond to their learners according to their differences. Teachers are directed to be not only teachers but also learners. The more teachers try to understand the diversity of their students, the more professional, effective and efficient learning can be realised. When teachers understand the diversity of their students, it means that teachers have built awareness of their students' strengths, weaknesses, readiness, interests and preferences.

Marlina (2019) categorised the components of differentiated learning into four parts, namely:

1. Content: This component relates to the material taught to students. Teachers often face challenges in managing specific curriculum content. Therefore, teachers are directed to organise the materials based on the learning style of each student.
2. Process: This component concerns students' ability to manage the ideas and information they acquire during learning.
3. Product: This part includes the demonstration of learning outcomes by students, i.e., how they show their understanding of the material that has been learnt. The teacher is in charge of assessing these student works.
4. Student Learning Environment: This component deals with ensuring that students feel comfortable and engaged in the

learning process. It relates to how students feel during the learning process. By recognising and understanding these four components, teachers can structure differentiated learning that is more effective and appropriate to students' needs and characteristics.

METHODOLOGY

This research applied a qualitative descriptive approach. Cresswell (2013) analogised qualitative research as a piece of woven fabric that consists of small sheets of yarn with a variety of different colours and various mixtures of materials. These threads are then woven to form an attractive fabric result. Similarly, in this study, MTs Almaarif 01 Singosari has many research indicators that require the right approach so that it can be a valid research series. This research began with observing student and teacher activities at MTs Almaarif 01 Singosari. The learning conditions in the classroom are observed, especially during math and science subjects. To understand the research topic, researchers conducted interviews with three math teachers and three science teachers. The selection of informants was done using purposive sampling technique, which is based on certain criteria. This selection was based on data on the number of teachers in the school. The interviews involved unstructured and generally open-ended questions to obtain teachers' views on differentiated learning strategies. The data analysis technique model starts from data reduction (separating data from observations, interviews and documents in detail), data presentation in the form of narrative text and ends with drawing conclusions (Idrus, 2009).

RESULT

The results showed that teachers at MTs Almaarif 01 Singosari have implemented differentiated learning. Teachers argue that it is necessary because students have diverse interests and abilities. Teachers think that the implementation of differentiated learning has several purposes, namely (1) a means of class management or

facilitating classes with diverse students; (2) this approach can better touch the needs of students to match their abilities, which is directly proportional to the multiple intelligence of students; (3) a strategy to be able to provide maximum learning according to students' abilities; and (4) this learning can be used as a mean to cover the needs of different students in receiving material so that students can easily master the material according to their learning style.

Until now, each teacher has his or her own strategy to make differentiated learning a success in the classroom. In this study, it was found that science and mathematics teachers at MTs Almaarif 01 Singosari focused on differentiated learning on students' numeracy skills. Numeracy is one of the main skills that must be improved in order to equip students' lives. Because this ability is the basis of several other sciences that will be useful for human life (Wulan, Priatna & Ismail, 2017). Likewise, in mathematics and science materials, the ability to count is a very fundamental competency to be optimised. Teachers argue that numeracy skills in science and math materials are very important for several reasons, namely (a) science subjects, especially in the physics section, discuss many formulas that require numeracy skills, (b) numeracy skills as a basic ability in science subjects, especially material that requires application, (c) the concept of measurement when processing data and experiments requires numeracy skills, (d) numeracy skills can help students train their thinking skills so that students can think logically, structurally and procedurally, and (e) every subject, especially math and science, requires numeracy skills from low levels to higher levels. Given the urgency of students' numeracy skills in math and science materials, teachers see that differentiated learning is needed to cover the gap of numeracy skills between different students.

Teachers think that differentiated learning is the answer to diverse potentials and ever-evolving science. In this case, the teacher as a facilitator must certainly be prepared to prepare the best learning material that is tailored to the potential of each student. For example, the use of media in the form of learning videos. This means that the teacher has facilitated students with

auditory and visual learning styles, so that students can easily accept the material being taught. Before going further to the learning media used, teachers need to do identification first to find out the basic potential of students before the learning takes place. This method is important because teachers can better understand the characteristics of each student, especially in the aspect of numeracy skills, by giving an initial assessment first. The following are some of the strategies used by science and mathematics teachers at MTs Almaarif 01 Singosari to identify student characteristics, especially in the aspect of numeracy skills:

1. Provide practice problems with the basic level first. Then, the teacher identifies the percentage of students who are able to solve the problems and students who are still below the learning achievement standards. Through this method, the teacher and students can determine the steps that must be taken before learning the material with higher level questions.
2. Making existing data as a reference. This data can be in the form of math report card scores in the previous school year or previous level diploma scores. This method can be used to identify the level of students' numeracy skills in science and math materials.
3. Identification efforts by analysing the results of examinations or tests in which there are concepts of calculation. For example, in science subjects, there is unit conversion material in the measurement chapter. The instrument used can be an essay question or a short form that requires solving or counting. Essay is considered a more valid instrument for identification than multiple choice questions, because usually it can tend to be less serious in doing so that the results obtained become less valid and effective.
4. If the teacher wants to get deeper data about student characteristics, the teacher can interview students regarding the obstacles they face in understanding learning materials and what materials they like. However, this method takes quite a long time. So, this method can only be done if it is possible.

5. Teachers can also reflect by asking students to fill out questionnaires related to how they felt while participating in the lesson and their impressions during the lesson.

The strategy can be used as an illustration for teachers before designing learning in the classroom. After the teacher knows the characteristics of each student, the teacher can design learning techniques according to the data that have been analysed. Students who have higher numeracy skills can be given practice problems or material with a higher level, while for students who have low numeracy skills, the teacher must certainly think of a solution so that students are not left behind. Based on the research results, for students who face obstacles in understanding the lesson or have low numeracy skills, the teacher provides several solutions such as:

1. Implementing peer tutor activities. This is done to provide enrichment to students who do not have good numeracy skills
2. Continuous teacher assistance to monitor student progress. This assistance involves efforts from homeroom teachers and parents for improvement.
3. Continue giving appreciation to students and not comparing them with their peers.
4. Making learning in groups according to the results of the score classification. This method is done to make it easier for teachers to provide learning treatment.
5. Providing personalised coaching through additional lessons outside of school hours.
6. Using discussion methods that involve students with diverse abilities so that collaboration between students occurs.
7. Students can make their own questions and answer them themselves or exchange questions with their friends who allow them to solve the problem.

Several strategies to implement differentiated learning carried out by science and mathematics teachers in understanding students' numeracy skills require full support from the school. This is because in the implementation process, many obstacles are

found and faced by teachers. These obstacles include time constraints to accommodate students who have various abilities, and require more time and energy to prepare for learning. In this regard, the support and appreciation of the school and education policymakers are needed by teachers, so that teachers can become more enthusiastic about realizing better learning.

DISCUSSION

Equalising and improving the quality of learning, as stated in the Independent Curriculum, are applied at various levels of education, including the scope of *Madrasah*. In accordance with the nature of learning, the independent curriculum offers the concept of differentiated learning as a form of learning experience in the form of basic skills, knowledge and attitude development that allows students to follow each learning process according to their needs. The presence of this concept can be a mean to develop new special talents (Semiawan in Sintana, 2022). This learning approach is also used as an alternative learning framework and a starting point to implement further learning (Sintana, 2022).

MTs Almaarif 01 Singosari as an Islamic educational institution responds to the presence of the concept of differentiated learning. In the process, the school started with implementing the independent curriculum in the 2022 to 2023 academic year. During its implementation, the school faced several obstacles before it could truly adapt to the new curriculum. The curriculum transition encourages schools to keep abreast of existing learning developments through various means such as technical guidance, creating joint learning forums, Focus Group Discussions (FGDs) to training or seminars on the independent curriculum. All of these methods are carried out so that teachers, as the main milestone in learning, can fully understand each stage and process.

Hidayati and Galih (2018) suggested that teachers' mastery of the implemented curriculum significantly affects the quality of teachers in managing learning in the classroom. Training to improve teachers' competence and professionalism is needed to

broaden their knowledge and skills to design learning methods. Apart from the school, teachers are also expected to have a high spirit of learning so that they are rich in knowledge and skills. Musfah (2011) saw that teachers who are learners will succeed in becoming educators, because educating properly can only be done by teachers who always upgrade their knowledge over time. With the improvement of teacher competence organised by school, teachers are directed to learn more and always keep abreast of developments in compiling and preparing teaching materials. Moreover, they can implement the independent curriculum well. Thus, before differentiated learning is designed by the teacher, the school should be prepared to implement the expected independent curriculum by focusing on optimising teacher competence. Furthermore, if the teacher has gained knowledge about the implemented curriculum, the teacher can continue to the next stage, namely designing differentiated learning to be implemented in the classroom.

CONCLUSION

The diversity of students' numeracy abilities is naturally unavoidable in the context of learning, especially in science and mathematics materials. Students have varying levels of understanding and learning speed. Differentiated learning can be used as an effective approach to deal with students' diversity in numeracy skills. With differentiated learning, teachers can accommodate the individual needs of each student to achieve their maximum potential. The strategies used by science and mathematics teachers at MTs Almaarif 01 Singosari are given diagnostic assessments in the form of practice questions before learning takes place, utilising previous data as a reference in identifying students' numeracy skills, understanding students' feelings in undergoing the learning process through interviews and filling out questionnaires.

Each teacher has different methods, strategies and learning materials that are appropriate in helping to improve students' understanding in counting. Peer tutor activities, additional

mentoring schedules, and involving the role of parents and homeroom teachers for remedial guidance can be used as solutions to overcome students who have low numeracy skills. Through peer tutoring activities, students who lack in terms of numeracy skills will be helped by their peers who have higher numeracy skills. Before differentiated learning is implemented by teachers in the classroom, teachers also need to continue to improve their competence so that the learning concept applied can be according to the specified objectives. Efforts can be made by teachers to improve their competence on differentiated learning by attending training programs for teachers such as training, workshops and seminars. Collaboration between teachers is also needed to provide input and ideas in implementing differentiated learning. Full support and involvement from schools, teachers and parents in implementing differentiated learning are very important to achieve optimal results. For future researchers, differentiated learning still needs deeper study, especially in other subjects. In addition, research that focuses on aspects of social intelligence is also important to do.

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