

New Paradigm Madrasah Ibtidaiyah Learning Assessment Science

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Abstrak

Penelitian ini bertujuan untuk mengungkap kelemahan asesmen pembelajaran sains dan mendeskripsikan secara kritis asesmen pembelajaran sains dengan paradigma baru. Penelitian ini menggunakan pendekatan kualitatif dengan metode library research. Data penelitian ini diambil dari buku, modul, penelitian dan pedoman Kurikulum Merdeka. Data dianalisis dengan kritis dan disajikan secara deskriptif. Hasil dari penelitian ini menunjukkan asesmen pembelajaran sains merupakan asesmen yang berorientasi kompetensi abad 21, student center, berbasis perkembangan siswa dan asesmen berdiferensiasi. Berdasarkan analisis peneliti, asesmen pembelajaran sains perlu upaya perencanaan maksimal yang membutuhkan waktu lebih banyak dan dilakukan oleh dua guru untuk kelas rendah dan untuk kelas tinggi sudah bisa diterapkan dengan tetap memperhatikan tingkat perkembangan kompetensi siswa. Pengolahan dan pelaporan asesmen pembelajaran sains SD disajikan dengan informatif dari asesmen formatif dan sumatif yang mencerminkan pencapaian kompetensi berupa deskripsi dan digunakan sebagai tindak lanjut proses pembelajaran bagi guru siswa dan orang tua.

Kata kunci: *Asesmen Pembelajaran, Pembelajaran Sains, Paradigma Baru Pembelajaran*

Abstract

This research aims to reveal the weaknesses of science learning assessment and critically describe science learning assessment with a new paradigm. This research uses a qualitative approach with the library research method. This research data was taken from books, modules, research and Independent Curriculum guidelines. Data were analyzed critically and presented descriptively. The results of this research show that science learning assessment is an assessment that is oriented towards 21st century competencies, student centered, based on student development and differentiated assessment. Based on the researcher's analysis, science learning assessment requires maximum planning effort which requires more time and is carried out by two teachers for low classes and for high classes it can be implemented while still paying attention to the level of student competency development. The processing and reporting of elementary school science learning assessments is presented informatively from formative and summative assessments which reflect competency achievement in the form of descriptions and are used as a follow-up to the learning process for student teachers and parents.

Keywords : *Learning Assessment, Science Learning, New Learning Paradigm*

INTRODUCTION

Assessment and learning activities are two processes that cannot be separated from the activities of teachers and students in the classroom. If learning is expected to be quality, then assessment must be quality. On the other hand, if the assessment is quality then the assessment must be carried out in a quality manner. Teachers are required to carry out quality learning and assessment in a parallel manner (Pantiwati & Nyono, 2020).

The aim of science learning is to develop individuals who understand scientific concepts and principles, laws and scientific theories, as well as inquiry skills. Having fundamental knowledge about science is essential to forming humans who have the ability to use fundamental

aspects of science in solving problems in everyday life, and in making decisions for the public and personal interests. The essence of science is its use as a tool for discovering knowledge through observation, experimentation and problem solving (Weintrop et al, 2016).

The new paradigm assessment is the final learning process in the Independent Curriculum. The Merdeka Curriculum, previously known as the Prototype curriculum, was developed as a curriculum framework that is more flexible and focuses on essential material as well as developing student character and competence, which has the following characteristics: Project-based learning for the development of soft skills and character according to the Pancasila student profile (Jusuf, & Sobari, 2022). Focusing learning on essential material will make learning more in-depth for basic competencies such as literacy and numeracy, and teachers have the flexibility to carry out differentiated learning according to students' abilities and make adjustments to local context and content.

The independent curriculum is present as an answer to global human resource competition in the 21st century. The curriculum in Putriani and Hudaidah's research (2021) mentions three main competencies in the 21st century, namely thinking, acting and living in the world. Thinking includes critical, creative, and problem solving. Acting includes communication, collaboration, digital literacy, and technological literacy (Wahyudiono, 2023). Living in the world includes initiative, self-direction, global understanding, and social responsibility. This competency is important in this era which requires innovation and rapid adaptation. The Indonesian government provides facilities and infrastructure to face the Society 5.0 era. Curriculum development is important to shape student character in this era.

To lead to the basic abilities of the 21st century above, the state continues to adapt the education curriculum with various changes. Changes in the curriculum are due to changing times which continue to develop rapidly, so that the challenges faced in the global world are also increasingly complex. So today the government is trying to change the 2013 Curriculum into an Independent Curriculum, so that through this curriculum it is hoped that students can be equipped with various characteristics and abilities that are in line with the demands of the times and increasingly sophisticated and modern technology (Aprianti & Maulia, 2023). However, the curriculum is a set of programs that contain various subjects in the world of education which are used as the main guideline in implementing the shared educational goals. At this point, curriculum achievements can be seen from the results of assessments that have been carried out as a form of evaluation and achievement of these expectations.

The curriculum must produce a generation that understands the material quickly, not just memorizes it. Students need to utilize technology in learning. Traditional approaches are being replaced by digital products such as e-books. Technology plays an important role in education, such as electronic media and Blended Learning (Batubara et al, 2022). Technological advances allow students to study anywhere with an internet connection. Society is shifting to an online society with digitalization and the internet (Rahayu & Kejora, 2022).

The use of ICT in Indonesia is growing rapidly. Internet, cell phone and computer use is increasing (Badan Pusat Statistik, 2020). The Merdeka Belajar curriculum adapts to societal developments. The Indonesian Ministry of Education and Culture, Research and Technology is improving the quality of education to face the Society 5.0 era (Puspitarini, 2022). Teachers must be innovative in teaching by utilizing technology and 21st century learning models (Indarta & Elan, 2021). In the new paradigm learning process, assessment with the new paradigm is

mandatory. Therefore, researchers conducted this literature study to analyze learning assessments and assessments with a new paradigm to see the process of assessment development in responding to changes in the development of student characteristics following developments in science and technology.

It is necessary to understand that the term assessment is different from assessment. Assessment is an effort to obtain data from the beginning of the process to the learning outcomes in order to find out how far the students are towards the goals they have collectively hoped for. Meanwhile, assessment is the process of attaching attributes in the form of numbers/letters to an assessment by comparing them against an instrument with certain standards. The results of the assessments and evaluations above need to be evaluated to improve future learning (Novita & Herizal, 2021).

Based on these differences, there are still many problems in implementing educational assessments in Madrasah Ibtidaiyah (MI) especially in implementing the Independent Learning Curriculum. Various observations and research results, there are at least several things that are problems with educational assessment, including: Teachers do not have sufficient experience and knowledge regarding implementing the Independent Learning concept, there are limited references and referents as role models so that teachers still apply traditional assessment, teachers still teach classically which tends to be monotonous, and teachers still experience problems with diagnostic, formative and summative assessment formats, so what happens is that they still fill them in manually (Heryahya et al, 2022).

Therefore, here researchers will examine in more detail how science learning assessment in elementary schools can be understood from the perspective of a new paradigm. This research aims to identify and explore a New Paradigm in Learning Assessment Science at Ibtidaiyah Madrasas: Understanding new concepts and approaches used in learning assessment at Ibtidaiyah madrasas, as well as identifying differences with traditional assessment methods.

RESEARCH METHODS

This research uses a qualitative approach with a literature review type of study. The data sources used in this research are information taken from books, articles, research reports and other relevant documents. Data was collected from scientific articles, books, modules that discuss science learning assessment to be examined critically, namely learning assessment and new paradigms.

The presentation of this research data is in the form of an interpretation of the combination and combination of study results from the data sources mentioned. The data is analyzed and explained descriptively, so that the combination of several studies can be explained comprehensively to meet the objectives of this research.

DISCUSSION

Problems of Science Learning Assessment

Before discussing learning assessment from a new paradigm perspective, here the researcher tries to examine the dynamics and problems of science learning assessment that have occurred so far. From the results of research and observations of researchers, there are many challenges in implementing assessment in education, especially in science learning in MI, including:

First, teachers lack competent expertise in the field of science. Many teachers in basic education institutions still have limited knowledge. Class teachers, for example, even though their scientific specifications are different from those of science, they must be 'forced' to teach science, so what happens is that the quality of learning assessment is still considered less than optimal (Afriani, 2019).

Second, teachers do not have sufficient time to apply science theories and practices that have been recommended by the national curriculum. This has several important factors, one of which is that the application of scientific theory and practice requires sufficient time, especially if the theory conveyed requires practice in certain places where there is sufficient time and money. This means that theory and practice need a long time, so the assessment needs to be carried out with additional time. This is coupled with the existence of a (teacher) certification program which requires teachers to teach 24 hours in the classroom, so they do not have maximum time to prepare lesson plans and evaluations (Sari, 2012).

Third, teachers have not been able to demonstrate the science assessment process in learning carried out in class. The theory presented sometimes does not match the practical reality, so that students in carrying out assessments tend to force filling in, that is, it does not match what each student's abilities are. In the end, teachers or students only carry out assessments as a formality, not as part of authentic assessment (Al Idrus, 2022).

Fourth, the classic problem faced in the science assessment process in basic education institutions is that the media and science laboratories are still inadequate to serve as practical sources and references. In fact, some schools don't have science laboratories because they tend to be expensive. Even if there is, the management process is not optimal, so it is not carried out as expected (Musfah, 2018). Therefore, the assessment that should have been taken from the laboratory study process was not carried out and was even left blank.

Fifth, science assessments that are still commonly carried out by teachers only focus on assessing learning outcomes, without looking at how assessments are carried out in the context of assessing the process during learning carried out by students. Teachers still have weaknesses in providing assessments in three aspects (cognitive, affective and spicomotor) to students. Of course, this has many factors, one of which is that teachers do not have enough time to assess each learning process by analyzing the three aspects above (Nurjanah, 2021).

Sixth, there are diverse student backgrounds. So what happens is that one student and another student do not have unity in active and innovative learning. For example, there are students or schools in rural areas who have difficulty getting adequate access to education, so it will be difficult to implement optimal learning assessments. Not only that, the background of these students also has an impact on their individual understanding of scientific theory and practice. If many students are not optimal in understanding science material, then the assessments carried out will certainly have an impact on the quality and authenticity of the results obtained (Siswati & Corebima, 2021).

Seventh, the curriculum used as a reference for teachers/schools is still limited to a theoretical level. If this has not been corrected, science learning in elementary schools will have a significant negative impact (Al-Kansa et al, 2022). The curriculum should be more focused on the level of daily applicability. Because one of the qualities of education is understanding how the

comprehensive curriculum in a country can be implemented well and can be developed optimally in each educational unit with various regional backgrounds.

New Paradigm Learning Assessment

a. New Paradigm Learning Assessment Principles

The principles of new paradigm science learning assessment can be understood in several ways, including: 1) Assessment is an integrated part of the learning process, facilitates learning, and provides holistic information as feedback for educators, students and parents so that it can guide them in determining next learning strategy. 2) Assessments are designed and carried out in accordance with the assessment function, with the freedom to determine the technique and time for carrying out the assessment to effectively achieve learning objectives. 3) Assessments are designed to be fair, proportional, valid and reliable to explain learning progress and determine decisions about next steps. 4) Reports on learning progress and student achievements are simple and informative, providing useful information about the character and competencies achieved as well as follow-up strategies. 5) The results of the assessment are used by students, educators, education staff and parents as reflection material to improve the quality of learning (Sufyadi et al, 2021).

Table.1. Assessment Principles 1

| New Paradigm | What Needs to Be Left Behind |
|--|--|
| Assessment refers to competencies which include the domains of attitudes, knowledge and skills | Assessments in the domains of attitudes, knowledge and skills are carried out separately |
| Assessment is carried out integrated with learning | Assessment is carried out separately from learning |
| Involving students in conducting assessments, through self- <i>assessment</i> , peer assessment, self-reflection, and providing peer <i>feedback</i> . | Assessments are only carried out by educators |
| Providing feedback is done by describing the best efforts to stimulate a growth mindset and motivate students. | Feedback is in the form of short sentences of praise, for example good, cool, smart, smart, intelligent, and so on. Giving criticism without explanation for improvement |

In the table above, it can be seen that the new paradigm for assessing science learning is similar to that which has been carried out in classroom learning. However, in this case there are several things that need to be considered if the science learning assessment is carried out in three domains at once, namely the difficulty of teachers in assessing directly in learning if the class they are facing is still a low class that cannot follow the learning procedures and steps well, because the students in the lower classes need intensive guidance from the teacher. This assessment, which is carried out integrated with learning, allows it to be carried out simultaneously during learning, but it is necessary to pay attention to time in completing the assessment. Involving students in this assessment is very possible because this will encourage students to practice

improving their cognitive abilities. Because assessing is level C5 in science learning. Then, based on the principle of providing literacy-based feedback by describing the best efforts and providing motivation to students, it will provide different feedback and will encourage students to learn while also training students in communication literacy.

Table.2. Assessment Principle 2

| New Paradigm | What Needs to Be Left Behind |
|--|--|
| Build commitment and prepare assessment plans that focus on formative assessments | Focuses on summative assessment |
| Using various types, techniques and instruments of formative and summative assessment according to subject characteristics, learning outcomes, learning objectives and student needs | Not using assessment instruments or using assessment instruments, but not in line with subject characteristics, learning outcomes, learning objectives and student needs |
| The assessment is carried out with a planned time allocation | The assessment was carried out suddenly |
| Communicate to students about the types, techniques and assessment instruments that will be used. The hope is that students will try to achieve the best criteria according to their abilities | The types, techniques and assessment instruments are only understood by educators so that students do not have an idea of the best criteria that can be achieved. |

Table.3. Assessment Principle 3

| New Paradigm | Old Paradigm |
|---|---|
| Assessments are carried out in accordance with the principles of fairness without being influenced by students' backgrounds | Assessment is more beneficial for students because of certain backgrounds |
| Implementing assessment moderation, namely coordinating between educators to equalize perceptions of criteria so that the principle of fairness is achieved | There is an element of subjectivity in the assessment |
| Using assessment instruments that are able to measure competency achievements accurately | Using assessment instruments that are not in accordance with learning objectives and activities |

Table.4. Assessment Principle 4

| New Paradigm | What Needs to Be Left Behind |
|---|---|
| Clear and easy to understand by all parties | Complex and overly scientific language, use of negative words or sentences |
| Competency achievement is expressed in the form of numbers and descriptions | Learning progress reports are not based on evidence and recording of learning progress or are based only on insufficient evidence |
| Learning progress reports should be based on evidence and recording of student learning progress | Learning progress reports are not based on evidence and recording of learning progress or are based only on insufficient evidence |
| Learning progress reports are used as a basis for implementing follow-up strategies for developing student competencies | Learning progress reports are only used as a collection of data or documents without any follow-up |

Table.5. Assessment Principle 5

| New Paradigm | What Needs to Be Left Behind |
|--|--|
| Education units have strategies so that assessment results are used as reflection by students, educators, education staff and parents to improve the quality of learning | The results of the assessment are only used as data and are not followed up to improve the quality of learning |
| | The results of the assessment are used as comparisons between students |

b. Types and Functions of Science Learning Assessment

The types of science learning assessments in elementary school are formative and summative. The formative assessment is *as and for learning*.

Table.6 Types and Functions of Science Learning Assessment

| Type | Function | Technique | Documentation Results | as, for, of |
|-------------|---|--|--|----------------------------|
| Formative | a. Diagnosing students' initial abilities and learning needs b. Feedback for educators to improve the learning process to make it better | Various assessment techniques (practice, product, project, | a. Learning outcomes products. b. Student reflection journal. | <i>as and for learning</i> |

| | | | | |
|--|--|--|--|----------------------------|
| | <ul style="list-style-type: none"> c. Feedback for students to improve learning strategies d. Diagnosing students' absorption of material in classroom learning activities. e. Stimulate changes in the classroom atmosphere so that it can increase students' learning motivation with positive, supportive and meaningful learning programs | portfolio, written/or al tests) | <ul style="list-style-type: none"> c. Follow-up plan for assessment results d. Notes on observation results e. Anecdotal notes f. Values are numbers | |
| Summative at the end of the material scope | <ul style="list-style-type: none"> a. Measuring tool to determine the achievement of student learning outcomes in one scope of material. b. Reflection of learning in one scope of material. c. Feedback to design/improve the next learning process. d. Seeing students' learning strengths and weaknesses during learning in one area of material. | Various assessment techniques (practice, product, project, portfolio, written test, oral test) | <ul style="list-style-type: none"> a. Learning outcomes products. b. Values are numbers | <i>for and of learning</i> |
| Summative at the end of the semester | <ul style="list-style-type: none"> a. A measuring tool to determine the achievement of student learning outcomes in a certain period. b. Obtain learning achievement scores to compare with predetermined achievement criteria. c. feedback to design/improve the learning process for the next semester/school year (same as formative assessment function) d. see learning strengths and weaknesses in students (the same as the function in diagnostic assessments) | Practices, products, projects, portfolios, written | <ul style="list-style-type: none"> a. Learning outcomes products b. Values are numbers | <i>of learning</i> |

CONCLUSION

The new paradigm in learning assessment at Madrasah Ibtidaiyah emphasizes a more holistic and student-centered approach. Assessments are not only focused on academic results

but also on the development of social, emotional and moral skills. This approach includes ongoing formative assessment methods and providing constructive feedback to students. Traditional assessment methods tend to focus on written tests and final exams that measure students' cognitive abilities in the short term. In contrast, the new paradigm combines multiple forms of assessment, such as portfolios, projects, and classroom observations, which provide a more complete picture of a student's overall development. Traditional assessments also pay less attention to non-academic aspects such as communication and collaboration skills, which are now considered important in the new paradigm.

This new approach allows teachers to better understand each student's individual needs and potential, and helps students to become more independent and reflective learners. Continuous assessment provides opportunities for students to improve themselves and develop their critical and creative abilities.

To optimize the implementation of the new paradigm in learning assessment at Madrasah Ibtidaiyah, strong support is needed from the school, continuous training for teachers, and active involvement from parents and the school community. Further research is also recommended to evaluate the long-term impact of this new paradigm on student development.

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