



## Summative assessment planning in the Kurikulum Merdeka on two-dimensional figure materials

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### ABSTRACT

Summative assessment is part of Kurikulum Merdeka which is expected not to be put aside because it has an important influence in determining students' final grades or grade promotion. This research aims to analyze summative assessment planning in Kurikulum Merdeka on plane material. The research method used is qualitative. There are three subjects: the school principal, mathematics teacher, and homeroom teacher. Research data collection techniques are interviews and documentation. The data that has been collected is analyzed, starting with data reduction, data presentation, and conclusions. The results of the research analyzed the planning of summative assessment of scope material, namely the teacher gave questions about the area perimeter of triangles and parallelograms, the area of rectangles, trapezoids, and kites, while the assessment technique used essays. In the mid-semester summative assessment, the teacher gives questions about the area perimeter of a triangle, the area parallelogram, the area square, and the perimeter of a rectangle. In the end-of-semester summative assessment, the teacher gave questions about the area of the perimeter of a square and rectangle, the area of a trapezoid, the area of a triangle, and the perimeter of a parallelogram. The assessment techniques used are multiple-choice, essay, and essay questions.

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### ABSTRAK

Asesmen sumatif menjadi bagian dari kurikulum merdeka yang diharapkan untuk tidak dikesampingkan dikarenakan Asesmen Sumatif memiliki pengaruh penting dalam menentukan nilai akhir atau kenaikan kelas peserta didik. Penelitian ini bertujuan untuk menganalisis tentang perencanaan asesmen sumatif dalam kurikulum merdeka pada materi bangun datar. Metode penelitian yang digunakan kualitatif. Subyek penelitian ini ada tiga yaitu kepala sekolah, guru matematika dan wali kelas. Teknik pengumpulan data penelitian ialah wawancara dan dokumentasi. Data yang telah dikumpulkan dilakukan analisis data mulai dari reduksi data, penyajian data, dan kesimpulan. Hasil penelitian menganalisis tentang perencanaan Asesmen sumatif lingkup materi yaitu guru memberi soal tentang luas keliling segitiga dan jajargenjang, luas persegi panjang, trapesium dan layang-layang sedangkan teknik penilaian menggunakan essay. Asesmen sumatif tengah semester, guru memberikan soal tentang luas keliling segitiga, luas jajargenjang, luas persegi dan keliling persegi panjang. Asesmen sumatif akhir semester, guru memberi soal tentang luas keliling persegi dan persegi panjang, luas trapesium, luas segitiga, dan keliling jajargenjang. Teknik penilaian yang digunakan yaitu pilihan ganda, essay dan soal uraian.

**Kata Kunci:** Asesmen sumatif; bangun datar; Kurikulum Merdeka; rencana asesmen

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## INTRODUCTION

Government policies in the field of education are very diverse, one of which is the curriculum. The curriculum is developed to improve the quality of education in Indonesia, as it is considered the heart of education (Malikah et al., 2022). In Indonesia, curriculum development continues to strive for innovation. The education system in Indonesia requires a curriculum because it plays a significant role in the success of the educational process (Fifani et al., 2023). In today's academic landscape, the topic of discussion is the "Kurikulum Merdeka Belajar" (Independent Learning Curriculum). This curriculum represents an innovation introduced by Nadiem Makarim, Indonesia's Minister of Education and Culture. One of the factors driving this change is the need to keep pace with the times to meet the needs of the Indonesian nation. Preparations are made as early as possible, so students are expected to possess potential abilities and skills. According to Suhandi and Robi'ah (2022), the curriculum requires reflection to address educational challenges in line with the times' developments.

The Kurikulum Merdeka is the result of an evaluation of the Kurikulum 2013. Various curriculum changes require adjustments from the elements of the education system in Indonesia. Effective curriculum management is essential to achieve the shared goal of quality learning and education. The concept of Merdeka Learning aims to guide teachers so that they are not overwhelmed and burdened by administrative tasks, allowing them to focus on the learning process. The Kurikulum Merdeka implements a more comfortable learning system, allowing students and teachers to exchange ideas, engage in outdoor classes, and avoid boredom. Additionally, teachers can instill values of politeness, bravery, cleverness, and competence, rather than focusing solely on ranking systems (Yamin & Syahrir, 2020).

The Kurikulum Merdeka includes an evaluation used in the learning process: assessment. Through assessment, teachers can understand how far the learning has progressed and whether it needs to be revised or improved. Similarly, for students, it assesses whether teachers can create a conducive, calm, and enjoyable learning environment during the learning process. Assessment is a structured and prolonged activity that enables students to gather information regarding the outcomes and processes of their learning, with policy decisions made by regulations and considering established criteria. Assessment is not merely viewed as a step for creating reports and evaluating students' skills; in the present day, assessment is conducted to collect and process information regarding what is needed in learning. Thus, assessment aims for monitoring and feedback in the learning process (Anggraini, 2022).

In the Kurikulum Merdeka policy regarding assessment, the government has established that the School Examination and the National Examination have been abolished and replaced by a final summative assessment. This is based on Regulation Kemendikbud No. 21 of 2022, concerning the Standard Nasional Pendidikan Anak Usia Dini, Pendidikan Dasar, and Pendidikan Menengah. Based on surveys and discussions with various stakeholders in the field of education, including teachers, students, and parents, there has been a shift in the policy of implementing national examinations as an assessment. Students have focused on the national examination, which emphasizes memorizing dense material rather than learning competencies. As a result, students, teachers, and parents experience stress because the national examination serves as the primary indicator of individual student learning success. Therefore, the standards for students to graduate are determined by each educational unit, whereby students must complete the exam questions set by the school. One of the common problems faced by students in solving exam questions is in the subject of mathematics, where students often perceive mathematics as a complex subject to learn, leading them to give up, which in turn affects the implementation of assessments (Jamilah et al., 2023).

Human problems are often related to applying mathematics to individuals, society, work, and science. In response to this condition, education is oriented towards mathematics. To help students solve problems, a good mastery of mathematics is necessary. At present, many people use mathematics as a benchmark

to measure students' intelligence, often making the subject appear complex and intimidating (Auliya, 2019). Therefore, teachers play a crucial role in innovating to enhance students' understanding of mathematical concepts, so that students become more interested, confident, enthusiastic, and comfortable with learning. This is expected to align with the Kurikulum Merdeka. The efforts of teachers to facilitate creative learning are crucial in motivating students to learn (Anggraini & Wiryanto, 2022).

In everyday life, we encounter various problems related to two-dimensional figures. Learning about two-dimensional figures becomes a Mathematics topic related to the knowledge and application of fundamental concepts for recognizing two-dimensional geometric objects. A proper understanding of geometric concepts encourages students to depict their surroundings in an organized manner. The science of geometry is closely connected to daily life and is relevant to students (Andriliani et al., 2022). The material on two-dimensional figures aims to enhance students' skills in understanding, depicting, measuring, and solving problems related to triangles, squares, rectangles, circles, and other geometric shapes.

Several researchers have investigated the implementation of assessments in Mathematics subjects. According to Unaenah et al. (2023), some students face challenges in identifying, drawing, and calculating the area and perimeter of a two-dimensional figure. As a result, this impacts their understanding of two-dimensional figures and their overall mathematical abilities. According to Sari et al. (2021), by implementing AKM numeracy, students' abilities are still classified as low in solving geometry problems. The reasons include students having difficulty answering open-ended questions and encountering misconceptions due to a lack of understanding of the content, as well as questions that have not been taught in school. Another factor contributing to students' struggles with geometry problem-solving is the teachers' ability to coordinate the class.

Furthermore, due to the teachers' limited understanding of the policies within the Kurikulum Merdeka, Jamilah et al. (2023) explain that implementing the new curriculum indicates that teachers can be considered ready to face curriculum policies based on psychological readiness aspects. However, some teachers are already older and senior, and they feel fatigued when adapting to or adjusting to the new policies. The application of assessments in the field of mathematics, according to Ayuwara et al. (2022), reveals that through the mathematics learning in the fifth grade at SD Negeri 1 Kalangsari, students are not yet accustomed to dealing with issues related to AKM mathematical literacy questions. Even with materials such as flat quadrilaterals, the facts show that only a few students can resolve AKM-based questions in Mathematics literacy.

The teacher faces challenges in organizing classroom conditions, with the underlying factor being that the initial diagnostic assessment has not been implemented optimally. Although the teacher has conducted this assessment, the forms of evaluation and their execution remain unclear, impacting the implementation process. Meanwhile, research on formative assessment conducted by Magdalena et al. (2021) indicates that through the learning process, the application of formative evaluation yields better learning outcomes for students who receive formative assessment compared to those who do not. The purpose of conducting a formative evaluation is to assess the results of the students' learning process in order to determine their individual and collective absorption level in SDI Alexandria, grade 1. Additionally, it helps train students to become accustomed to solving Mathematical problems, encouraging them to deepen their understanding of the learning process more effectively and complete formative tests more easily.

Based on these studies, the urgency of this research lies in the fact that many parties have not yet investigated summative assessment at the elementary school level. Summative assessment becomes an important aspect of the Kurikulum Merdeka. It is expected not to be overlooked, as it significantly impacts the determination of students' final grades or promotion to the next grade. Therefore, implementing this assessment needs to be highlighted and made the subject of research. In light of this,

this study aims to analyze the planning of summative assessment in the Kurikulum Merdeka regarding two-dimensional figures, so that educators and the community can effectively utilize the research results. This research is expected to provide information and knowledge about planning summative assessments on two-dimensional figures.

## **LITERATURE REVIEW**

### **Kurikulum Merdeka (Merdeka Curriculum)**

The curriculum in Indonesia has undergone improvements over time. In 2004, a competency-based curriculum was implemented, which was replaced in 2006 by the Kurikulum Tingkat Satuan Pendidikan (KTSP). As time progressed, this curriculum evolved into the Kurikulum 2013, which remained in effect until 2018. This curriculum serves as the national curriculum. The Kurikulum Merdeka was introduced in 2019 as a form of change and enhancement of the previous curriculum. One factor contributing to the continuous changes and improvements in Indonesia's curriculum is the shifting government policies each period (Muzakki et al., 2023). The Kurikulum Merdeka prioritizes relaxed and enjoyable learning, creating a happy and comfortable atmosphere that fosters a sense of freedom without pressure, allowing students to express themselves and their talents freely. Additionally, Merdeka Belajar focuses on the content and development of students' competencies to create meaningful and enjoyable learning activities (Karomah et al., 2022).

Merdeka Belajar is a curriculum concept that empowers teachers and students to be independent, innovative, and creative in their learning activities, enabling them to acquire knowledge. The Kurikulum Merdeka offers a more optimal learning experience with diverse content, allowing students to delve into and strengthen concepts with sufficient time. Thus, the Kurikulum Merdeka is a flexible and autonomous system designed to foster a learning culture that is neither receptive nor restrictive, encouraging innovation and adapting to students' needs (Nofiyanti & Hidayati, 2024).

### **Asesmen Sumatif (Summative Assessment)**

The Kurikulum Merdeka has important assessments that need to be conducted, as these enable teachers to observe the results of the learning processes that have taken place. According to Antika et al. (2023), measuring students' creativity during the learning process can be done through assessment results in terms of achieving learning objectives, which are divided into three areas: assessment as learning, assessment for learning, and assessment of learning. These assessments are interconnected as follows:

1. Assessment as learning (in learning "as" a process) serves as reflection and formative assessment. Examples of formative assessment include self-assessment and peer assessment.
2. Assessment for learning (assessment "for" the learning process) improves learning and formative assessment. The formative assessment results contain information on steps to enhance the following learning activities with the best, supportive, and meaningful design.
3. Assessment of learning, also known as a final assessment, evaluates learning, typically conducted at the end of a lesson or the end of the semester.

Summative assessment is a stage of evaluation to ensure the overall learning objectives are achieved. Therefore, summative assessment in the learning process is conducted at the end of the academic year or the end of an educational level (Mujiburrahman et al., 2023). The principles that must be considered in the implementation of formative and summative assessments in the Kurikulum Merdeka through

guidelines for learning and assessment in early childhood education, primary education, and secondary education are:

1. Assessment serves as feedback for teachers, students, and guardians, providing comprehensive information.
2. The planning and implementation of assessments in achieving learning objectives are adjusted according to function, technique, and timing.
3. Assessment planning should be based on the specific conditions and facts, and should be valid, accountable, and equitable.
4. Directly inform students about their learning progress and achievements, including their accomplishments and follow-up actions.
5. Teachers, students, and guardians use assessment results as a bridge for reflection in improving quality.

Summative assessment is an activity to evaluate students' overall achievement of learning objectives. The summative assessment is implemented at the end of a learning activity scope, the end of the academic year, or at the end of an educational level. Summative assessment is used for decision-making regarding student performance, based on their completion of all subjects. According to Permendikbud No. 21 of 2022, summative assessment is carried out to assess the achievement of student learning outcomes, which serves as a basis for determining promotion to the next grade or graduation from an educational level (Budiono & Hatip, 2023).

### **Bangun Datar (two-dimensional figure)**

Learning mathematics involves students being presented with specific problems based on the knowledge they have acquired during the learning process, and then attempting to solve them. Students can become sensitive to mathematics if they accurately understand mathematical concepts from their perceptions. Mathematics has various concepts that are interconnected with one another. Students experience difficulties solving mathematical problems when their basic understanding skills are still lacking, making it hard to achieve the learning objectives. Through conceptual understanding, students have a greater opportunity to solve problems with the basic skills they already possess (Fajari, 2020).

One area of Mathematics that often encounters conceptual misunderstandings among elementary school children is geometry. Geometry studies two-dimensional and three-dimensional objects to provide knowledge related to the visual capabilities of objects. The field of geometry requires a high level of understanding and appropriate teaching strategies. Geometry becomes difficult to grasp because it demands imagination and analytical skills to comprehend abstract objects, thus necessitating the presence of concrete objects to support students' understanding. Students often view mathematics as merely a collection of symbols, numbers, and figures. This factor contributes to the possibility of conceptual misunderstandings in geometry among elementary school students (Fauzi, 2020).

## **METHODS**

This research approach is qualitative. The qualitative approach focuses on phenomena or events that directly involve the research subjects, which are then described through a narrative based on direct

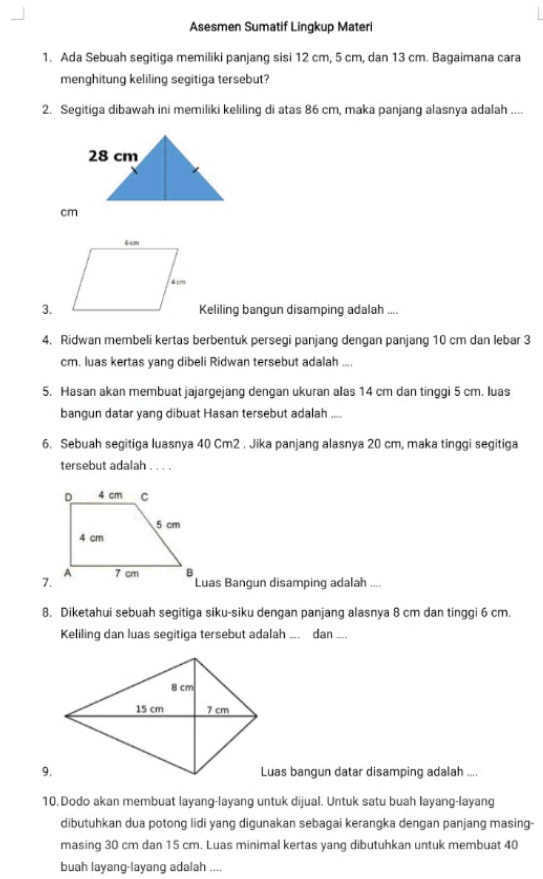


observations during the learning process conducted by the teacher (Dewi et al., 2023). This study was conducted at SD Muhammadiyah Plus Malangjiwan, Colomadu. The research informants comprised three individuals: the principal, the mathematics subject teacher, and the fifth-grade homeroom teacher. Data collection techniques in this study were conducted through interviews and documentation. Structured interviews were conducted with the informants to gather in-depth information about planning summative assessments for two-dimensional figures. At the same time, documentation was used to collect secondary data, including documents related to summative assessment questions, mid-semester assessments, and end-of-semester assessments for the two-dimensional figure materials in the fifth grade.

This research obtained data in the form of sentences from interview responses, supported by documentation of the research activities. Once the necessary data has been collected, data analysis will be conducted through data reduction (gathering important data from both interviews and documentation), data presentation (presenting data clearly and systematically by creating descriptions based on field facts), and verification (drawing conclusions and processing the obtained data according to the evidence). The validity of the data in this study is supported by source and technique triangulation. Triangulation is employed to collect data from different sources to obtain information from the same source. Source triangulation can be conducted to enhance confidence in the data when verifying information obtained through multiple informant sources (Alfansyur & Mariyani, 2020). In this study, the researcher uses the triangulation technique to compare documentation data and interview data. Meanwhile, the author performs source triangulation to determine valid data through comparisons of the obtained sources.

## **RESULTS AND DISCUSSION**

The fifth-grade Mathematics subject teacher at SD Muh Plus Malangjiwan prepares a plan for summative assessments covering the material, mid-semester summative assessment, and end-of-semester summative assessment. This can be seen from the following documentation and interviews.



**Figure 1.** Summative Assessment Scope of Material  
*Source: Author's Documentation 2023*

Based on **Figure 1**, the teacher presents questions on the area and perimeter of triangles, area and perimeter of parallelograms, area of rectangles, area of trapezoids, and area of kites. The summative assessment for these topics is similar to the daily quizzes conducted on one material chapter, where students are provided with a summative assessment question sheet. The teacher uses the summative assessment results to compile the semester's summative assessment grades. The assessment technique used during the summative assessment of two-dimensional figures for the fifth-grade at SD Muhammadiyah Plus Malangjiwan is written, utilizing essay questions with a total of 10 questions. This was conveyed by the principal, the mathematics teacher, and the homeroom teacher in the following interview.

**Question:** What is the format of questions in the scope of material for summative assessment?

**KS:** *We leave the form of questions for summative assessment of the material's scope to the teacher concerned, but when implementing this material scope assessment, it is usually in the form of a yes/no or descriptive questions.*

**GM:** *During the summative assessment of the material scope, I chose to use essay questions entirely because they are more effective and allow me to understand the extent of the students' cognitive development regarding the material. From the essay questions, I presented various questions accompanied by images of two-dimensional figures.*

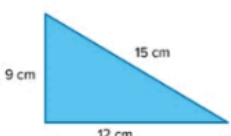
**WK:** *For the material scope assessment, I use essays/descriptions. For the mid- and end-of-semester assessments, I use multiple-choice, essay, and descriptive questions.*

Based on the research, teachers choose the essay question form because it is more effective for assessing students' cognitive abilities. The fifth grade has just implemented the Kurikulum Merdeka in the current academic year, 2023/2024, so it is necessary to plan the summative assessment optimally.

The planning of summative assessment questions on the scope of material prepared by fifth-grade Mathematics teachers is not much different from the types of questions from last year. This is adjusted to the state of development and abilities of students this year. Suppose students' developmental conditions and abilities are likely to be similar. In that case, the fifth-grade mathematics teacher only changes a few summative assessment questions based on the scope of the material that has been prepared. In planning summative assessment questions, the principal is not involved in monitoring or preparing questions, but teachers are free to organize and make summative assessment questions.

Penilaian Tengah semester

Pilihan Ganda

1. Persegi panjang tersebut mempunyai panjang 28 cm dan lebar 17 cm. keliling persegi panjang tersebut adalah ...  
a. 45 cm      c. 467 cm  
b. 90 cm      d. 476 cm
2. Perhatikan gambar berikut!  
  
Luas bangun data disamping adalah ...  
a. 36 cm      c. 72  
b. 54 cm      d. 108  
cm
3. Sebuah kertas berbentuk jajargenjang dengan ukuran alas 8 cm, sisi miring jajargenjang 6 cm, dan tinggi jajargenjang 5 cm. Luas kertas tersebut adalah ...  
a. 40 cm<sup>2</sup>      c. 80 cm<sup>2</sup>  
b. 48 cm<sup>2</sup>      d. 96 cm<sup>2</sup>

Esai

1. Ayah ingin membuat penutup bak berbentuk persegi dari triplek, jika panjang sisi bak adalah 95 cm. Maka luas triplek yang harus di beli ayah adalah ...
2. Hendra mempunyai kawat sepanjang 36 cm. Kawat tersebut akan dibuat menjadi kerangka segitiga sama sisi. panjang sisi kerangka segitiga tersebut adalah ...

Uraian

1. Sebuah taman berbentuk persegi panjang berukuran panjang 30 m dan lebar 25 m. Di Sekeliling taman akan dipasang lampu dengan jarak antar lampu 5 m. Berapakah jumlah lampu yang diperlukan?

**Figure 2.** Mid-semester Summative Assessment  
*Source: Author's Documentation 2023*

Based on **Figure 2**, the assessment technique used during the mid-semester summative assessment of two-dimensional figure material in fifth grade at SD Muhammadiyah Plus Malangjiwan Colomadu consists of three-part multiple-choice tests, two essay questions, and one descriptive question. In the mid-semester summative assessment, the teacher presents questions on the area and perimeter of a triangle, the area of a parallelogram, the area of a square, and the perimeter of a rectangle. The fifth-grade Mathematics teacher at SD Muhammadiyah Plus Malangjiwan prepared the mid-semester summative assessment questions. While planning the mid-semester summative assessment, the principal was involved in monitoring the planning and preparation of the summative assessment. The principal must control or supervise at a particular time, once a semester or yearly.

The system for determining the questions for the mid-semester summative assessments, which are tailored to students' needs, requires review and revision stages, which the school editor carries out. This editor becomes the responsibility of the second-grade homeroom teacher at SD Muhammadiyah Plus Malangjiwan. The editor has the task of accommodating and selecting the feasibility of questions and the format of the assessment sheet given to students. When planning to create semester and



end-of-semester summative assessment questions on two-dimensional figure material, teachers need a laptop, references to last year's questions, students' textbooks, and internet access.

Teachers need references when preparing mid-semester summative assessment and end-of-semester summative assessment questions. The mathematics textbook reference used by fifth-grade students in 2022 is Tiga Serangkai, while in 2023 it is the Kurikulum Merdeka book published by Erlangga with the author Wono Setya Budhi. Teachers only modify the numbers when referring to questions in the textbook. When applying these questions, students are accustomed to facing similar problems during class. The purpose of doing this is to enable students to solve problems during assessments. In addition, another facility at SD Muh Plus Malangjawan is a printing machine. As stated during the following interview,

**Question:** What are the school's supporting facilities for implementing summative assessment?

**KS:** *In the administration room, there is a printer that can be used for printing purposes, both for learning and school administration.*

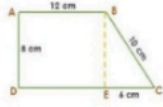
**GM:** *There is one printer in the administration room that we can use to print mid- and end-of-semester summative assessment questions for students. However, we must take turns with other teachers if they need it.*

**WK:** *The facility I need is a printer for the summative assessment sheet. So it will be in the form of paper. The print is in the administration room.*

In planning summative assessments, teachers prepare as many sheets of assessment questions on two-dimensional figure material as there are students. The school provides a printer as a supporting tool for printing summative assessment sheets. Given the limited number of printers, teachers are expected to utilize the facilities effectively.

Asesmen Akhir semester

Pilihan Ganda

- Sebuah jajar genjang yang memiliki panjang sisi alas 7 cm dan keliling bangun tersebut adalah 20 cm. Panjang sisi miring jajargenjang tersebut adalah...  
a. 27 cm    c. 10 cm  
b. 13 cm    d. 3 cm
- Suatu hari, Yoga pergi ke lapangan futsal untuk bermain. Lapangan futsal itu berbentuk persegi panjang. Lapangan futsal memiliki panjang dan lebar, yaitu 25 m dan 15 m. Luas Lapangan futsal tersebut adalah ...  
a.  $10 \text{ cm}^2$     c.  $80 \text{ cm}^2$   
b.  $40 \text{ cm}^2$     d.  $375 \text{ cm}^2$
- Luas bangun datar di bawah ini adalah ...  
  
a.  $36 \text{ cm}^2$   
b.  $72 \text{ cm}^2$   
c.  $120 \text{ cm}^2$   
d.  $240 \text{ cm}^2$

Esai

- Budi membuat potongan kertas berbentuk segitiga dengan panjang alasnya 24 cm dan tingginya 15 cm. luas potongan kertas yang dibuat budi adalah ...
- Seorang penjahit akan memasang pita di setiap tepi Sebuah kain batik. Kain batik tersebut berbentuk persegi panjang dengan panjang 175 cm dan lebar 120 cm. Panjang pita yang harus di sediakan penjahit adalah ... Cm

Uraian

- Sebuah kebun berbentuk persegi dengan ukuran 32 m x 32 m. Di sekeliling kebun akan ditanami pohon mangga dan jarak antar pohon 4 m.  
a. Berapa luas kebun tersebut?  
b. Hitunglah banyak pohon mangga yang dapat ditanam!

**Figure 3.** End-of-semester Summative Assessment  
*Source: Author's Documentation 2023*

Based on **Figure 3**, the assessment techniques used in the fifth-grade two-dimensional figure material at SD Muhammadiyah Plus Malangjiwan Colomadu are in the form of 3 multiple-choice questions, two essay questions, and one description question. In the end-of-semester summative assessment, the teacher presents questions on the area and perimeter of a square, the area and perimeter of a rectangle, the area of a trapezoid, the area of a triangle, and the perimeter of a parallelogram. SD Muh Plus Malangjiwan Colomadu does not use the government-provided template; instead, it develops or modifies its own, tailored to the specific learning needs that will be implemented. When creating summative assessment questions, fifth-grade Mathematics teachers refer to learning objectives, which ultimately help achieve learning outcomes. The process of making questions is aligned with students' content, context, and cognitive level. To ensure that these questions can measure students' ability and level of thinking. In planning the end-of-semester summative assessment of two-dimensional figure material, the principal monitors or prepares questions.

As stated during the interview, the fifth-grade Mathematics teachers at SD Muh Plus Malangjiwan, Colomadu, do not use and compile question grids when preparing summative assessment questions for the scope of the material, mid-semester summative assessments, and end-of-semester summative assessments.

**Question:** Are teachers guided by a grid when planning summative assessment questions?

**KS:** *According to the rules and regulations, teachers are required to continue using the grids. They are a teacher's guide, so the questions are precise and clear.*

**GM:** *Teachers should use grids. However, I did not use grids in planning the summative assessment questions on the two-dimensional figure material yesterday.*

**WK:** *I use grids for mid- and end-of-semester assessments. However, I did not use grids if it is just a material scope assessment.*

When implementing summative assessments of the material's scope, mathematics teachers do not use grids. However, compared to summative assessments at the mid- and end-of-the semester, teachers still use grids to be more precise and transparent for students. The planning of summative assessments on two-dimensional figure materials in the fifth grade has obstacles, but these obstacles can be overcome. In planning the assessment, the fifth-grade mathematics teachers identified time as the main obstacle. In addition to teaching in the classroom, Mathematics teachers are also responsible for managing the school administration in the school office. Fifth-grade mathematics teachers are making questions independently and require several references from last year's questions, textbooks, and the internet, so it requires considerable time for preparation. Another challenge that fifth-grade Mathematics teachers encounter is students' complaints about difficulties in solving general or geometry-related problems, which in turn diminish their motivation to engage with geometry learning. This consequently affects the implementation of the assessment, resulting in significant disparities in students' scores. Teachers offer motivational support, supplementary materials, and facilitate group learning to address this challenge, to encourage student collaboration. In cases where students' performance is insufficient, the teacher will revisit and discuss the content collectively in class. Subsequently, the students will be reassessing the same set of questions.

## Discussion

In the assessment planning for fifth-graders at SD Muh Plus Malangjiwan, the summative assessment on the scope of material, mid-semester assessment, and end-of-semester assessment on the two-dimensional figure material are designed to measure the learning objectives that the Mathematics teacher sets. Kriteria Ketuntasan Minimal (KKM) is no longer used to assess student learning outcomes quantitatively. However, under the Kurikulum Merdeka, teachers establish specific criteria or indicators of learning goal attainment to determine the extent to which students have achieved the intended learning objectives (Nurcahyono & Putra, 2022). Summative assessments are the primary means of measuring student learning outcomes at both elementary and secondary education levels. These are used to determine grade promotion or completion of a learning unit by comparing the results with the established learning achievement criteria (Purnawanto, 2022).

At SD Muh Plus Malangjiwan, particularly in fifth grade, in the planning of summative assessments on the scope of material, mid-semester assessments, and end-of-semester assessments, teachers provide questions on the area and perimeter of two-dimensional figures such as triangles, squares, parallelograms, rectangles, trapezoids, and kites. When conducting summative assessments on two-dimensional figure materials, teachers often use essay-type questions to gain deeper insights into students' understanding. The teachers commonly employ multiple-choice, short-answer, matching, and descriptive questions. According to the Appendix of the Permendikbud No. 104 of 2014 on Penilaian Hasil Belajar oleh Pendidik pada Pendidikan Dasar dan Pendidikan Menengah, written tests may take the form of multiple-choice questions, binary choices (true-false, yes-no), matching, and cause-effect formats, or require students to supply answers through fill-in-the-blanks, short answers, or essay-type answers. Furthermore, the Permendikbud states that written tests aim to guide students in solving problems by formulating their responses, as exemplified by essay-type questions (Sugiri & Priatmoko, 2020).

The implementation of summative assessment on the two-dimensional figure materials in the fifth grade at SD Muh Plus Malangjiwan needs to be optimized, as the 2023/2024 academic year marks the first time application of the Kurikulum Merdeka for this grade level. The implementation of the Kurikulum Merdeka by educational institutions is carried out gradually, based on each school's readiness, to ensure a smooth transition in the National Curriculum reform. This is rooted in the principle of learning freedom, aiming to create a comfortable learning environment that is free from the pressure of achieving specific grades or scores (Wiguna et al., 2022).

In preparing and developing summative assessment questions, the fifth-grade Mathematics teachers at SD Muhammadiyah Plus Malangjiwan, Colomadu, do not use a written grid. Instead, the teacher directly constructs the questions based on the main topics taught in class. However, creating questions based on a previously developed grid can benefit the teacher. A grid helps ensure the assessment questions are well-sampled, meaning all main topics are proportionally covered. Therefore, it would be better to make test items if the teacher first prepares a content grid to serve as a guideline.

SD Muh Plus Malangjiwan develops its teaching modules based on the characteristics of its students, including the corresponding assessments. According to Maulida (2022), the Kurikulum Merdeka allows teachers to expand teaching modules in two ways. The first is through the use of government-prepared modules, which teachers are free to select or modify based on student characteristics. The second option allows teachers to independently design their modules, tailored to the learning material and the needs of their students. In developing teaching modules, teachers must understand the appropriate strategies and requirements to meet the principles of effective learning and assessment.

In the planning of summative assessments, challenges arise from both teachers and students. Teachers face difficulties such as needing multiple references and significant time to construct assessment questions. On the student side, some fifth-grade students at SD Muh Plus Malangjiwan perceive mathematics as a complex subject, which often leads to feelings of discouragement. This is primarily due

to a lack of understanding of the fundamental concepts of the two-dimensional figure (Hidayat, 2019). Additionally, mathematics is generally less favored among students, with fear often emerging even before attempting problems, along with a lack of persistence when faced with complex mathematical tasks. According to Hidayati & Afifah (2020), probabilistic thinking abilities vary when solving mathematical problems based on geometric probability. Thus, mathematics involves diverse stages of problem-solving that students can engage in, closely related to their thought processes.

## **CONCLUSION**

Fifth-grade at SD Muh Plus Malangjiwan began implementing the Kurikulum Merdeka in the current academic year, 2023/2024. Therefore, careful planning of summative assessments is essential. The school does not use the government-provided teaching modules but instead develops and modifies its own, including the assessment methods applied. Planning summative assessments on two-dimensional figures requires selecting appropriate assessment techniques, allocating considerable time, consulting references from both textbooks and online sources, ensuring accuracy, and supproviding porting facilities for question development. The summative assessment planning at SD Muhammadiyah Plus Malangjiwan includes summative assessments on the scope of material, mid-semester summative assessments, and end-of-semester summative assessments. In the summative assessment on the scope of material, teachers present questions on the area and perimeter of triangles, parallelograms, rectangles, trapezoids, and kites. The assessment technique is written-based, consisting of essay questions and 10 items. In the mid-semester summative assessment, the teacher presents questions on the area and perimeter of triangles, the area of parallelograms, squares, and the perimeter of rectangles. The assessment techniques used during the mid-semester summative assessment include three multiple-choice questions, two essay questions, and one descriptive question. In the end-of-semester summative assessment, the teacher presents questions on the area and perimeter of squares, the area and perimeter of rectangles, the area of trapezoids, the area of triangles, and the perimeter of parallelograms. The assessment techniques consist of 3 multiple-choice questions, two essay questions, and one descriptive question. The selection of questions for the mid- and end-of-semester summative assessments must go through a review and revision process conducted by the school's editor. A suggestion for future researchers is to explore the implementation of summative assessments under the Kurikulum Merdeka in greater depth across various mathematics topics.

## **AUTHOR'S NOTE**

In the publication of this article, the author declares that there is no conflict of interest. The author affirms that the data and content of the article are free from plagiarism. This study, titled Summative Assessment Planning in the Kurikulum Merdeka on Two-Dimensional Figure Materials, was conducted at SD Muhammadiyah Plus Malangjiwan, Colomadu. This research aims to analyze the planning of summative assessments on the two-dimensional figure materials at SD Muhammadiyah Plus Malangjiwan, Colomadu. The author expresses deepest gratitude to Allah SWT for His endless blessings, grace, guidance, and help, which made the completion of this article possible. The researcher also extends sincere thanks to Universitas Muhammadiyah Surakarta for its contribution to the implementation of this study. Gratitude is also conveyed to the supervising lecturer, the lecturers of the PGSD Program at Universitas Muhammadiyah Surakarta, the researcher's parents, the principal, and all the teachers at SD Muhammadiyah Plus Malangjiwan, Colomadu, who provided support and granted permission for the research.

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