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Analysis of Formative and Summative Evaluation Implementation in Physics Learning Process at MA Masyariqul Anwar

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Abstract

Evaluation in the learning process plays an important role in assessing students' competency achievement. Formative and summative evaluations are two main approaches in assessing the effectiveness of learning. This study aims to analyze the implementation of formative and summative evaluations in physics learning at MA Masyariqul Anwar. The research method used is a qualitative method with a case study approach. Data were collected through observation, interviews, and document analysis. The results of the study indicate that formative evaluation is implemented in the form of quizzes, discussions, and individual assignments, while summative evaluation is carried out through midterm and final exams. The obstacles faced include time constraints in implementing formative evaluation and lack of student readiness in facing summative evaluation. This study recommends increasing teacher training in formative evaluation and optimizing learning time to improve assessment quality.

Keywords: Formative evaluation, summative evaluation, physics learning, educational assessment

Abstrak

Evaluasi dalam proses pembelajaran memiliki peran penting dalam menilai pencapaian kompetensi siswa. Evaluasi formatif dan sumatif menjadi dua pendekatan utama dalam menilai efektivitas pembelajaran. Penelitian ini bertujuan untuk menganalisis implementasi evaluasi formatif dan sumatif dalam pembelajaran fisika di MA Masyariqul Anwar. Metode penelitian yang digunakan adalah metode kualitatif dengan pendekatan studi kasus. Data dikumpulkan melalui observasi, wawancara, dan analisis dokumen. Hasil penelitian menunjukkan bahwa evaluasi formatif diterapkan dalam bentuk kuis, diskusi, dan tugas individu, sedangkan evaluasi sumatif dilakukan melalui ujian tengah semester dan ujian akhir. Kendala yang dihadapi antara lain keterbatasan waktu dalam penerapan evaluasi formatif serta kurangnya kesiapan siswa dalam menghadapi evaluasi sumatif. Studi ini merekomendasikan peningkatan pelatihan guru dalam evaluasi formatif serta optimalisasi waktu pembelajaran untuk meningkatkan kualitas asesmen.

Kata Kunci: Evaluasi formatif, evaluasi sumatif, pembelajaran fisika, asesmen Pendidikan

Introduction

Evaluation is an integral part of the learning process that aims to assess students' understanding and development in a subject (Ulfah et al., n.d.). According to Arikunto, evaluation is a series of activities to measure and assess student learning outcomes with the aim of knowing the effectiveness of the learning that has been carried out (Kuswara et al., 2024). Formative evaluation is an evaluation conducted during the learning process and is diagnostic in nature (Marzuki, 2023). Black & Wiliam (1998) state that formative evaluation aims to collect information about students' learning progress which is used as a basis for

providing feedback and improving the learning process (Education Assessment Center, 2019). Formative evaluation is used to monitor students' learning process continuously. Formative assessment in Physics learning at this time has not been carried out optimally. In fact, empirically, formative assessment in physics learning can improve student learning outcomes in the cognitive domain and students can also form learning strategies independently. Summative evaluation is used to assess the final achievement after a period of learning. In the context of physics learning, proper evaluation is needed to ensure students' concept understanding and critical thinking skills (Abdullah, 2017; Andayani & Madani, 2023; Sari et al., 2019; Zalmansyah & Rini, 2024). Physics learning at the secondary school level is often considered a difficult and saturating subject by students (Irawan et al., 2020; Putri et al., 2020; Zaini & Ilmiati, n.d.). Students do not understand the essence of Physics concepts so that learning Physics is not meaningful in their lives (Kusairi, 2013; Yulianti et al., 2023). If this difficulty does not get the right treatment, students' physics learning achievement will be low (Syahdah & Irvani, 2023). This problem also occurs at MA Masyariqul Anwar, where the teacher centered approach is still dominant in the physics learning process.

The implementation of formative and summative evaluations in the physics learning process at MA Masyariqul Anwar still has several gaps between theory and reality including, first, teachers tend to focus more on delivering material and only conducting evaluations at the end of the lesson or the end of the chapter, without any continuous evaluation during the learning process. Secondly, most formative evaluations are only limited to giving grades from assignments or exercises without being accompanied by explanations to improve student understanding. Thirdly, summative evaluation is still dominantly in the form of written tests, while aspects of science process skills, such as experimentation or observation, have not been systematically assessed. Fourth, limited time and resources make it difficult for teachers to design and implement varied and thorough evaluations. Fifth, teachers' understanding of the function of formative evaluation is still limited, so the role of evaluation in supporting the learning process is not maximized. The solution offered is to comprehensively evaluate the implementation of existing formative and summative evaluations and identify constraints and opportunities for improvement. This is expected to provide a more complete picture of evaluation practices in the field and a more effective and contextualized evaluation development strategy.

The purpose of this study is to describe the implementation of formative and summative evaluations in physics learning at MA Masyariqul Anwar and identify the obstacles faced in the implementation of these evaluations.

Methods

This research uses a qualitative approach with a case study method. Qualitative approach research with case study method is a research approach that aims to investigate and understand phenomena in depth in the context of real life. The case study method is one type of approach in qualitative research that focuses on an intensive study of a unique or specific case (Assyakurrohim et al., 2022; Ilhami et al., 2024; Poltak & Widjaja, 2024). This case study aims to explore the experiences, challenges, and solutions faced by physics teachers in implementing formative and summative evaluations in the learning process (Indana, 2018; Sholeh, 2023). The qualitative approach allows researchers to gain a deep and comprehensive understanding of the phenomenon under study through interviews with physics teachers (Novita Barokah, 2025; Valenza & Nora, 2024). Data were obtained through interviews with physics teachers with questions as in table 1.

Table 1. List of Questions to Physics Teacher

No.	Questions
1.	How is formative evaluation applied in physics learning at MA Masyariqul Anwar?
2.	What are the summative evaluation methods used in physics subject?
3.	What are the biggest challenges in implementing formative and summative evaluation in this school?
4.	How do students respond to formative and summative evaluation in physics learning?
5.	In your opinion, how can we improve the effectiveness of formative and summative evaluations in physics learning?

This research was conducted at MA Masyariqul Anwar Durian Payung, central Tanjung karang sub-district, bandar lampung city. After the interview was conducted, the data collected was then analyzed using NVivo software. With nodes are the implementation of formative evaluation, short quizzes, group discussions, giving individual assignments, summative evaluation methods, midterm exams, final exams, projects or experiments, challenges to the implementation of evaluation, lack of student readiness and time constraints. then the data is analyzed descriptively to obtain a comprehensive picture of the implementation of formative and summative evaluation.

Results and Discussion

Michael Scriven was the first to explicitly distinguish between formative and summative evaluation. Formative evaluation aims to improve the learning process during the activity, while summative evaluation serves to assess the final learning outcomes (Haris, 2021; RIADI, 2017). The implementation of formative and summative evaluation in the learning process is the application of two types of assessment that have different but complementary functions and objectives to improve the quality of learning and measure the achievement of student learning outcomes (Akbar et al., 2024; Khasanah et al., 2024; Suardipa & Primayana, 2023; Suciani et al., 2023). Formative evaluation is an assessment activity carried out continuously during the learning process to monitor student progress and provide feedback (Fitrianti, 2018; Taqiyuddin et al., 2024). Its main purpose is to improve the teaching and learning process that is being or has been carried out, not to determine the level of student ability (Bahri, 2023; Zalmansyah & Rini, 2024). Summative evaluation is an assessment conducted after the learning process is complete to provide a final picture of student learning outcomes (Firani Putri & Supratman Zakir, 2023). This evaluation is carried out at the end of a certain learning period, such as the end of the semester, with the aim of measuring the achievement of learning outcomes and the level of understanding of students of the material that has been taught (Andrian et al., 2024; Annisa Rahmadani et al., 2024).

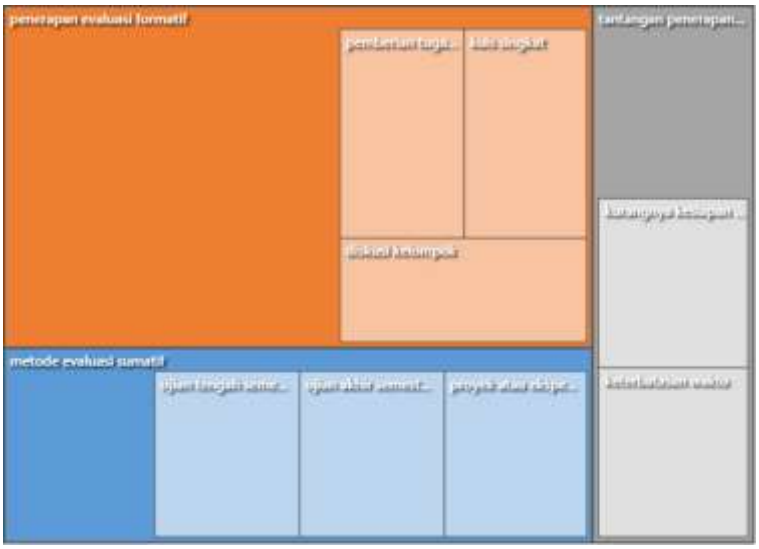
Physics learning is very important in high schools, one of which is in MA Masyariqul Anwar Durian Umbrella, physics is closely related to life, even the development of technology cannot be separated from physics. The results of this study are as in table 2.

Table 2. Results of interviews with physics teachers

No.	Questions
1.	Formative evaluation is implemented through short quizzes, group discussions, and individual assignments. I also often give direct feedback to students so that they understand their mistakes and improve their understanding.

No.	Questions
2.	The summative evaluation methods we use include midterm exams (UTS), final exams (UAS), as well as physics projects or experiments that are assessed based on certain rubrics.
3.	The biggest challenges are the time constraints in providing feedback on formative evaluations as well as students' lack of preparedness for summative evaluations due to inconsistent study habits.
4.	Most students responded positively to the formative evaluation because they felt it helped them understand the material. However, some were less enthusiastic because they felt burdened. For summative evaluations, many students feel tense because the results determine the final grade.
5.	One way that can be done is to increase the variety in the formative evaluation method to make it more interesting for students, as well as provide more varied practice questions before the summative evaluation so that they are better prepared.

The results of the interviews above were then processed using NVivo software



Gambar 1. Data Visualization of formative and summative evaluation implementation using NVivo

Based on the results of interviews with physics teachers that in formative evaluation, they apply various methods such as short quizzes, group discussions, and individual assignments to assess students' understanding. In addition, this teacher also often provides direct feedback to students to help them understand mistakes and improve their understanding of the material that has been taught. In summative evaluation, physics teachers use midterm exams (UTS), final exams (UAS), as well as physics projects or experiments that are assessed based on certain rubrics. This summative evaluation serves to assess students' overall achievement after going through the learning process. However, there are challenges faced by teachers, mainly related to the limited time to provide sufficient feedback on formative evaluations. In addition, students' readiness for summative evaluation is also an issue, as many students lack consistent study habits. This makes them insufficiently prepared for major exams or assessments.

Most students responded positively to the formative evaluation, finding it helpful in understanding the material. However, not all students were enthusiastic, as some felt burdened by the tasks. Meanwhile, summative evaluations tend to cause anxiety in students,

especially since the results greatly affect their final grades. To improve the effectiveness of evaluation, this teacher suggested that variations in formative evaluation methods be increased to make it more interesting for students. In addition, more varied practice questions could also be given before summative evaluations to help students prepare better.

The results showed that physics teachers at MA Masyariqul Anwar have implemented formative evaluation through various methods, such as:

1. Daily Quizzes - Used to measure students' initial understanding of the material that has been taught.
2. Class Discussion - Facilitates interaction between teachers and students to identify learning difficulties.
3. Individual and Group Assignments - Provides opportunities for students to apply physics concepts in problem solving.

Summative evaluation is implemented through:

1. Midterm and End of Semester Exams - As an assessment of the achievement of learning outcomes within a certain period.
2. Practicum and Report - Measures students' experimental skills in understanding physics concepts practically.

Some of the obstacles faced in the implementation of evaluation are:

1. Lack of readiness of students in facing summative evaluation due to inconsistent learning habits.
2. Time constraints in conducting formative evaluations on a regular basis.
3. Diverse student responses, where some students had difficulty in facing repeated formative evaluations.

To overcome these obstacles, several recommendations were given, including:

1. Teacher Training - Improving teachers' competence in preparing and implementing formative evaluations effectively.
2. Optimization of Learning Time - Adjusting the time allocation so that formative evaluations can be conducted without reducing the portion of material delivery.
3. More Interactive Approach - Using technology and innovative methods in assessment to increase student participation.

Conclusion

Based on the results of research on the implementation of formative and summative evaluation in physics learning at MA Masyariqul Anwar. The results showed that formative evaluation is implemented in the form of quizzes, discussions, and individual assignments, while summative evaluation is carried out through midterm and final exams. The obstacles faced include time constraints in the implementation of formative evaluation and students' lack of readiness in facing summative evaluation.

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