

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

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Abstract:

The Teaching at the Right Level (TaRL) approach offers a solution through assessments that adapt learning based on student ability levels. This study aims to examine the implementation of TaRL-based assessments, identify obstacles encountered, and outline solutions used to overcome them. This study used a descriptive qualitative method with a deductive thematic analysis approach. The results showed that the TaRL assessment was implemented through two stages: diagnostic assessment (cognitive and non-cognitive) and formative assessment with differentiated worksheets (LKPD). Solutions implemented included group rotation, development of LKPD with varying difficulty levels, simple and contextual diagnostic assessments, and collaboration between teachers. This study concluded that the TaRL approach can be implemented effectively with the support of adaptive and collaborative strategies. The implication is that teachers need to have skills in designing assessments that are appropriate to students' abilities and strengthen collaboration within the teaching team so that this approach can run sustainably.

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Introduction

Science learning in Indonesia has a crucial and strategic role in shaping students' scientific mindsets and developing 21st-century skills. The implementation of science learning faces challenges, particularly related to the effectiveness of the learning process, which is responsive to the diverse needs of students. Problems in science learning include low learning outcomes and low student engagement, as well as the perceived difficulty and lack of relevance to everyday life (Jufrida et al., 2020)

The Teaching at the Right Level (TaRL) approach is a relevant approach to implement. This approach facilitates student diversity. The TaRL approach was introduced by Pratham within an educational non-governmental organization (NGO) in India (Angrist & Meager, 2022). Learning using the TaRL approach, students are grouped not based on class level or prepared syllabus, but learning is adjusted to students' abilities (Erwiana & Istiqomah, 2025; Rostikawati et al., 2025). Through this approach, teachers first identify students' initial ability levels and then design appropriate learning activities.

TaRL learning has many benefits. Level-appropriate learning will make learning more focused and have a positive impact on learning. The TaRL approach can improve critical reasoning skills (Diniyarti & Agustika, 2023; Supratman et al., 2025), improve reading skills (Muammar et al., 2023), improve students' analytical skills and interest in learning (Nabellah et al., 2023). This directed learning is very suitable for intervening in education (Angrist et al., 2020; Angrist & Meager, 2022). The benefits of learning with the TaRL approach can be identified by conducting appropriate assessments.

There are several types of assessments that can be used in learning. Based on the current Independent Curriculum, there are three types of assessments: diagnostic, formative, and summative (Fatmawati et al., 2023; Nur Budiono & Hatip, 2023). Each type of assessment has an important role in helping teachers plan and implement effective learning and support optimal student development.

Diagnostic assessment is a type of assessment conducted at the beginning of learning to identify students' prior knowledge and skills. Diagnostic assessments identify students' strengths and weaknesses as a basis for planning learning tailored to their specific needs (Badrin Kholid et al., 2024; Iskak et al., 2023; Kizi & Shadjalilovna, 2022; Sujinah et al., 2024).

Formative assessment is a type of assessment conducted during the learning process to monitor student progress and provide feedback that can be used to improve learning. Formative assessment has a crucial role in assisting teachers in monitoring student learning progress. Formative assessment can be used to continuously adjust learning strategies (Efendi et al., 2024; Felea, 2025).

Summative assessment is a type of assessment conducted at the end of a learning period to assess the extent to which students have achieved the established learning objectives. This assessment is usually formal and carries a greater weight in determining students' final grades. Examples of summative assessments include end-of-semester exams, end-of-course tests, or large projects that cover the entirety of the material taught. Summative assessment is an assessment activity that provides a summary of what students know, understand, and can do, aimed at making decisions

in the classroom, such as evaluating class achievement in the curriculum, overall individual assessments, and achieving established standards (Ganajová et al., 2021; Ismail et al., 2022; Nasrullah Channa et al., 2025).

Previous research that has been conducted has studied more aspects of teaching (Diniyarti & Agustika, 2023; Hidayat et al., 2024; Muammar et al., 2023). There are articles that have reviewed diagnostic assessments and their follow-up (Forniawan & Wati, 2024). However, no comprehensive discussion of the implementation of assessment in TaRL-based learning has been found. This study focuses on three things: the implementation of TaRL-based assessment in science learning, the obstacles encountered during the implementation of TaRL-based assessment, and the solutions taken to overcome the obstacles experienced in implementing TaRL-based assessment.

Research Method

Descriptive qualitative research focuses on discovering the who, what, and where of informants' experiences (Doyle et al., 2020). The descriptive qualitative approach chosen in this research design aims to obtain an in-depth and systematic explanation regarding the implementation of Teaching at the Right Level (TaRL)-based assessment in science learning based on the qualitative data obtained. The objective of the qualitative research is the research design chosen (Creswell, 2014). A descriptive qualitative design was chosen to contextually explore the phenomenon of providing assessments in classroom learning based on observation results, documentation results, and informants' perspectives.

This research was conducted in school in Bantul Regency. The informants were willing to provide information and opinions in this study. Two informants were prospective teachers who had developed appropriate TaRL-based learning planning tools in professional science education. They were supported by other informants: one classroom teacher and six students representing different skill levels. These informants served as a tool for validating the data sources.

The research data sources used to test the validity of the data include open-ended questionnaires, observations, and documentation. Different data sources will build a coherent justification for the research themes (Creswell, 2014). Data validity testing using triangulation techniques was used to strengthen the validation of the findings through cross-confirmation from various data sources. The questionnaire was developed in an open-ended format, allowing informants to provide descriptive explanations of their experiences. Observations were conducted to assess the implementation of the learning strategies being implemented, while documentation techniques were used to analyze the assessment sheets. The instruments developed included a questionnaire, an observation sheet, and a documentation analysis checklist.

The data was analyzed using thematic analysis techniques. This technique is a method for identifying, analyzing, and reporting data patterns (Braun & Clarke, 2006). Thematic analysis is used to find themes that are relevant to the research questions and research design chosen (Humble & Mozelius, 2022). In thematic analysis, rich and complex data interpretations are presented with various themes (Lochmiller, 2021; Morgan & Nica, 2020). The thematic analysis technique used is deductive thematic

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

analysis, which utilizes a theoretical framework prepared by the researcher. Although deductive thematic analysis does not fully describe the data, it allows researchers to conduct a more detailed examination of each aspect of the data being studied.

The thematic analysis process consists of six stages, namely: familiarizing with data, generating initial codes, searching for themes, reviewing themes, defining & naming themes, and producing the report (Braun & Clarke, 2006). The coding and data analysis used in this study uses software Atlas.ti. Atlas.ti helps researchers manage a variety of data (Soratto et al., 2020). Data is displayed in the form of a network, which is a depiction of concepts, data, and codes (Mastrobattista et al., 2024; Ronzani et al., 2020).

Familiarizing with Data; In this first stage, researchers reread the data obtained at least once before coding. Furthermore, they observed patterns formed during the rereading, such as similarities in informant responses.

Generating Initial Codes; In the second stage, researchers scrutinize each piece of information obtained and then code it. Researchers translate the information obtained from informants into codes and repeat this process. Coding is based on a single question while observing the informants' answers. Once a question has been completed and coded, researchers can move on to the next question. This process is repeated until all information from each question has been coded.

Searching for Themes; This third stage is carried out by researchers who have already developed a list of codes from the second stage. Researchers focus the analysis at a broader level by organizing the various codes into potential themes (Braun & Clarke, 2006). At this stage, the researcher combines the codes into the same theme.

Reviewing Themes; In this fourth stage, the researcher conducted an analysis process based on its level. At the first level, the researcher reread all the codes compiled for each theme. If the researcher found a problematic section, the researcher reconsidered whether the code should remain in or be removed from the theme. At the second level, the researcher considered the validity of each theme related to the data collection obtained. At this level, the researcher examined whether the thematic map created reflected the meaning evident from the data as a whole. At this stage, the researcher reviewed the themes and codes in Atlas.ti to see if they matched the researcher's expectations. The researcher could add new codes to existing themes if any were missing.

Defining & Naming Themes; In this fifth stage, the researcher reviews the codes for each theme to determine whether they align with the objectives and can draw conclusions from each theme. The researcher rechecks whether each theme addresses the research question.

Producing the Report; In this sixth stage, the researcher re-explains the process of coding and analyzing the data. The researcher answers the research questions and relates them to the findings obtained by the researcher. At this stage, the researcher also links the research conducted to various previous research references to determine whether they align or contrast. Table 1 below presents the stages and process descriptions of this research using thematic analysis.

Table 1. Description of the Thematic Analysis Process

Fase Analisis Tematik	Deskripsi proses
-----------------------	------------------

<i>Familiarizing with Data</i>	Researchers entered data obtained from open questionnaires and observations into the Atlas.ti software.
<i>Generating Initial Codes</i>	Researchers coded the data obtained based on questions given to informants.
<i>Searching for Themes</i>	Researchers combine related codes into themes.
<i>Reviewing Themes</i>	(1) The researcher reviews the codes and themes in Atlas.ti to match the researcher's expectations. (2) If anything is missing, the researcher adds a new code to the available themes.
<i>Defining & Naming Themes</i>	Researchers re-confirm that the coding themes are in accordance with the research questions.
<i>Producing the Report</i>	(1) Researchers answer the results of the questions and connect them with the findings obtained. (2) Researchers connect them with references from previous research.

Thematic analysis is a flexible analysis, can overlap and interact with each other so that the stages are not linear ([Labra et al., 2020](#)) as shown in Chart 1.

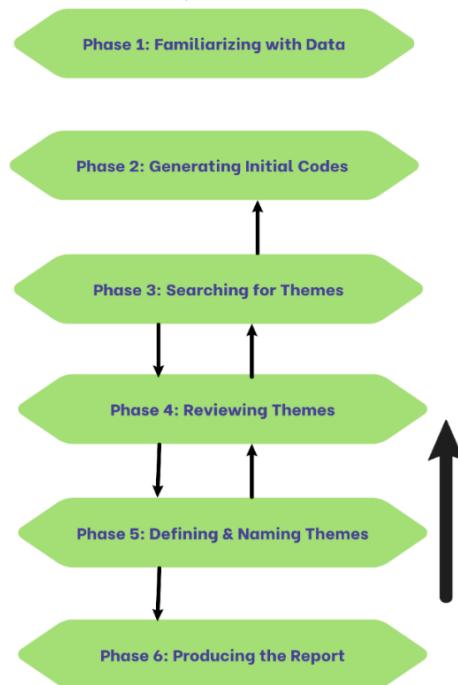


Chart 1. Six Stages of Interaction in Thematic Analysis

Results and Discussion

This research focuses on three parts, namely the implementation of assessment based on the TaRL approach, obstacles encountered when implementing assessment based on the TaRL approach, and solutions used to overcome obstacles encountered when implementing assessment based on the TaRL approach. The implementation of

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

assessment based on the TaRL approach is divided into implementation in diagnostic assessment, implementation in formative assessment, and implementation in summative assessment. Based on the results of the analysis assisted by ATLAS.ti 9 software, the coding results of the predetermined themes related to the implementation of diagnostic assessment using the TaRL approach are obtained as in Chart 2 below.

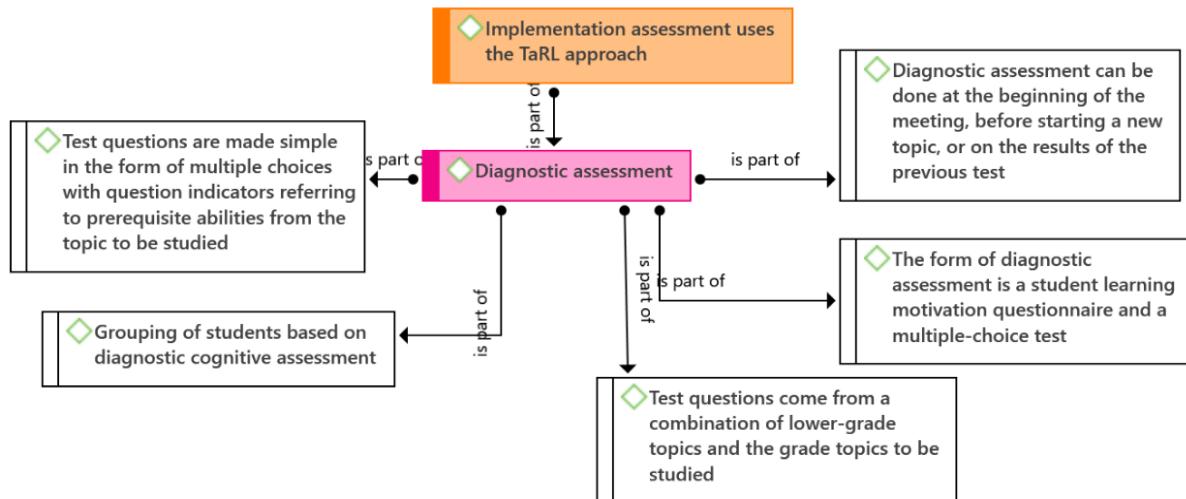


Chart 2. Implementation of Diagnostic Assessment using the TaRL Approach

The implementation of formative assessment using the TaRL approach is described in Chart 3.

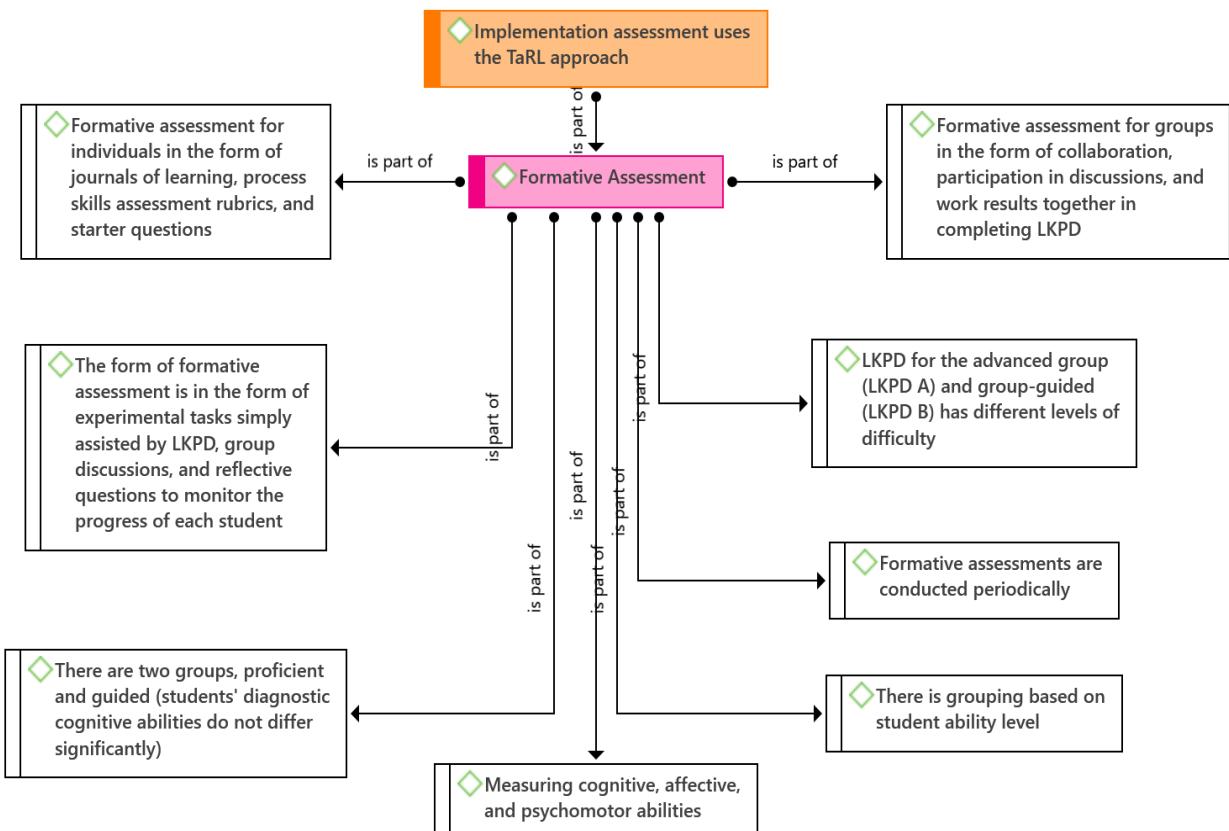


Chart 3. Implementation of Formative Assessment Using the TaRL Approach

The implementation of summative assessment is described in Chart 4.

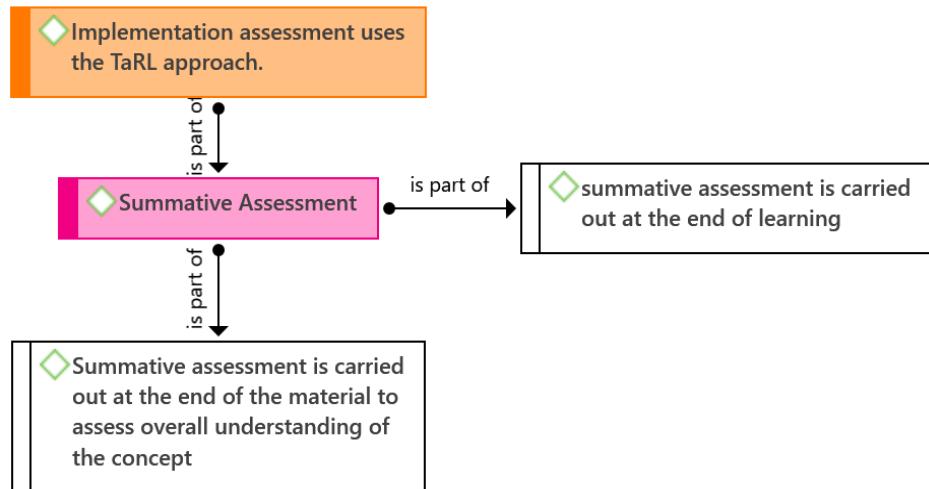


Chart 4. Implementation of Summative Assessment

The challenges and solutions encountered during the implementation of assessment using the TaRL approach are presented in Chart 5.

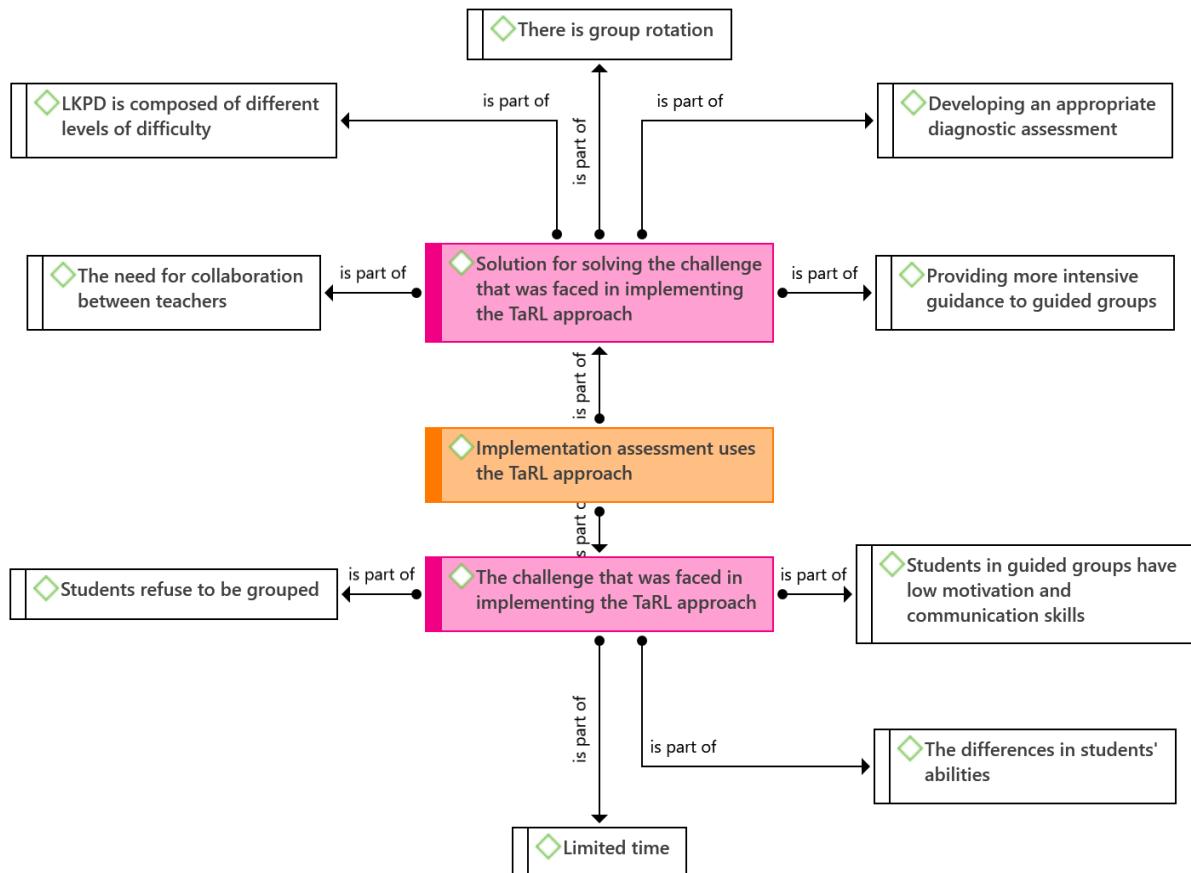


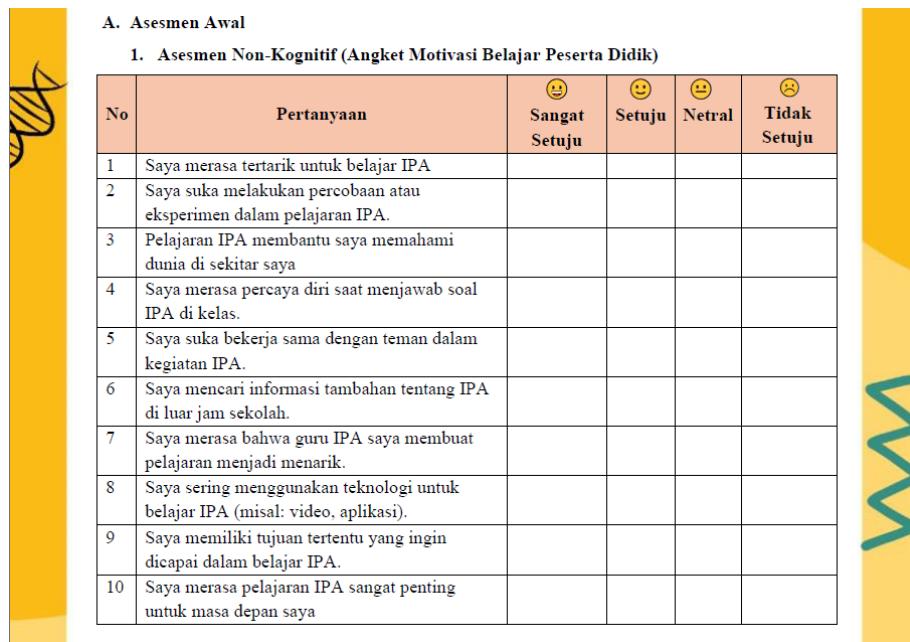
Chart 5. The Challenges and Solutions for Solving the Implementation of Assessment Using the TaRL Approach

A. Implementation of TaRL-based Assessment Approach

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

One component of developing learning planning tools is learning assessment. Assessment in an educational context is a systematic process used to collect, evaluate, and interpret information regarding student learning progress or achievement (Munaroh, 2024). TaRL diagnoses assessments by measuring students' actual abilities, not based on age and grade level. These diagnostic results serve as the primary foundation for interventions for subsequent learning. The underlying assumption is that students have varying initial abilities.

Informants developed three types of assessment: diagnostic, formative, and summative. The informants developed a diagnostic assessment using non-test techniques in the form of a student learning motivation questionnaire (Figure 1) and multiple-choice test techniques. The diagnostic assessment was used to determine student characteristics and map learning needs. There were several statements in the learning motivation questionnaire related to interest in learning science and the strategies chosen when learning science. The questionnaire used a Likert scale (1-4) with the statements "Tidak setuju-Sangat Setuju".



No	Pertanyaan		Sangat Setuju		Setuju		Netral		Tidak Setuju
1	Saya merasa tertarik untuk belajar IPA								
2	Saya suka melakukan percobaan atau eksperimen dalam pelajaran IPA.								
3	Pelajaran IPA membantu saya memahami dunia di sekitar saya								
4	Saya merasa percaya diri saat menjawab soal IPA di kelas.								
5	Saya suka bekerja sama dengan teman dalam kegiatan IPA.								
6	Saya mencari informasi tambahan tentang IPA di luar jam sekolah.								
7	Saya merasa bahwa guru IPA saya membuat pelajaran menjadi menarik.								
8	Saya sering menggunakan teknologi untuk belajar IPA (misal: video, aplikasi).								
9	Saya memiliki tujuan tertentu yang ingin dicapai dalam belajar IPA.								
10	Saya merasa pelajaran IPA sangat penting untuk masa depan saya								

Figure 1. Non-Cognitive Diagnostic Assessment

The results of the questionnaire will provide teachers with input regarding the learning strategies students want to implement in science learning. The results of this questionnaire revealed that students feel science lessons are very important for their future and want science learning to be fun, students can conduct simple experiments, and there is a role for technology in learning.

Another form of diagnostic assessment that can be used is cognitive assessment. The cognitive diagnostic assessment developed by the informant is a multiple-choice test. It contains questions related to the prerequisite material for the topic to be studied. Students must possess prerequisite skills before learning new material. Information regarding these prerequisite skills is crucial for preparing for higher-level learning.

Cognitive diagnostic assessments are composed of a combination of questions from related topics from lower-level classes and the class topic to be studied. The material in cognitive diagnostic assessments is kept simple yet can reveal students' factual abilities. Cognitive diagnostic assessments can be administered prior to instruction in the introductory stage, before starting a new topic, or using assessment data from previous materials. The results of previous assessments used naturally come from material related to the new topic to be studied.

The main purpose of diagnostic assessment is to determine the extent to which students have mastered the material to be studied and to identify their learning needs. By conducting diagnostic assessments, teachers can design more effective learning that is tailored to students' levels of understanding. Diagnostic assessments are conducted before the start of learning (Bakhruddin et al., 2023). Diagnostic assessments provide a snapshot of students' understanding before starting the lesson, allowing teachers to adjust instruction and focus on areas where students are still weak or not yet fully understood (Delgado et al., 2019). This helps increase student engagement and ensures that the material taught is relevant to their needs.

Cognitive diagnostic assessments were used as the basis for grouping students during the learning process (Figure 2). However, before grouping, informants summarized and analyzed the results of the diagnostic assessments. This process was quick because informants used the Quizizz tool, which provides results immediately after students complete the assessment.

Kesiapan Belajar	Peserta Didik Mahir	Peserta Didik Terbimbing
Peserta Didik	<ul style="list-style-type: none">- Peserta didik pada Tingkat ini sudah menguasai materi dengan baik.- Kriteria peserta didik mahir memiliki nilai ASTS ≥ 65	<ul style="list-style-type: none">- Peserta didik pada tingkat ini memerlukan bimbingan yang lebih intensif. Peserta didik telah memahami Sebagian materi atau memiliki kesulitan untuk memahami konsep tertentu.- Kriteria peserta didik terbimbing memiliki nilai <65.
Kelompok 1 dan 2		Kelompok 3,4,5, dan 6

Figure 2. Student Grouping Based on Cognitive Assessment

During the learning process, there is grouping based on ability level. Informants divide the student group into two groups: the advanced group and the guided group. The consideration for dividing into two groups is because, based on the results of the analysis of students' cognitive diagnostic abilities, they did not differ significantly, so students who fall into the category of moderate diagnostic cognitive abilities (<65) are included in the guided group, while students with higher diagnostic cognitive abilities (≥65) are categorized as the advanced group. After the diagnostic assessment is carried out, the teacher will then carry out a formative assessment.

Formative assessments are conducted throughout the learning process. Formative assessments not only measure cognitive skills but also affective and psychomotor skills. The formative assessments are developed by teachers in the form

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

of Student Worksheets (LKPD). LKPDs serve as formative assessment instruments used to monitor students' progress and understanding of science material and provide useful feedback to students. The LKPDs include simple experimental activities related to determining the amount of heat required to raise an object's temperature. In addition to simple practicums, the LKPDs also include group discussions, presentations, and reflections. All activities students undertake in the LKPDs will serve as a tool to monitor the development of their abilities.

The informant developed a formative assessment using the TaRL approach by compiling two types of Student Worksheets (LKPD). The teacher conducted the lesson on "kalor dan Pemuaian" in three meetings. Each meeting provided two types of LKPD. The two types of LKPD developed were LKPD A, designed for the advanced group, and LKPD B for the guided group. At several learning stages, the two types of LKPD developed differed in difficulty.

In the first learning session on the subtopic of heat and life, students conducted a simple experiment. During the recording stage of the practical observations, students in the advanced group used Student Worksheet 1A. Student Worksheet 1A did not provide formula assistance (Figure 3), unlike Student Worksheet 1B, which had formula assistance used by the guided group (Figure 4).

The image shows a worksheet titled 'C. Tabel Hasil Pengamatan' (C. Result Observation Table) with a table for recording experimental data. The table has seven rows with columns for Massa gelas kimia, Massa gelas kimia + air, Massa air (m), Suhu awal air, Suhu akhir air, Perubahan suhu air (ΔT), and Kalor jenis air (c). Below the table is a section titled '4. Data Processing (Pengolahan Data)' containing a formula box for calculating heat (Rumus Kalor) and a text box for calculating the amount of heat required based on the formula. There are decorative elements like a DNA helix and a hand icon on the sides.

C. Tabel Hasil Pengamatan	
Massa gelas kimia	:
Massa gelas kimia + air	:
Massa air (m)	:
Suhu awal air	:
Suhu akhir air	:
Perubahan suhu air (ΔT)	:
Kalor jenis air (c)	:

4. Data Processing (Pengolahan Data)

Rumus Kalor

$$\text{.....} = \text{.....} \times \text{.....} \times \text{.....}$$

Dari rumus yang sudah ada, lakukan perhitungan mencari jumlah kalor yang dibutuhkan berdasarkan data praktikum kalian!

Jawab:

Figure 3. LKPD 1A for Advanced Group

C. Tabel Hasil Pengamatan

Massa gelas kimia	:
Massa gelas kimia + air	:
Massa air (m)	: (massa gelas kimia+air) – (massa gelas kimia) (.....) – (.....) (.....)
Suhu awal air	:
Suhu akhir air	:
Perubahan suhu air (ΔT)	: (suhu akhir air) – (suhu awal air) (.....) – (.....) (.....)
Kalor jenis air (c)	:

4. Data Processing (Pengolahan Data)

Rumus Kalor: $Q = m \times c \times \Delta T$

Dari rumus yang sudah ada, lakukan perhitungan mencari jumlah kalor yang dibutuhkan berdasarkan data praktikum kalian!

Jawab:

$$Q = m \times c \times \Delta T$$

$$= (.....) \times (.....) \times (.....)$$

Figure 4. LKPD 1B for Guided Groups

In the second learning session, entitled "Heat Detective," students completed a case involving heat transfer. During the data collection activity, students completed Student Worksheet 2A, which differed in difficulty from Student Worksheet 2B, which was completed by the guided group. The difference in difficulty is shown in Figure 5 (Student Worksheet 2A for the advanced group) and Figure 5 (Student Worksheet 2B for the guided group).

Data Collection (Pengumpulan Data)

Temukan istilah penting dari konsep perpindahan kalor pada tabel di bawah ini! Kata kunci ada di halaman awal LKPD.

I	O	D	I	N	K	L	N	K	A
A	R	I	S	O	L	A	T	O	R
S	B	A	N	T	U	L	O	N	I
E	S	O	I	R	O	E	A	D	N
I	K	I	N	S	L	K	L	U	N
R	O	T	K	U	D	N	O	K	N
S	D	K	R	A	D	I	A	S	I
O	K	O	N	V	E	K	S	I	R
A	I	S	O	L	A	S	I	N	R
I	L	R	A	K	A	L	O	R	A

Kata yang ditemukan:

Figure 5. LKPD 2A for Advanced Group

LKPD 2A was given to the advanced group (Figure 4). Students were asked to find the concept of heat transfer without the help of keywords from the data being searched for, while LKPD 2B for the guided group was accompanied by keywords (Figure 6).

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

Data Collection (Pengumpulan Data)
Temukan istilah penting dari konsep perpindahan kalor pada tabel di bawah ini!
Kata kunci ada di halaman awal LKPD.

I	O	D	I	N	K	L	N	K	A
A	R	I	S	O	L	A	T	O	R
S	B	A	N	T	U	L	O	N	I
E	S	O	I	R	O	E	A	D	N
I	K	I	N	S	L	K	L	U	N
R	O	T	K	U	D	N	O	K	N
S	D	K	R	A	D	I	A	S	I
O	K	O	N	V	E	K	S	I	R
A	I	S	O	L	A	S	I	N	R
I	L	R	A	K	A	L	O	R	A

Kata yang ditemukan:

1. KO_D_KS_
2. K_NV__SI
3. R_D__S_
4. K_N__K_OR
5. _S_LA_OR
6. _A__OR

Figure 6. LKPD 2B for Guided Groups

Keywords in the LKPD are provided with the hope of being able to facilitate differences in students' initial abilities in learning so that the assessment used becomes more relevant to each student.

In the third meeting with the topic of expansion, students again conducted a simple experiment as in the first meeting. In the data collection activity, LKPD 3A for the advanced group did not provide formula assistance and information on the coefficients of the types of metal rods as shown in Figure 7.

C. Tabel Hasil Pengamatan!

No.	Jenis Batang Logam	Lama Pengamatan (menit)	Simpangan Jarum Sebelum Dipanaskan (mm)	Simpangan Jarum Setelah Dipanaskan (mm)

Jenis Batang Logam **Koefisien Muai Panjang**

Rumus Pemuaian Panjang:

$$\Delta L = \dots x \dots x \dots$$

Keterangan:

Figure 7. LKPD 3A for Advanced Group

At the data collection activity stage, LKPD 3B is different from LKPD 3A, as shown in Figure 8.

C. Tabel Hasil Pengamatan!

No.	Jenis Batang Logam	Lama Pengamatan (menit)	Simpangan Jarum Sebelum Dipanaskan (mm)	Simpangan Jarum Setelah Dipanaskan (mm)

Jenis Batang Logam	Koefisien Muai Panjang
Alumunium
Tembaga	0,000017
Besi

Rumus Pemanjangan Panjang:

$$\Delta L = L_0 \times \alpha \times \Delta T$$

Keterangan:
 ΔL :
 L_0 :
 α :
 ΔT :

Figure 8. LKPD 3B for Guided Groups

Providing different types of worksheets for two groups with different competencies means there are two different instructions according to the students' conditions but with the same goal. TaRL ensures to narrow the achievement gap and provide equitable access to a higher-quality education (Irfan Ananda et al., 2024). Providing instruction that is appropriate to these student characteristics will improve student abilities. Instructional aspects that lead to improved student learning include differentiated instruction, a focus on learning, clear instructions, instructional complexity, learning expectations, the use of technology, and the use of questions (Ardenlid et al., 2025; Goyibova et al., 2025; Li, 2025; Taş & Minaz, 2024).

Formative assessment measures not only individual skills but also group skills. Individual skill development is measured using learning journals, process skills rubrics, and reflection questions at every learning opportunity. Group formative assessment measures collaboration skills, participation in discussions, and cooperation in completing student worksheets.

Formative assessment aims to identify difficulties or deficiencies in student understanding early on, allowing appropriate remedial measures to be taken. Formative assessment is often repeated and takes the form of assignments, quizzes, or discussions, providing students with opportunities to refine their understanding before reaching the final evaluation stage. The choice of formative assessment techniques is flexible and depends on the needs. Formative assessment techniques depend on the learning objectives, allowing teachers and students to receive feedback on predetermined learning progress (Onyango et al., 2024). The primary function of formative assessment is to provide constructive feedback, both to students and to teachers' instruction. Formative assessment aims to detect errors or gaps in student understanding early on so that instruction can be adjusted to address these deficiencies. Teachers adjust their instruction based on the assessment feedback, modify instruction, and provide further feedback to students (Schildkamp et al., 2020). Some commonly used examples of formative assessments include mini-tests, homework, class discussions, and Student Worksheets (LKPD). Effective formative assessments can significantly improve student learning outcomes because they

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

provide opportunities for students to address deficiencies before facing summative assessments.

Summative assessments are implemented at the end of a meeting or at the end of a topic being studied. Summative assessments are conducted to determine students' overall abilities in the material being studied. Due to time constraints, informants did not administer summative assessments in class but rather in the form of individual assignments delivered at the end of the lesson. Summative assessments should provide information on individual or class achievement ([Ganajová et al., 2021](#); [Rao & Banerjee, 2023](#)). Summative assessments can provide useful information regarding students' overall learning achievement, but they do not provide students with the opportunity to correct any errors or difficulties they may have encountered during the learning process. Even though there is no further intervention related to the material being taught, student scores resulting from summative assessments will provide a complete picture of the success of learning using the TaRL approach.

In practice, assessment using the TaRL approach is more appropriate than diagnostic and formative assessments. Diagnostic assessments yield a mapping of students' initial abilities, which is then followed by the provision of differentiated learning strategies tailored to their ability level ([Rostikawati et al., 2025](#); [Sundari et al., 2025](#)). Formative assessments involve regular, simple assessments to determine students' actual development and provide various interventions as needed ([Töllner et al., 2025](#)). However, summative assessments involve teachers measuring students' accumulated competencies, assigning grades, and reporting them as administrative reports without any further intervention ([Muhanguzi, Jonnan et al., 2025](#); [Rao & Banerjee, 2023](#); [Svensäter & Rohlin, 2023](#)).

The comprehensive assessment study of diagnostic, formative, and summative assessments differentiates this study from other studies. Integrated assessment studies can support learning and accountability ([Erofeeva & Kuznetsov, 2025](#); [Ismail et al., 2022](#); [Mahshanian et al., 2019](#)). This study critiques other TaRL studies that tend to separate assessment functions and ignore the role of summative assessment in learning ([Asharif Suleman & Idayanti, 2024](#); [Triwahyuningtyas et al., 2025](#)).

B. The Challenge That Was Faced In Implementing The Tarl Approach

One of the main challenges in implementing assessments based on the TaRL approach is the limited time available within the learning schedule. The diagnostic assessments that underpin this approach require dedicated time to identify each student's individual ability level. Informants often have to juggle these assessments with a busy curriculum and other administrative demands, preventing them from being conducted optimally and in-depth. Resulting in inaccurate results for designing targeted learning interventions. This challenge requires teachers to find effective time management strategies to ensure TaRL assessments continue without disrupting other learning processes.

The diversity of student abilities within a single class poses a significant challenge in TaRL assessment because this approach requires accurate mapping of core competencies. A single teacher must manage an academically heterogeneous class

and establish assessment strategies responsive to the ability levels of a large number of students.

In the TaRL approach, students are grouped based on ability, not age or grade. However, some students resist this grouping due to embarrassment, discomfort, or perceived discrimination. This impacts the effectiveness of assessment and intervention.

The guided group in the TaRL approach consists of students with lower basic abilities than the advanced group. Challenges arise when students in this group have minimal learning motivation and difficulty communicating, both verbally and in writing. This makes the assessment process ineffective because students tend to be passive and don't provide sufficient responses for the teacher to understand their true abilities.

C. Solution For Solving The Challenge That Was Faced In Implementing The TaRL Approach

A solution to overcome student resistance to grouping is to implement a group rotation system. This rotation allows students to move between groups according to their developmental abilities so that no student feels "trapped" in a particular group. Furthermore, rotation also encourages increased motivation because students recognize the opportunities for growth.

Developing a limited level of difficulty for student worksheets (LKPD) is crucial in supporting TaRL-based assessment and learning. LKPDs with varying levels of difficulty allow students to learn at their own pace and facilitate teachers in monitoring student progress. Different LKPDs indicate differences in learning practices. Differentiated and flexible learning practices will help bridge the gap in student achievement ([Variacion et al., 2021](#)).

To make initial assessments more effective, it's necessary to design appropriate, contextual, and simple diagnostic assessments. Concise yet informative instruments will make it easier for teachers to map student abilities without wasting a lot of time. These assessments also need to be flexible so they can be used in various learning contexts. The goal is for learning to prioritize flexibility for educators to adapt to students' needs in the classroom ([Putri & Siswanto, 2024](#)). Diagnostic assessments can also utilize technology. The use of technology in assessments, including item writing, test construction, bold test delivery, automated scoring, data processing, scaling, and providing feedback to both students and teachers, can be implemented even on a large population scale ([Csapó & Molnár, 2019](#)).

Cooperation between teachers is essential. Collaboration will occur between two or more professionals ([De Backer et al., 2021](#)). Interconnectedness between teachers is essential in implementing the TaRL strategy, which includes designing assessments, planning differentiated materials, and dividing up tutoring tasks. This interconnectedness will increase the efficiency and consistency of learning implementation. Teachers require competency, both knowledge and skills, in developing lesson plans and assessment tools and selecting appropriate materials to accommodate students' needs ([Isaboke et al., 2021; Sefriyana et al., 2025](#)).

Students in guided groups often require more intensive support to build their motivation and foundational understanding. Teachers can use an individualized

How is assessment with the Teaching at the Right Level (TaRL) Approach implemented in Science Learning?

approach, structured questions, and simple but meaningful practical activities, tailoring feedback from students who need guidance. Students who are below average will receive more guidance with smaller steps, more examples, and concrete analogies. The use of work examples, accompanied by step-by-step explanations and analogies, can be effective in helping students understand concepts and overcome misconceptions (Ngu & Phan, 2023; Wang et al., 2020).

Based on the explanation in the discussion, it can be understood that the use of the TaRL approach in learning has several implications, namely that teachers design learning based on students' actual ability levels, rather than relying on age or grade level. Learning planning is adaptive, flexible, and includes differentiated learning scenarios. This has a pedagogical meaning that learning planning is no longer about completing material but completing student learning (Rahmawati et al., 2020). Other implications are that diagnostic assessments have an important role in mapping student abilities, formative assessments as ongoing assessments, and monitoring shifts in student ability levels so that assessments are no longer oriented solely on numbers but also focus on each student's learning progress (Sefriyana et al., 2025; Triwahyuningtyas et al., 2025). The impact on classroom management is that classes become more dynamic, and grouping is flexible. The implications of the TaRL approach on the role of teachers are that teachers act as facilitators, observers, and designers of simple data interventions based on the development of students' actual abilities. Teachers can carry out their roles according to the among system that guides and does not force.

Based on the explanation in the discussion, it can also be seen that the differences between assessment using the TaRL approach and assessment commonly used are based on aspects of philosophy, objectives, and forms of assessment. From a philosophical aspect, conventional assessment uses assessments based on class and age standards, assumes homogeneous student abilities, and student failure is considered a student deficiency rather than an inaccuracy of learning. Assessment using the TaRL approach is based on student learning development, recognizes the diversity of abilities as part of nature, and student failure is an indicator of the need for intervention in learning. Differences based on the purpose of assessment, in conventional assessment, assessment is used to obtain grades, rankings, and class completion that can be used for reporting and administration (Bakhshaliyeva, 2023; Rao & Banerjee, 2023), while assessment using the TaRL approach can be used to diagnose initial abilities and determine student learning needs, including learning strategies and information on the progress of each individual student. Based on the aspect of the form of assessment, conventional assessment is in the form of written tests or multiple-choice tests that do not reflect the actual abilities of students, while assessment using the TaRL approach can use simple and meaningful instruments such as observation, performance, oral questions, and reflection.

Conclusion

This study shows that the implementation of assessment based on the Teaching at the Right Level (TaRL) approach has been carried out systematically in two main stages, namely diagnostic assessment and formative assessment. Diagnostic

assessment is developed in both cognitive and non-cognitive forms, which aims to map the characteristics and initial abilities of students as a basis for grouping in learning. During the learning process, formative assessment is carried out through the use of differentiated Student Worksheets (LKPD) at the level of student ability, not only measuring cognitive aspects but also affective and psychomotor ones.

In implementing the TaRL approach, informants encountered several obstacles, such as limited learning time, diverse student abilities, student resistance to ability-based grouping, and low motivation and communication skills among students in the guided groups. This contributed to the suboptimal assessment as a basis for learning adjustments.

To minimize these obstacles, several strategic solutions were implemented. Group rotation was implemented to avoid the stigma of being permanently grouped into one ability group; student worksheets (LKPD) were designed with varying levels of difficulty to adapt to student levels; diagnostic assessments were designed to be shorter and more relevant; and collaboration between teachers was strengthened to develop instruments and share answers. Furthermore, teachers also provided more intensive guidance to students in the guided groups through a more personalized and contextual approach. With these strategies, the TaRL approach became more flexible and efficient in anticipating students' individual learning needs.

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