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The Implementation of Diagnostik Assessment in Geography Education Within the Merdeka Curriculum

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Abstract

This study explores the implementation of diagnostic assessment in Geography education within the Merdeka Curriculum framework at SMA Negeri 1 Blora. Diagnostic assessment serves to identify students' prior knowledge, enabling teachers to tailor instruction and design personalized strategies aligned with curriculum goals. Employing a descriptive qualitative case study approach, data were collected through interviews with teachers and students, classroom observations, and document analysis. Findings reveal that diagnostic assessment is conducted in three stages planning, implementation, and follow-up. During planning, teachers prepare assessment tools aligned with curriculum objectives. Implementation occurs before new topics to gauge students' baseline knowledge, while follow-up involves adjusting teaching methods based on assessment results to address learning gaps. Challenges include limited time and difficulty in developing comprehensive, accurate questions. Despite these, diagnostic assessment enhances students' Geography understanding and improves education quality under the Merdeka Curriculum. The study emphasizes its role in fostering a student-centered learning environment

Keywords: Diagnostic Assessment; Merdeka Curriculum; Geography Education

Introduction

Education in Indonesia faces significant challenges in achieving the desired quality, particularly through the implementation of effective assessments that align with students' needs. Diagnostic assessment plays a crucial role in the learning process by measuring students' initial abilities and identifying learning difficulties early. This assessment is especially relevant within the Merdeka Curriculum, which emphasizes a student-centered approach. The Merdeka Curriculum grants teachers the freedom to design flexible lessons tailored to students' characteristics, using more in-depth assessments such as diagnostic assessments.

These assessments help teachers understand students' initial conditions, enabling them to develop targeted and personalized teaching strategies. According to Brown (2019), diagnostic assessment provides teachers with a clear picture of students' initial understanding of concepts and the challenges they may encounter. In the context of Geography education, diagnostic assessment is vital to identify students' comprehension of spatial concepts, natural phenomena, and social interactions. Therefore, it should be conducted at the beginning of the learning process to ensure that instruction can be appropriately directed and tailored to student needs.

Furthermore, diagnostic assessment aids teachers in mapping students' abilities and adjusting teaching materials according to their level of understanding, supporting the Merdeka Curriculum's goal of delivering personalized and relevant learning experiences. Despite widespread theoretical acceptance of diagnostic assessment, its implementation at SMA Negeri 1 Blora faces challenges. One major issue is the limited understanding and skills of teachers in designing effective assessment instruments. Observations at SMA

Negeri 1 Blora reveal that although diagnostic assessment has been introduced as part of the Merdeka Curriculum, some teachers still struggle to develop relevant and appropriate assessment tools for Geography subjects. Research by Kizi and Shadjalilovna (2022) similarly highlights that many teachers do not fully utilize diagnostic assessment results to adjust their teaching strategies. Time constraints also pose a significant obstacle. The dense curriculum and limited class hours restrict the opportunity to conduct thorough diagnostic assessments for all students. Consequently, many student difficulties or misconceptions remain unidentified before more advanced material is introduced, resulting in suboptimal understanding of Geography content. Ideally, effective implementation of diagnostic assessment requires collaboration among subject teachers, homeroom teachers, and guidance counselors to address both cognitive and non-cognitive issues affecting student learning (Magistra, 2023).

However, such collaboration at SMA Negeri 1 Blora remains limited, especially regarding comprehensive utilization of assessment results. Geography, which covers complex topics such as natural phenomena, geospheric processes, and human-environment interactions, demands diagnostic assessments capable of measuring students' foundational understanding. This subject requires not only memorization but also analytical and critical thinking skills. Diagnostic assessment must therefore evaluate students' grasp of key concepts such as the Earth system, mapping, and global issues including climate change and environmental degradation.

At SMA Negeri 1 Blora, challenges persist in identifying student misconceptions about geospheric phenomena, underscoring the need for more systematic and structured assessments. Diagnostic assessment is a fundamental type of evaluation designed to identify students' strengths and weaknesses prior to instruction. Teresia (2021) defines assessment as an evaluation of students' learning processes, progress, and outcomes, while Yusuf (2017) emphasizes that assessment aims to systematically collect data on student abilities without focusing on final grades, thereby enabling learning monitoring and feedback provision. Brown (2019) highlights that diagnostic assessment helps detect learning difficulties and guides teachers in designing appropriate lessons.

Furthermore, diagnostic assessment includes cognitive and non-cognitive components. Cognitive assessments focus on students' understanding of basic concepts, whereas non-cognitive assessments evaluate emotional and social factors that influence learning (Maryani, 2023). Kasman and Lubis (2022) stress the importance of non-cognitive assessments in mapping social and emotional conditions, which can significantly affect learning success. The benefits of diagnostic assessment extend to both teachers and students. For teachers, assessment results provide valuable information to develop learning strategies better aligned with student needs (Ardiansyah, 2023).

For students, diagnostic assessment promotes awareness of their learning strengths and weaknesses, enabling them to concentrate on areas requiring improvement (Maryani, 2023). As a core subject in the Merdeka Curriculum, Geography teaches the relationship between humans and nature, as well as physical and social phenomena on Earth's surface. It involves spatial analysis and understanding concepts such as patterns, distribution, and human-environment interactions (Putri, 2024). Diagnostic assessment in Geography helps identify student difficulties in understanding these topics and supports teachers in addressing misconceptions and learning obstacles effectively (Maryani, 2023). This study aims to investigate the implementation of diagnostic assessment in Geography instruction at SMA Negeri 1 Blora, focusing on how it enhances student understanding and aids teachers in designing more effective, student-centered teaching strategies. The findings are expected to contribute to the advancement of diagnostic assessment practices in secondary school Geography education.

Method

This study uses a descriptive qualitative approach, which aims to generate descriptive data in the form of written or oral words from people and behaviors that can be observed. This approach is directed towards understanding the background and individuals holistically, without isolating them into specific variables or hypotheses, but as part of a complete unity. This approach was chosen because the issue being researched is complex, dynamic, and full of meaning, requiring an in-depth understanding of the social and cultural context underlying the phenomenon. Qualitative research does not test pre-formulated theories, but is conducted through direct field observation to obtain data that is relevant to the research problem. In this case, the researcher directly engages to gather data that is considered capable of answering the research question regarding the implementation of diagnostic assessment in Geography lessons within the Merdeka Curriculum. The method used in this study is qualitative research with a case study approach. A case study is in-depth research on individuals, groups, organizations, or programs within a certain period of time, with the aim of obtaining a comprehensive and deep description (Creswell, 2023). This research chooses a case study approach because its primary focus is to further examine the implementation of diagnostic assessments in Geography lessons at SMA Negeri 1 Blora, a school that implements the Merdeka Curriculum.

This study was conducted at SMA Negeri 1 Blora, the only school in Blora Regency recognized as a school driver. The school is located at Jl. Tentara Pelajar No 21, Kelurahan Tempelan, Kecamatan Blora, Kabupaten Blora, Jawa Tengah 58251. The research was conducted from September 2024 to February 2025. The selection of SMA Negeri 1 Blora as the research site was based on its status as a school driver that implements the Merdeka Curriculum with the Mandiri Berubah category and its commitment to improving the quality of learning through innovative and student-centered approaches. This study employs a qualitative research design aimed at gaining a deep understanding of the phenomenon occurring in the implementation of diagnostic assessments in Geography lessons.

This research also adheres to the principles of qualitative research, which focuses on data collection in a natural setting and the analysis of data using inductive and deductive methods to form patterns or themes. Qualitative research is used to study phenomena in their natural conditions, with an approach sensitive to the context of society and the research location. The main instruments in this study were in-depth interviews, observations, and documentation. Interviews were conducted with Geography teachers, the school principal, and several students at SMA Negeri 1 Blora to explore their understanding of the implementation of diagnostic assessments within the Merdeka Curriculum. Observations were carried out during the learning process to directly observe the implementation of diagnostic assessments. Documentation includes the collection of data related to the planning, implementation, and follow-up of diagnostic assessments in the Geography class. This study was carried out in several stages, (1) Planning the Diagnostic Assessment, The researcher identifies the assessment material based on the core competencies and designs assessment instruments that align with the curriculum and students' characteristics. (2) Implementation of the Diagnostic Assessment, Diagnostic assessments were conducted at the beginning of the lesson to identify students' initial understanding of Geography material. (3) Data Analysis, the data obtained from interviews, observations, and documentation were analyzed by organizing the data, identifying themes, and drawing conclusions relevant to the research objectives. The main data sources in this study were Geography teachers, students, and documents related to the implementation of the Merdeka Curriculum at SMA Negeri 1 Blora. Data was also

obtained through direct observation of the diagnostic assessment process conducted in the Geography class. Data analysis in this study used thematic analysis techniques, where data collected from interviews, observations, and documentation were analyzed to identify key themes related to the implementation of diagnostic assessments. The data was analyzed inductively by grouping relevant information to answer the research questions.

Result dan Discussion

The implementation of diagnostic assessment in Geography education at SMA Negeri 1 Blora involves three distinct stages planning, implementation, and follow-up. During the planning stage, teachers develop a detailed assessment schedule aligned with the core competencies outlined in the Merdeka Curriculum. They carefully select and design assessment questions that are relevant and tailored to students' characteristics and abilities. The assessment format predominantly uses simple yet effective question types intended to capture students' baseline knowledge accurately. This preparation reflects the approach described by Maryani, Hasanah and Suyatno (2023) who emphasize the importance of aligning assessment materials with core competencies. In the implementation stage, diagnostic assessments are administered at the beginning of Geography lessons, employing tools such as surveys and pre-tests. These instruments evaluate students' initial understanding of key geographic concepts, including spatial phenomena, mapping skills, and environmental interactions. The results provide a clear picture of the gap between students' prior knowledge and the upcoming curriculum content, allowing teachers to customize learning strategies accordingly. Kusnadi (2020) & Brown (2019) highlight that such assessments are essential in identifying students' learning difficulties and adjusting instruction to better meet diverse needs.

The follow-up stage involves analyzing the diagnostic assessment results to categorize students into three groups, fully understood, partially understood, and not understood. Students demonstrating strong comprehension continue with advanced material, while those needing support receive targeted remedial lessons. This strategic grouping facilitates differentiated instruction, ensuring all students receive tailored learning experiences. Magistra (2023) and Suryani and Susanto (2021) underline that follow-up actions based on assessment outcomes are critical for addressing individual learning needs and improving educational effectiveness.

However, several challenges emerged in the application of diagnostic assessment. Time constraints are significant, limiting teachers' ability to conduct comprehensive assessments for all students (Kizi and Shadjalilovna, 2022). Additionally, some teachers face difficulties in designing assessment questions that fully capture students' learning gaps and misconceptions, indicating a need for further professional development in assessment design (Harahap & Marwoto, 2020). Despite these challenges, the diagnostic assessment approach has demonstrated clear benefits. It enables teachers to identify students' strengths and weaknesses regarding key Geography topics, such as map interpretation, understanding natural phenomena, and human-environment relationships.

As Maryani et al., (2023) state, diagnostic assessments help align instructional planning with students' specific learning needs. Moreover, diagnostic feedback allows students to recognize their learning challenges and focus on improving their understanding (Ardiansyah, 2023; Raharjo, 2018). This dual benefit underscores the integral role of diagnostic assessments in enhancing Geography education quality at SMA Negeri 1 Blora. The study's findings confirm that SMA Negeri 1 Blora has adopted a systematic approach to diagnostic assessment, consistent with the principles of the Merdeka Curriculum that advocate student-centered and flexible learning.

The three-stage process planning, implementation, and follow-up ensures that assessments inform tailored instructional strategies. The detailed planning aligns with recommendations from Maryani, Hasanah and Suyatno (2023); Anggraena (2023), who emphasize the need for thorough preparation in selecting competencies and question types to effectively diagnose student understanding. This stage is foundational to the success of subsequent phases. The use of pre-tests and surveys in the implementation phase effectively identifies students' initial competencies and gaps.

This supports the literature by Brown (2019); Widodo (2019), which recognizes diagnostic assessments as vital tools for informing differentiated instruction. The study also resonates with findings by Sari and Lestari (2021) highlighting the importance of teacher preparedness in administering such assessments. The follow-up process at SMA Negeri 1 Blora demonstrates effective use of assessment data to group students and provide differentiated learning opportunities, mirroring the approach advocated by (Magistra, 2023; Maryani et al., 2023).

Such practices ensure that students who struggle receive remedial support, while others are engaged with enrichment material, promoting inclusive education as emphasized by (Purnomo & Aji, 2020; Amelia, Purnomo, 2020). The challenges faced particularly limited instructional time and teacher capacity in assessment design reflect common issues identified in the literature (Kizi & Shadjalilovna, 2022; Magistra, 2023). Addressing these constraints is critical for optimizing diagnostic assessment's impact.

Providing targeted professional development could empower teachers to develop more comprehensive and accurate assessment tools, thereby enhancing the identification of student misconceptions and learning barriers. Comparatively, while SMA Negeri 1 Blora shows commendable implementation efforts, similar challenges have been reported in other schools adopting the Merdeka Curriculum, indicating systemic issues that warrant broader policy attention. Future research might include comparative studies across schools to identify best practices and scalable solutions.

Overall, this study highlights the significant positive role of diagnostic assessment in improving Geography learning outcomes at SMA Negeri 1 Blora. By systematically planning, implementing, and following up on assessments, teachers can provide personalized learning experiences that meet diverse student needs. Addressing existing challenges will further enhance the effectiveness and sustainability of diagnostic assessment within the Merdeka Curriculum framework.

Conclusion

This study reveals that the implementation of diagnostic assessment in Geography education at SMA Negeri 1 Blora positively influences the quality of learning by enabling more targeted and student-centered instruction. The systematic process of planning, administering, and following up on diagnostic assessments allows teachers to identify students' learning needs effectively and tailor lessons accordingly. Theoretically, this research reinforces the role of diagnostic assessment as a critical component in adaptive curriculum frameworks such as the Merdeka Curriculum, highlighting its capacity to bridge gaps between students' prior knowledge and new content. Practically, it provides evidence that well-structured diagnostic assessments can support differentiated teaching strategies and remedial interventions in secondary education contexts. Despite its benefits, challenges related to limited instructional time and assessment design skills persist, indicating the need for enhanced teacher training and institutional support. Future research should explore longitudinal impacts of diagnostic assessment on student outcomes and compare practices across different schools implementing the Merdeka Curriculum. Policymakers and education practitioners are encouraged to prioritize

professional development programs focused on diagnostic assessment design and integration, as well as allocate sufficient time within the curriculum to conduct comprehensive assessments.

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