

## DIAGNOSTIC ASSESSMENT AS THE FOUNDATION FOR ADAPTIVE AND DIFFERENTIATED LEARNING TRANSITION TO THE MERDEKA CURRICULUM

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### Abstract

Diagnostic assessment plays a crucial role in the successful implementation of the Merdeka Curriculum, as it provides a foundation for adaptive, responsive, and differentiated learning. This study aims to offer a comprehensive understanding of the role of diagnostic assessment in identifying students' readiness, learning needs, strengths, and weaknesses, as well as their socio-emotional conditions. Using a descriptive qualitative approach with library research as the main method, this study analyzes various sources, including official modules from the Ministry of Education and Culture, scientific journals, reference books, and relevant previous studies. The findings indicate that diagnostic assessment, classified into cognitive and non-cognitive types, enables teachers to design effective instructional strategies, implement remedial and enrichment programs, and foster collaboration among educators. Despite its advantages, diagnostic assessment also presents challenges such as potential misinterpretation, time constraints, and the need for adequate teacher training. Overall, diagnostic assessment serves not only as an instrument to measure student readiness but also as a theoretical construct that bridges curriculum objectives with learner diversity, thereby strengthening the foundation of differentiated and holistic education in the Merdeka Curriculum.

**Keywords:** *adaptive learning, diagnostic assessment, differentiated instruction, Merdeka Curriculum,.*

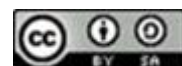
## 1. INTRODUCTION

Curriculum change is an inevitable necessity in line with technological advancements and evolving human needs. The Merdeka Curriculum, designed to adapt to these dynamics, has been undergoing pilot testing since 2021 in several Pioneer Schools. In 2022, its implementation was expanded through two approaches: becoming a Pioneer School or independently implementing the Merdeka Curriculum. One significant change compared to the 2013 Curriculum is the replacement of the terms 'evaluation' or 'examination' with 'assessment,' emphasizing a continuous assessment process to support the development of students' competencies (Sudiro, 2024).

In the context of the Merdeka Curriculum, assessments are scientifically classified into two main categories, namely cognitive and non-cognitive assessments. In terms of their purpose, assessments can be divided into diagnostic, formative, and summative assessments. In this study, the researcher focuses on diagnostic assessment, a specific type of assessment in the Merdeka Curriculum that has a specific purpose: to identify the characteristics of students, including their competency levels, strengths, and weaknesses in learning styles. The results of this assessment are used to design learning that is tailored to the diverse conditions and needs of students. (Nugroho dkk., 2023)

In Indonesia, Arabic language learning has become an integral part of the education curriculum, especially in madrasahs and Islamic boarding schools. However, in practice, Arabic language learning often faces various challenges, such as students' difficulties in mastering language skills, understanding complex grammar, and the differences between Arabic and Indonesian. To overcome these challenges, an appropriate learning approach is needed, including an effective assessment system. (Abdulloh & Hikmah, 2025)

One form of assessment that can help educators identify student learning problems and needs is diagnostic assessment. Diagnostic assessment is a process of gathering information that aims to identify students' strengths and weaknesses, as well as detect learning difficulties they face. The results of diagnostic assessment play an important role as a reference for teachers in developing learning strategies that are responsive to the characteristics and individual needs of students (Firmanzah & Sudibyo, 2021). From a theoretical perspective, diagnostic assessment aligns with the principles of formative assessment, differentiated instruction, and constructivist learning theory, all of which highlight the importance of understanding learners' prior knowledge, misconceptions, and cognitive readiness. By examining diagnostic assessment theoretically, researchers can explore its contribution to bridging curriculum objectives with learner diversity, advancing discourse on individualized learning, and strengthening the foundation of assessment theory in education.



According to the diagnostic assessment module published by the Ministry of Education and Culture, diagnostic assessments are classified into two main types, namely cognitive diagnostic assessments and non-cognitive diagnostic assessments. The purpose of cognitive diagnostic assessments is to identify students' level of competency mastery, adjust the learning process to the general abilities of students, and provide additional learning support, such as remedial classes, for students who need it. Non-cognitive diagnostic assessment aims to gain a comprehensive understanding of students' psychological and socio-emotional conditions, trace their activities during learning at home, explore their family background and social environment, and identify students' learning styles, personal characteristics, and learning interests. (Supriyadi dkk., 2022)

Diagnostic assessment enables educators to implement appropriate learning strategies, evaluate the achievement of learning objectives, and identify various needs that must be met in order to maximize student learning progress. Furthermore, this assessment plays an important role in supporting more accurate decision-making in the field of education. Through a comprehensive understanding of the potential, strengths, and weaknesses of individual students, educational policies can be formulated more effectively and responsively to the needs of each student. Based on this theoretical framework, the researcher feels it is necessary to delve deeper into diagnostic assessment, particularly in efforts to support effective, adaptive, and holistic student-centered learning.

## **2. LITERATURE REVIEW**

### **Diagnostic Assessment**

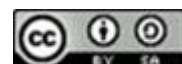
Assessment is an integral part of the learning process, serving as an integral part of learning facilities and a means of obtaining comprehensive information. Assessment provides important feedback for educators, students, and parents or guardians to help them formulate learning strategies to be applied in the next stage (Maisyaroh dkk., 2024). To achieve these objectives, assessments must be designed based on the principles of fairness, proportionality, validity, and reliability, so that they can provide an accurate picture of student learning progress, support decision-making, and serve as a basis for further learning planning. One form of assessment in the Merdeka Curriculum is diagnostic assessment. This assessment is conducted at the beginning of the learning process or at the beginning of the school year. (Baruta, 2023) The role of diagnostic assessment is crucial for educators, especially if they want to implement the Merdeka Curriculum optimally, as this assessment provides an initial foundation for understanding the learning conditions and needs of students. (Laulita dkk., 2022) The purpose of diagnostic assessment is to identify the weaknesses, strengths, knowledge, skills, and individual characteristics of students within a certain period of time. (Wulandari dkk., 2025)

Diagnostic assessments can be used as a first step in the learning process to identify the diversity of student characteristics. The purpose of these assessments is to determine students' readiness to learn, their initial understanding before learning begins, and to reveal learning needs that must be met in order for the learning process to proceed optimally. (D. Yani dkk., 2023) Through diagnostic assessments, teachers are required to identify functional difficulties experienced by students, the need for additional support, their potential and abilities, as well as appropriate strategies to support the learning process of students in the school environment. Additionally, this assessment provides important information about students' overall learning profiles. With this data, teachers can design and implement differentiated instruction tailored to the individual needs of students.

Diagnostic assessment enables teachers to analyze the extent to which students have mastered the learning material. The results of this analysis help teachers determine students' level of understanding and identify aspects that still need improvement in the learning process. (Rachmawati & Lestaringrum, 2022) The results of diagnostic assessment can serve as the primary reference for teachers in designing learning that aligns with students' characteristics. This adjustment is very important so that the learning process can run effectively and produce optimal results. From various perspectives, it can be concluded that diagnostic assessments not only serve to identify students' weaknesses but also to recognize their strengths. Thus, the information obtained from these assessments can help teachers in developing more appropriate and responsive learning strategies for the needs of each student. (Sriwahyuni dkk., 2024)

The implementation of diagnostic assessments provides significant benefits in the learning process (Iskak et al., 2023). First, these assessments help align learning outcomes with established learning objectives and goals. Second, the results provide relevant data for designing a more effective curriculum to improve the quality of learning. Third, this assessment makes the teaching and learning process more efficient by focusing on material that really needs to be explored in depth. Fourth, it creates a conducive learning environment that supports positive interaction between teachers and students. Fifth, diagnostic assessment helps teachers develop efficient and meaningful learning plans in accordance with the available time allocation.

Furthermore, this assessment also serves as a basis for summative assessment at the end of learning. Teachers can compare students' mastery of the material before and after the learning process to see the extent of improvement. Finally, diagnostic assessments make it easier for teachers to distribute instructions appropriately. Through the data obtained, teachers can identify students who need additional learning support in certain subjects (Nasution, 2022). Conversely, for



students who have mastered most of the material, teachers can develop enrichment activities beyond the standard curriculum to maximize their potential.

There are two parts to diagnostic assessment: non-cognitive and cognitive diagnostic assessment, which are distinguished based on their objectives. The purpose of each evaluation is (Salsabiil, 2023)

Purpose of Diagnostic Assessment	
Non-Cognitive	Cognitive
To obtain an overview of the psychological condition and socio-emotional aspects of students that affect their readiness and comfort in participating in learning	Adjusting learning to align with the general abilities of students in the class.
identifying various student activities during the home learning process to understand their involvement and responsibility for learning outside the school environment.	Adjusting learning to align with the general abilities of students in the class.
Obtaining information related to the situation and learning environment of students, including factors that can support or hinder the effectiveness of learning.	For students who have not achieved the minimum competency, remedial programs or additional learning are provided as a form of intervention to strengthen their understanding and skills that are still weak.
Understanding students' social backgrounds.	
Understanding the family conditions of students.	
Educators can identify students' learning preferences, personality aspects, and interests that play an important role in designing responsive and student-centered learning.	

The table above shows that non-cognitive diagnostic assessments provide a general overview of student profiles, including their background and initial competencies, which form the basis for designing learning that is aligned with students' interests, talents, learning styles, and daily conditions. (Rizka, 2023) This objective emphasizes the importance of understanding the

psychological, social, and personal aspects of students. Cognitive diagnostic assessments aim to obtain a general overview of students' initial abilities related to a subject topic. It can be conducted periodically, either at the beginning before introducing new material, at the end after all topics have been presented and reviewed, or at certain times during a semester to monitor students' understanding. (Maut, 2022) The output of cognitive diagnostic assessments provides important contributions to teachers in designing appropriate learning, providing constructive feedback, and facilitating the implementation of remedial programs in the next stage. These objectives focus on the academic or cognitive abilities of students. Overall, this table illustrates how diagnostic assessments can include non-cognitive elements to support a deeper understanding of students' personal, social, and mental elements in assessing their academic abilities. This aims to help teachers adjust their teaching approaches to be more effective.

### 3. METHOD

The purpose of this study is to provide a comprehensive understanding of the role of diagnostic assessment in supporting adaptive, responsive, and individualized learning. Such a focus is essential, as diagnostic assessment is not only a technical procedure but also a theoretical construct that shapes the way teachers interpret student diversity and respond to learning needs. To achieve this purpose, the study adopts a descriptive qualitative approach with library research as the primary method. (Pringgar & Sujatmiko, 2020) This approach is considered appropriate because it allows for an in-depth exploration of existing theories, concepts, and empirical findings related to diagnostic assessment without being limited by the constraints of classroom-based empirical data collection. The data sources were obtained through a systematic review of literature, including official modules issued by the Ministry of Education and Culture, peer-reviewed scientific journals, reference books, and relevant findings from previous research. (Muhammad Syahrur, 2022) The inclusion of these varied sources ensures a comprehensive perspective that integrates both policy documents and academic discourse. Data analysis was conducted using content analysis techniques, which involved identifying, categorizing, and interpreting information on the concepts, types, objectives, advantages, limitations, and implementation stages of diagnostic assessment within the context of the Merdeka Curriculum (Mahmudah dkk., 2023) This methodological framework provides a solid foundation for mapping the theoretical and practical relevance of diagnostic assessment, while also highlighting its potential as a tool to align curriculum goals with the diverse learning characteristics of students.



#### 4. DISCUSSION

##### The Role and Principles of Diagnostic Assessment

Diagnostic assessment is an important component in the classroom learning process because it enables educators to obtain an accurate picture of students' readiness, strengths, and learning difficulties. The main advantages of diagnostic assessment can be summarized as follows:

1. Identifying prior knowledge. Teachers are able to evaluate students' competencies more accurately by identifying their prior knowledge before new learning begins.
2. Providing targeted interventions. The results of diagnostic assessment enable educators to modify or improve teaching strategies in line with students' dynamic needs.
3. Practical implementation. Diagnostic assessment is relatively easy to conduct because it is informal and does not affect summative assessment outcomes. In addition, it provides quick feedback and allows flexibility, as teachers can design instruments that suit their classroom context.
4. Facilitating collaboration. Information obtained through diagnostic assessment can be shared among teachers, promoting collective strategies to optimize each student's learning development.

Despite these benefits, diagnostic assessment also has limitations. First, it may lead to inaccurate assumptions about students' mastery, which risks causing teachers to overlook certain topics. Second, the process can be time-consuming and may trigger student anxiety as they worry about results. Third, effective implementation requires adequate teacher training and student orientation to avoid misinterpretation or undue pressure (D. A. Yani dkk., 2023).

Theoretically, diagnostic assessment is grounded in several key principles. Diagnosis is essentially a process of decision-making about students' achievement of learning objectives. The process must be comprehensive and objective, considering multiple factors that may contribute to learning difficulties. Moreover, diagnostic assessment should be closely aligned with remedial programs, since the effectiveness of learning depends on students' mastery of previously studied material

##### Types of Diagnostic Assessment

Diagnostic assessment can be categorized into two main forms: **cognitive** and **non-cognitive**. Cognitive diagnostic assessment aims to identify the level of mastery or achievement of competencies. It is usually carried out through questions or tasks aligned with expected learning outcomes, and the results inform both remedial and enrichment programs. In contrast, non-cognitive diagnostic assessment focuses on students' socio-emotional conditions and psychological readiness to learn. This type of assessment may involve reflective questions about daily activities,



aspirations, or emotions, and the results are used to provide support and, if necessary, involve parents in follow-up actions.

Assessment Type	Purpose	Method	Follow-up
<b>Cognitive</b>	Identify mastery of student competencies	Competency-based questions or tasks	Personalized learning, remedial for low achievers, enrichment for advanced students
<b>Non-cognitive</b>	Understand psychological and socio-emotional readiness	Open-ended questions on daily life, feelings, or aspirations	Discussions, emotional support, parental involvement if needed

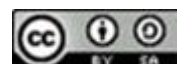
### Implementation Stages of Diagnostic Assessment

In general, the implementation of diagnostic assessment follows several stages (Budiono & Hatip, 2023):

1. Analyzing students' prior academic records.
2. Determining the competencies to be taught.
3. Developing instruments such as written tests, performance assessments, or observations.
4. Gathering additional background information (e.g., family conditions, motivation, interests, learning facilities).
5. Administering the assessment, processing results, and analyzing findings.
6. Using results as the basis for designing appropriate instruction.

These stages can be grouped into three major phases (Ardiansyah et al., 2023):

1. Preparation. Designing the assessment plan, identifying materials, drafting grids, and preparing instruments.
2. Implementation. Conducting assessments either face-to-face or online, depending on students' conditions and needs.
3. Diagnosis and follow-up. Processing results, grouping students by level of mastery, planning interventions, and conducting ongoing reassessments until expected competencies are achieved.





### For non-cognitive assessment,

implementation involves preparation (e.g., visual aids, guiding questions), execution (encouraging students to share feelings and experiences in a supportive manner), and follow-up (identifying students with challenges, providing counseling, and communicating with parents if necessary). This ensures that not only academic but also emotional and social aspects of student learning are addressed comprehensively.



Pertanyaan-pertanyaan Asesmen diagnostic non kognitif

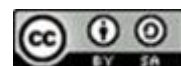
No.	Pertanyaan
1	Identitas siswa
2	Apakah siswa sudah bisa membaca tulisan Arab dengan lancar?
3	Apakah siswa sudah pernah belajar bahasa Arab sebelumnya?
4	Bagaimana pengalaman siswa yang sudah pernah belajar bahasa Arab?
5	Pendapat siswa tentang belajar bahasa Arab (mudah/sulit)
6	Pendapat siswa tentang metode/cara belajar bahasa Arab yang menyenangkan
7	Kesan pertama bertemu guru Bahasa Arab
8	Tujuan yang ingin siswa capai dalam belajar bahasa Arab

## 5. CLOSING

Diagnostic assessment is an important part of the implementation of the Merdeka Curriculum because it serves to identify students' initial abilities, learning needs, and psychological and social conditions. With two approaches, namely cognitive and non-cognitive, this assessment allows teachers to comprehensively understand the diverse characteristics of students. The results of the assessment form the basis for designing appropriate learning strategies, including remedial or enrichment. The implementation of diagnostic assessment helps teachers create a more effective and meaningful learning process. In addition, this assessment supports differentiated learning that focuses on the potential and individual development of students. Thus, diagnostic assessment not only plays a role in measuring student readiness but also serves as an important tool in improving the quality of education holistically.

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