



Conceptions of Differentiated Instruction: A Case Study of Junior High School Mathematics Teachers

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Abstrak

Pembelajaran berdiferensiasi merupakan pendekatan pembelajaran yang menyesuaikan kebutuhan individu siswa, baik kesiapan siswa, minat, maupun profil belajar mereka. Meskipun konsep ini telah banyak dibahas, implementasinya dalam pembelajaran matematika masih menemui banyak kendala. Penelitian ini bertujuan untuk mendeskripsikan konsepsi guru matematika terhadap pembelajaran berdiferensiasi serta implementasinya dalam mendukung Kurikulum Merdeka. Penelitian ini merupakan penelitian kualitatif dengan menggunakan angket sebagai metode pengumpulan data. Subjek penelitian ini adalah 27 guru matematika SMP di kota Surakarta. Data dianalisis menggunakan teknik analisis kualitatif meliputi reduksi data, penyajian data, dan verifikasi/penarikan kesimpulan. Hasil penelitian menunjukkan bahwa pemahaman guru terhadap pembelajaran berdiferensiasi sudah baik, baik secara konsep teoritis maupun implementasinya. Namun, guru masih menghadapi hambatan dalam perancangan, waktu pembelajaran yang terbatas, pengelolaan kelas, dan keterbatasan pengetahuan pada beberapa aspek pembelajaran berdiferensiasi. Penelitian ini menyimpulkan bahwa meskipun guru sudah memahami konsep pembelajaran berdiferensiasi, mereka memerlukan dukungan lebih lanjut untuk mengatasi hambatan yang ada. Implikasi penelitian ini menunjukkan perlunya pelatihan dan sumber daya tambahan untuk mendukung implementasi yang lebih efektif.

Kata Kunci: Kurikulum Merdeka, Pembelajaran Berdiferensiasi, Pembelajaran Matematika

Abstract

Differentiated learning is a learning approach that adapts to the individual needs of students, both student readiness, interests, and their learning profile. Although this concept has been widely discussed, its implementation in mathematics learning still encounters many obstacles. This study aims to describe the conception of mathematics teachers towards differentiated learning and its implementation in supporting the Independent Curriculum. This research is qualitative research using questionnaires as a data collection method. The subjects of this study were 27 junior high school mathematics teachers in the city of Surakarta. Data is analyzed using qualitative analysis techniques including data reduction, data presentation, and verification/conclusions. The results showed that teachers' understanding of differentiated learning was good, both in theoretical concepts and implementation. However, teachers still face obstacles in design, limited learning time, classroom management, and limited knowledge on some aspects of differentiated learning. The study concluded that even though teachers already understand the concept of differentiated learning, they need further support to overcome existing barriers. The implications of this research point to the need for additional training and resources to support more effective implementation.

Keywords: Kurikulum Merdeka, Differentiated Instruction, Mathematics Learning

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1. INTRODUCTION

Differentiated instruction refers to a systematic approach to curriculum planning and teaching for academically diverse students (Estaiteyeh & DeCoito, 2023; Morgan, 2014). Differentiated instruction is learning to meet the needs of each student, where the learning process is tailored to the abilities and needs of each student (Birnie, 2015; Smets et al., 2022). Thus, differentiated instruction refers to how to think about a class with the aim of respecting each student's learning needs while maximizing the student's own potential. Fox stated that with these adjustments, it is expected that students do not have a sense of hopelessness and feel like a failure in learning because the learning process is based on the needs, likes, and

talents of students (Febriana et al., 2023; Gusteti & Neviyarni, 2022). In the process of differentiated instruction, a teacher must be able to understand and realize that the learning process is not carried out only with absolutely one learning method, but there are various methods that can be used in the learning process. In preparing for learning, teachers must be able to develop teaching materials, activities, tasks, and assessments that are tailored to student readiness, student interests, and the profile of the students themselves (Boelens et al., 2018; Lai et al., 2016). This is as stated by previous research who state that strategies for the differentiation process are based on student characteristics which include readiness, interest, and learning profile (Estaiteyeh & DeCoito, 2023; Morgan, 2014). In differentiated instruction, there are three aspects that teachers differentiate with the aim the students can understand the material to be taught, namely aspects of the content, aspects of the process or meaningful activities to be carried out, and aspects of the product (Morgan, 2014; Tomlinson, 2014). The content aspect relates to the material taught and studied, and can be adjusted to students' readiness and interests as well as their learning styles. Content modifications can be done by selecting learning resources, areas of interest, using learning contracts, grouping students, providing mini-lessons, and independent learning opportunities. This adaptation is important in ensuring learning is effective and appropriate to student needs. The process aspect of learning refers to student activities in class that focus on understanding the material. Learning activities are tailored to students' readiness, interests and learning styles. Teachers can implement tiered activities, learning contracts according to student needs, independent learning, and flexible grouping and peer tutoring for learning differentiation.

The product aspect of learning refers to the way students demonstrate their understanding of the material. This is the final outcome of learning that includes knowledge, skills, or understanding after completing a task or problem. These products can be individual or group, and teachers need to design them according to students' abilities. Besides differentiation in content, process, and product, other aspects of differentiated instruction are affect and learning environment (Godor, 2021; Morgan, 2014). Affect relates to the affective needs of students and it is not related to specific subjects, but rather to a general approach to learning, whereas the learning environment is concerned with how the classroom feels and functions, not limited only to the physical environment but also to the time. Previous research stated that teachers have the opportunity and ability to change the content, processes, products, and learning environment in each class according to the profile of the students (Boelens et al., 2018; Lai et al., 2016). Differentiated instruction is different from individual learning, where teachers do not face students one by one, but can be in large, small, or independent groups like classes in general. However, differentiated instruction has special characteristics as conveyed by the Association for Supervision and Curriculum Development, namely being proactive, emphasizing quality over quantity, rooted in assessment, providing a variety of abbreviations in the content, processes, and products produced as well as the learning environment, student-oriented, a mixture of individual and classical learning, and lively. Differentiated instruction planning is a very important thing to consider. In differentiated instruction planning, teachers must consider four interactive aspects, namely pedagogic, emotional, cognitive, and social (Nychkalo et al., 2020; Van Geel et al., 2019).

The implementation of differentiated instruction has differences with learning in general, namely with an emphasis on adjusting to the needs or abilities of students. Differentiated instruction is carried out through a series of cyclical activities with interrelated and continuous stages (Van Geel et al., 2019). In several public junior high schools in Surakarta city, the implementation of Kurikulum Merdeka has been running for some time, including the implementation of differentiated instruction. However, in concept and implementation, there is still some confusion about differentiated instruction so that it is felt that the learning results obtained are not optimal. On the other hand, differentiated instruction

is a learning that is considered good in improving students' mathematical abilities, because differentiated instruction provides free opportunities for students to develop their abilities. Teachers must facilitate student diversity, so that with the facilities provided in learning students can learn according to their needs. Some studies have shown a good impact on the student side, but on the other hand, research is needed to see how teachers understand differentiated instruction so that the impact of differentiated instruction can be optimized. Thus, the research has novelty in combining a variety of different mathematical learning methods to create differentiated learning tools. This novelty lies in the approach used to blend a variety of different learning approaches, with the aim of increasing the effectiveness of mathematics learning. This study aims to determine the conceptions of mathematics teachers on the implementation of differentiated instruction including how the obstacles they face. Introduction includes background, theoretical basis, problems, problem solving plans and research objectives.

2. METHODS

This research is qualitative research with a case study design. This study aims to describe the conceptions of junior high school mathematics teachers in Surakarta city regarding differentiated instruction, especially in mathematics learning. Data collection using non-test instrument through questionnaires containing closed statements and open statements related to differentiated instruction, ranging from the concept of differentiated instruction, the implementation of differentiated instruction in mathematics learning, and the evaluation of differentiated instruction carried out in mathematics learning. In addition to the closed questions related to the above aspects, the questionnaire also provided open questions related to the obstacles to the implementation of differentiated learning in mathematics learning. The instrument used has gone through the stage of construct validation by experts. Construction validation is carried out through the process of consulting with experts and asking for expert opinions so that the aspects to be measured in the questionnaire related to the concept of differentiated instruction are based on relevant theories. The following are the aspects that were asked to the research subjects through the questionnaire in [Table 1](#).

Table 1. Questionnaire Aspects related to Differentiated Instruction

Aspects	Indicator
The concept of differentiated instruction	<ol style="list-style-type: none"> 1. Definition related to differentiated instruction 2. Characteristics of differentiated instruction
Implementation of differentiated instruction in mathematics learning	<ol style="list-style-type: none"> 1. Planning and identification of needs in differentiated instruction 2. Development of teaching materials and learning activities 3. Anticipation of student difficulties in learning 4. Collaboration
Evaluation of differentiated instruction	<ol style="list-style-type: none"> 1. Definition of evaluation in differentiated learning 2. Implementation of evaluation activities in differentiated learning

The subjects in this study were 27 junior high school mathematics teachers in the city of Surakarta. The selection of research subjects was carried out by purposive technique, namely junior high school Mathematics teachers in Surakarta city who use differentiated instruction in mathematics learning at school in the Kurikulum Merdeka. Information about junior high school mathematics teachers in Surakarta city who will be the research subjects is

obtained from the MGMP of junior high school mathematics in Surakarta city. Furthermore, after determining the research subject, the questionnaire was distributed to each research subject via Google Form. The data analysis techniques used are based on qualitative data analysis techniques namely data reduction, data presentation, and verification/conclusion drawing (Creswell, 2017; Miles et al., 2014). The data reduction stage is carried out by organizing the data so that it is arranged according to the grouping of the purpose of the statement that has been determined by the researcher. Furthermore, the presentation of the reduced data that has been carried out into graphic form with the aim of obtaining information to facilitate the verification and conclusion drawing stages.

Data validation is carried out by credibility test through increased persistence, namely by making continuous and careful observations, and by conducting a discussion process with peers (Creswell, 2017; Miles et al., 2014). In addition to the credibility test, data validation is also carried out through the transferability test. The transferability test is the degree of accuracy of the application of research results to a wider scope (Creswell, 2017; Miles et al., 2014). The transferability test is carried out through writing a clear research report. The third data validation carried out is the dependability test, which is by auditing the entire research activity with other co-researchers related to data sources, data analysis, including research problems. Finally, the confirmability test, which is testing the objectivity of research associated with the research process carried out (Creswell, 2017; Miles et al., 2014). states that the confirmability test is carried out to check the certainty of conclusions based on data obtained based on accurate considerations supported by theoretical studies.

3. RESULTS AND DISCUSSION

Result

Differentiated instruction emphasizes learning that adapts to the diversity of students, both abilities and needs of students. The following presents the research data obtained through questionnaires regarding the understanding of junior high school Mathematics teachers in Surakarta city towards differentiated instruction, the implementation of differentiated instruction in mathematics learning, and its evaluation. The questionnaire was distributed online using the Google Form application to junior high school mathematics teachers in Surakarta city.

Differentiated Instruction Concept

Related to the concept of differentiated instruction, the statements in the questionnaire are related to the theoretical understanding of the definition of differentiated instruction and the characteristics of differentiated instruction. Related to the definition of differentiated instruction, the questionnaire results in Figure 1 show that 27 teachers (100%) stated that the definition of differentiated learning is an adjustment of learning to meet the individual needs of students.

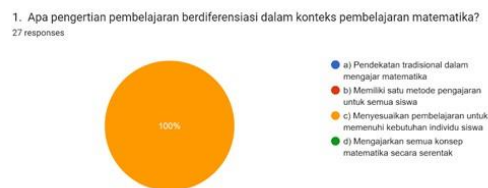


Figure 1. Definition of Differentiated Instruction

Furthermore, the learning characteristics refer to the differences with traditional learning. The questionnaire results in Figure 2 show that most teachers (96.3%) stated that the main difference between differentiated learning and traditional approaches lies in adjusting to students' individual needs, where differentiated learning emphasizes adjusting to students' individual needs.

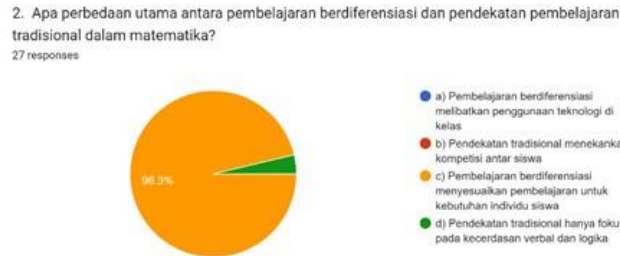


Figure 2. Differentiated Instruction Characteristics

Implementation of Differentiated Instruction

In the implementation of differentiated instruction, there are several things to focus on, including identification of individual needs and differences and strategies in implementing differentiated instruction. These two things become one of the main references and distinguish it from traditional learning. Before implementing differentiated learning, teachers are required to know the needs and individual differences of students. This aims to make some adjustments to the learning that will be carried out. In planning differentiated instruction, there are several things that must be planned.

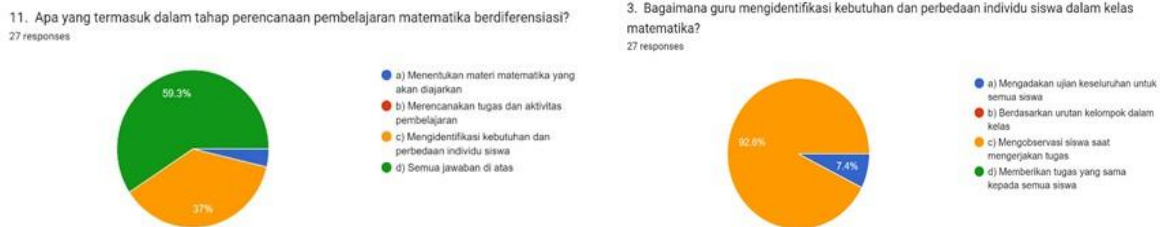


Figure 3. Needs Identification in Differentiated Instruction

The questionnaire results in Figure 3 show that 59.3% of teachers in the planning stage of differentiated instruction plan learning tasks and activities. As many as 37% of teachers in the planning stage of differentiated instruction only focus on identifying students' individual needs and differences, while the rest only focus on determining the mathematics material to be taught. Furthermore, in the process of identifying the needs and individual differences of students can be done with several activities. The activities referred to based on the questionnaire results in Figure 3 show that as many as 92.6% of teachers identify the needs and individual differences of students in the mathematics subject/class they teach by observing when students are doing assignments, while the remaining 7.4% through examinations for all students. Furthermore, Figure 4 presents the results of the questionnaire related to the urgency of identifying students' individual needs and differences.

12. Mengapa penting untuk mengidentifikasi kebutuhan dan perbedaan individu siswa dalam perencanaan pembelajaran berdiferensiasi?
27 responses

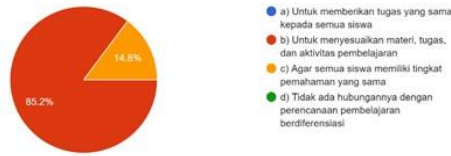


Figure 4. Purpose of Needs Identification in Differentiated Instruction

The questionnaire results in Figure 4 show that the urgency of the process of identifying individual needs and differences is to adjust learning materials, tasks and activities (85.2%) while the remaining 14.8% of teachers stated that students have the same level of understanding. With these adjustments, it is expected that the learning process can run optimally. Differentiated instruction emphasizes on the consideration of students' needs and abilities, so it must pay attention to students' readiness, students' interests, or students' learning styles. In this regard, the questionnaire results show that all respondents indicate that in the implementation of mathematics learning with a differentiated learning approach, adjustments are made to materials, tasks, or learning activities that can meet student needs. As for some of the adjustments referred to by the mathematics teachers, it can be seen in Figure 5 which includes showing that 88.9% of teachers form groups or divide students into groups based on the individual abilities of the students themselves. In addition, as many as 7.4% of teachers provide additional assignments that are only given to students with more abilities than other students. In this way, it is hoped that all students can be facilitated during the learning process. However, of the four options offered, 3.7% of teachers teach all math materials at the same level for all students.

5. Bagaimana guru menyesuaikan materi, tugas, atau aktivitas pembelajaran untuk memenuhi kebutuhan siswa dengan tingkat pemahaman yang berbeda?
27 responses



Figure 5. Adjustments in Differentiated Instruction

The process of implementing differentiated learning has different characteristics from learning in general. Some things that teachers think should be emphasized when implementing differentiated instruction are presented in the following figure.

13. Apa yang dilakukan guru dalam tahap pelaksanaan pembelajaran berdiferensiasi?
27 responses

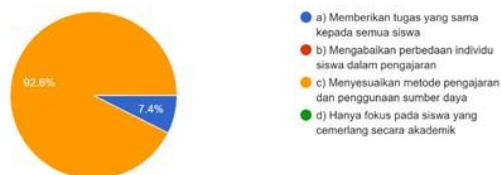


Figure 6. The Emphasis on Differentiated Instruction

The questionnaire results in Figure 6 show that 92.6% of teachers adjust teaching methods and the use of resources according to the individual needs and abilities of each student. In addition, 7.4% of teachers give the same tasks to all students. This is in line with the characteristics of differentiated instruction which shows attention to student diversity. In addition, at the implementation stage of differentiated instruction, teachers must also ensure that all students are involved in learning, including getting challenges that match the abilities of each student. Teachers provide assignments that challenge students, but according to the individual abilities of the students themselves. This shows that teachers provide diverse tasks that are challenging according to the individual abilities of each student. As with learning in general, students on several occasions experience difficulties in learning. The role of the teacher becomes very important in order to overcome the difficulties faced by students. In line with that, the questionnaire results in Figure 7 show that all teachers will help students to overcome the difficulties faced, of course, the assistance or attention provided is in accordance with the needs of each individual. This is because the difficulties faced will certainly vary between individual students.

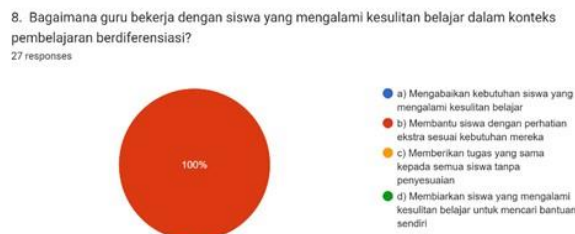


Figure 7. Anticipating Student Difficulties on Differentiated Instruction

It should also be realized that the successful implementation of differentiated instruction cannot be separated from the cooperation and collaboration between various parties, including teachers, students, and schools. In particular, the questionnaire results in Figure 8 show that 88.9% of teachers collaborate with colleagues, especially in planning and evaluating learning to support the success of mathematics learning in mathematics subjects. However, the questionnaire results show that there are other results where teachers do not collaborate with peers or other staff (3.7%) and rely entirely on individual teaching resources.



Figure 8. Collaboration in Implementing Differentiated Instruction

Evaluation in Differentiated Instruction

Evaluation in the learning process emphasizes summative evaluation with the aim of seeing the success and objectives of the learning program that has been implemented. In this study, it is seen how Mathematics teachers understand the concept of evaluation in differentiated instruction and how teachers measure the success and shortcomings of

differentiated instruction carried out. The following presents teachers' understanding of evaluation in differentiated instruction.

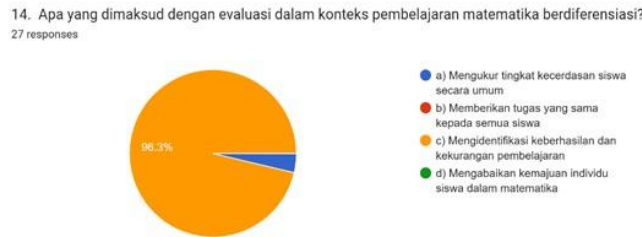


Figure 9. Definition of Evaluation in differentiated instruction

Based on Figure 9, it is found that most teachers (96.3%) stated that evaluation in the context of differentiated instruction is closely related to the activity of identifying the success and shortcomings of learning, while the rest (3.7%) teachers understand evaluation in differentiated instruction as an activity of measuring the level of intelligence of students in general. Figure 10 shows teachers' understanding of how they measure successes and shortcomings in differentiated instruction, including in mathematics learning in particular. The questionnaire results show that 96.3% of teachers measure the success of differentiated instruction implementation by evaluating individual progress regularly. However, it should be noted for improvement that there are still teachers who do not evaluate differentiated instruction (3.7%). Specifically, in mathematics learning, teachers measure the success of differentiated instruction implementation through monitoring students' individual progress regularly.

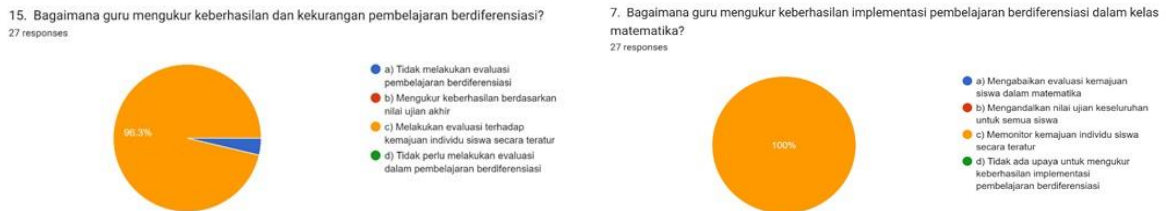


Figure 10. Implementation of Differentiated Instruction Evaluation

The implementation of differentiated instruction has not been fully implemented. In some schools, differentiated instruction, including in mathematics subjects, is still found to have difficulties or obstacles in its implementation, both related to the ability of the teachers themselves and other technical difficulties or obstacles that arise during the differentiated instruction process. Based on the results of the questionnaire distributed to respondents through open-ended questions regarding the difficulties or obstacles that occur in implementing differentiated instruction in mathematics subjects, the following difficulties or obstacles were found. Difficulties in planning differentiated instruction such as preparing teaching materials and worksheets for each student's learn profile and readiness, determining learning models that can facilitate student diversity, and determining and preparing assessments that are in accordance with the learning profile, readiness, or interest. Besides that determining the allocation of learning time for the learning process as well as student diagnostics (student characterization) and time management (time allocation) during the implementation of learning. In addition to the pre-assessment aspect, teachers experience limitations in their knowledge of the concept of differentiated instruction, classroom

management according to individual diversity (learning profile, interest, or readiness), and the amount of student dependence on the teacher.

Discussions

Learning mathematics with a differentiated instruction approach is different from other learning approaches. Mathematics teachers need to know deeply about the concept of differentiated instruction. Teachers' understanding of differentiated instruction is in accordance with the theoretical understanding of differentiated instruction, where differentiated instruction is learning to meet the needs of each student, where the learning process is carried out according to the abilities and needs of each student (Birnie, 2015; Herwina, 2021; Smets et al., 2022; Wahyuningsari et al., 2022). Thus, theoretically, teachers already know the definition of differentiated instruction correctly. Furthermore, the difference between differentiated instruction and traditional learning shows a good understanding. The questionnaire results show that teachers already have the conceptions that differentiated instruction emphasizes on adjusting to the individual needs of students. This is in line with previous research which stated that differentiated instruction emphasizes adjustments to students' individual needs or abilities (Dixon et al., 2014; Rachmawati et al., 2016). Differentiated instruction will emphasize learning that is responsive to students' individual deficiencies or weaknesses (Dixon et al., 2014; Tomlinson & Imbeau, 2023). Referring to this, mathematics teachers' understanding of differentiated instruction is quite good, it is just that in some detailed matters there is still a lack of understanding of differentiated instruction.

The implementation of mathematics learning with a differentiated instruction approach provides differences compared to mathematics learning with other learning approaches. As stated by similar research which stated that differentiated instruction begins with an initial assessment of students to determine students' abilities or prior knowledge, students' learning interests, or students' learning styles (Nychkalo et al., 2020; Van Geel et al., 2019). Figures 6 and Figure 7 show how teachers perceive the implementation of differentiated instruction, where teachers begin learning by conducting student identification activities, including how Mathematics teachers conduct student identification activities. Mathematics subjects with negative conceptions from students may have other needs or difficulties. Mathematics has unique characteristics, where there are interrelationships between materials, so mastery of abilities or prior knowledge is very important (Jalaludin et al., 2018; Novitasari, 2016). Thus, the process of identifying prior knowledge is very important. Identifying students' individual needs and differences is an important part of differentiated instruction. The questionnaire results show that in learning, the process of identifying students' abilities or needs is something that must be done. Differentiated instruction is responsive in seeking learning by aligning individual needs or abilities through the selection of learning models or tasks given based on the findings of previous evaluations (Dixon et al., 2014; Rachmawati et al., 2016).

In addition, the principle of differentiated instruction is continuous assessment where the evaluation process is not only done at the end of learning to measure learning achievement, but also at the beginning as the first step of learning to measure student readiness or needs, including student abilities (Dixon et al., 2014; Rachmawati et al., 2016). With proper identification of students' needs or abilities, learning carried out with a differentiated approach is expected to facilitate all students' abilities so as to maximize student learning (Wahyuni, 2022; Wulandari, 2022). Planning the tasks and learning activities to be carried out is very important because it must be tailored to the abilities or needs of individual students. The mathematics learning situations presented must be suitable for students, so that it is possible for a mathematical concept to be arranged several different

learning activities. Thus, content or process differentiation in mathematics learning can be carried out optimally. When the Mathematics teacher already knows the results of student identification, the teacher can plan the learning activities carried out. Learning strategies are carried out by grouping students according to the results of initial identification, so that the material or tasks carried out by students become more effective and efficient. In addition, it should be noted that with the diversity of students, learning strategies that can be used are not only fixated on one learning strategy, but can use a variety of strategies. Thus, one learning strategy that is carried out cannot be used with certainty for all students with their diversity (Bondie et al., 2019; Magableh & Abdullah, 2020; Tanjung & Ashadi, 2019). In addition, at the implementation stage of differentiated instruction, teachers must also ensure that all students are involved in learning, including getting challenges that match the abilities of each student.

Mathematics teachers provide assignments that challenge students, but according to the individual abilities of the students themselves. This shows that teachers provide a variety of challenging assignments according to the individual abilities of each student. The existence of challenges or difficulties experienced by students in learning needs to be addressed wisely. The difficulties or challenges experienced by students will vary, teachers must be careful in providing assistance to students, where teachers must have consideration of which students should be assisted and do not need assistance. This indicates that the role of the teacher in this case is very important (Morgan, 2014; Puzio et al., 2020).

In every learning process, learning evaluation must be carried out by every teacher to determine the achievement of learning objectives and shortcomings or obstacles that occur during the learning process, including in differentiated instruction. Evaluation in differentiated instruction refers to similar research as a summative assessment, where the results are used to obtain information about the achievement and development of students (Nychkalo et al., 2020; Van Geel et al., 2019). The questionnaire results show that the conceptions of Mathematics teachers towards evaluation in differentiated instruction is good. This can be seen from the understanding of Mathematics teachers who stated that evaluation in differentiated learning refers to the process of identifying the success and shortcomings of learning. Successful implementation refers to the achievement of learning objectives achieved by each student on a regular basis. Learning deficiencies that are carried out become a means of improvement to carry out further differentiated instruction. This is in line with the opinion of similar research which states that evaluation in differentiated instruction is a growing series, namely to determine the beginning of the next differentiated instruction cycle (Boelens et al., 2018; Lai et al., 2016). The implementation of mathematics learning with a differentiated approach carried out by junior high school mathematics teachers in Surakarta city still encounters several obstacles in preparing materials, tasks, and activities that can meet students' needs or readiness. The results show that there are several difficulties or obstacles experienced by teachers, one of which is related to the limited knowledge of teachers about differentiated instruction. Previous research stated that extensive teacher experience or knowledge is needed to support differentiated instruction (Hackenberg et al., 2021; Marks et al., 2021). This certainly requires a process that can take place longitudinally so that teachers can develop different learning materials, tasks, and activities according to students' needs or readiness (Novianti & Garzia, 2020; Van den Kieboom & Groleau, 2022).

In addition, the questionnaire results show other difficulties faced by teachers technically, namely related to managing learning time, utilizing learning resources, including other technical matters related to the implementation of differentiated instruction. Some of the difficulties or challenges faced by mathematics teachers in differentiated instruction are in line with the results of similar research which states that the challenges faced when implementing differentiated instruction based on the order include time, learning resources,

knowledge, class size, supporting aspects, and student worksheets (Dixon et al., 2014; Rachmawati et al., 2016). It is further explained that the time factor is the biggest factor that becomes a challenge as well as difficulty in implementing differentiated mathematics learning (Dixon et al., 2014; Tomlinson & Imbeau, 2023). Differentiated instruction emphasizes the importance of learning that can facilitate students' needs. Through the results obtained, a description of how mathematics learning with differentiated instruction is carried out in Surakarta city so that it can be used as a reference in differentiated instruction. In addition, with good perceptions owned by teachers based on the results of the study, it is expected that it will have a good impact on students' mathematical abilities. However, this research is only limited to the implementation of mathematics learning in several junior high schools in Surakarta city so that the description of teacher perceptions is still limited, so it is hoped that in the next study it can be seen more broadly the perception of differentiated instruction by involving high school education levels with more respondents.

4. CONCLUSION

Differentiated instruction is a new learning approach in Indonesia, particularly under the Kurikulum Merdeka. It focuses on students' diverse needs and abilities, covering content, process, and product. Junior high math teachers in Surakarta show good understanding in implementing and evaluating differentiated instruction. They grasp the concept and adapt teaching to students' abilities. However, challenges like designing instruction, limited time, and classroom management exist. Teachers aim to improve by learning from successful practices. Overall, effective implementation is expected to enhance students' math skills, addressing potential obstacles.

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