

Implementation of 21st Century Learning through The Stages of Teaching at The Right Level Approach for Students of Integrated Islamic Elementary Schools

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ABSTRACT

21st-century skills generally refer to the core competencies of digital learning, critical thinking, and real-world problem-solving. These skills are developed to help learners cope with modern developments. Learners are seen as individuals who are active learners, rather than spectators and listeners. The study aimed to investigate the implementation of 21st-century learning through the application of the Teaching at the Right Level (TaRL) approach. The research method is descriptive qualitative, which describes the results of interviews, questionnaires, and observations conducted by researchers. The results of the data analysis of fourth grade students in IPAS (Social and Science Subject) learning show better results, the mean score of students is 82.21 with the performance of students above the criteria for achieving learning goals as high as 84 percent, i.e. 16 students and 16 percent, i.e. 3 students have still not achieved KKTP. The highest score is 100 and the lowest score is 41. The percentage shows that the implementation of 21st-century learning by applying the TaRL approach helps students develop critical thinking, problem-solving, and intellectual skills and shows that students' learning outcomes have improved.

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Introduction

Learners are now considered active learners, not just spectators and listeners. Learners need to be involved in creating new ideas. Education that can equip learners to meet the challenges of the 21st century should be implemented based on three educational principles: the principle of independence, the principle of participation, and the principle of productivity (Aisyiyah & Amrizal, 2020; Sumardi, et al., 2020; Sulaiman & Ismail, 2020).

Learning based on these three principles involves authentic learning models with real-life contexts, project-based learning, and problem-based learning. These three learning models are meaningful learning models for students (Anagün, 2018; Nurramadhani, 2021; Seibert, 2021). Building relationships with teachers, community, and peers will provide learning experiences for learners. According to BSNP (2010), The 21st Century Learning Framework includes 1) Critical Thinking and Problem-solving, the ability to think critically,

literally, and systematically, especially in the context of problem-solving; 2) Communication and Collaboration, the ability to communicate, collaborate or work together effectively; 3) ICT literacy, the ability to optimize performance and daily activities; 4) Contextual learning skills, the ability to undergo independent learning activities in context as part of personal development; 6) Information and media literacy, the ability to understand and use different communication media to convey ideas and collaborative activities; 6) Information and media literacy, the ability to understand and use different communication media to convey ideas and collaborative activities (Mu'minah, 2021; McGunagle & Zizka, 2020; Nurramadhani, et.al., 2023))

Based on this view, the skills expected to be formed are critical thinking skills, knowledge, and ability in digital literacy, information literacy, media literacy, and ICT mastery. Learning in the 21st century is learning through the integration of literacy, knowledge, skills, and attitudes, as well as mastery of technology. 21st-century skills generally refer to the core competencies of digital learning, critical thinking, and real-world problem-solving. These skills are developed to help learners cope with modernization Mu'minah (2021) Learning in the 21st century is geared towards four elements: communication, collaboration, critical thinking and problem-solving, and creativity and innovation. The learning that supports the formation of these skills is student-centered, and students are provided with higher-order thinking Skills (HOTS).

The results of interviews with teachers found that some learners were less engaged in the learning groups. This situation was also obtained from the results of observations during previous lessons that the attitude of cooperation among students in the learning group is still low. This happens because there are differences in the characteristics of students in the same class, especially at the level of their ability to understand the lessons. Quite a few students feel unable to participate in learning because it does not match their abilities. One of the efforts to overcome these issues is the implementation of Teaching at the Right Level (TaRL).

TaRL is an instructional approach that does not refer to grade level but to the cognitive level of students. Through the results of analyzing these issues, and to overcome the low learning outcomes and student inactivity in the IPAS course on different forms of energy and changes in forms of energy, innovative learning is arranged by applying the TaRL approach and the PBL model. Teachers chose this model because it develops new knowledge and improves students' critical thinking skills. The TaRL approach is an approach developed in an independent curriculum where the approach previously used in the 2013 curriculum was scientific. The novelty of this study is differentiated learning based on the level of cognitive ability of students using the TaRL approach.

Learning in the 21st century can be done through the stages of the TaRL (Teaching at the Right Level) curriculum which consists of three stages, namely (1) assessment, (2) synthesis, and (3) learning. By identifying some of the issues that arise, how is the implementation of 21st-century learning through the stages of the TaRL curriculum for fourth-grade students in integrated Islamic primary schools in Bogor City?

This research aims to apply the development of learning tools through an appropriate multilevel teaching curriculum with a Problem-Based Learning (PBL) model. Enhanced teaching in question is differentiated learning based on the cognitive level of students who have different characteristics. So that with learning that is adjusted to the cognitive level of every single student can be optimized.

Method

The research method used in this research is descriptive research. Descriptive research is a research method used by experts or researchers to describe an event or phenomenon in a factual, real, and current manner/ The main focus of descriptive research is to describe existing phenomena, such as natural or man-made phenomena (Sugiyono, 2016). Some of the characteristics of descriptive research include the following:

1. Autonomous Curriculum: An autonomous curriculum prioritizes the learning process that exercises creativity through the learning methods or approaches applied
2. Level-based learning: Level-based learning: It is an educational approach that focuses on the level or stage of development of the learner (Rosyidah et al., 2022)
3. Use of Information and Communication Technology (ICT): One of the characteristics of 21st-century learning is the integration of ICT into learning.
4. Assessment and evaluation: Teachers should conduct an initial assessment as a diagnostic test for learners to determine learners' needs and potential so that teachers know learners' abilities and initial development.
5. Coaching, mentoring, and monitoring: Some of the important stages in the 21st-century learning program with 21st-century learning program are training, mentoring, and monitoring by applying the 21st-century learning approach teachers can increase learners' motivation to learn, paying attention to the needs of abilities and interests, develop critical thinking, problem-solving, creative and innovative thinking, communication and collaboration skills (Rosyidah et al., 2022).

Results and Discussion

The result of this study is that learning has gone well. In assessment activities assessment for learning, assessment as learning, or assessment of learning. In the process, the assessment carried out includes:

1. Attitude assessment
Attitude assessment to observe the learning process individually and in groups, using observation techniques with instruments in the form of observation sheets. Aspects of student attitudes assessed by teachers, namely: cooperation, independence, and creativity. With the provisions of attitude assessment: score 86-100 (already cultured), score 71-85 (start to cultivate), score 61-70 (start to appear), score less than 60 (not yet visible). This attitude assessment is carried out during the group discussion process and the learning process.
2. Knowledge assessment
Knowledge assessment to determine the level of ability of students in answering test questions using a written test in the form of an evaluation sheet containing 10 guru choice questions and 5 description questions, this knowledge assessment is carried out after the learning activity is completed.
3. Skill assessment
Skill assessment to measure the ability of learners, using rubrics in the form of observation sheets. With achievement criteria, students can determine the form of energy used and students can identify changes in the form of energy. The rubric uses assessment scores of 4 (very good/proficient), 3 (good), 2 (sufficient), and 1 (need guidance), this skill assessment is carried out when students have problem-solving discussions and during presentations.

The results of the analysis of the acquisition of grade IV students in science learning showed better results, where the average score of students was 82.21 with student achievements above KKTP (Learning Objectives Attainment Criteria) as much as 84%, namely 16 students and 16%, namely 3 students still have not reached KKTP. The highest value is 100 and the lowest value is 41. This percentage shows that the implementation of 21st-century learning through the application of the TaRL approach based on Problem-Based Learning (PBL) can help students develop critical thinking skills, problem-solving, and intellectual abilities and show that student learning outcomes have improved.

Below is presented a recapitulation of the graph of student value acquisition which includes knowledge assessment, skill assessment and attitude assessment in science learning.

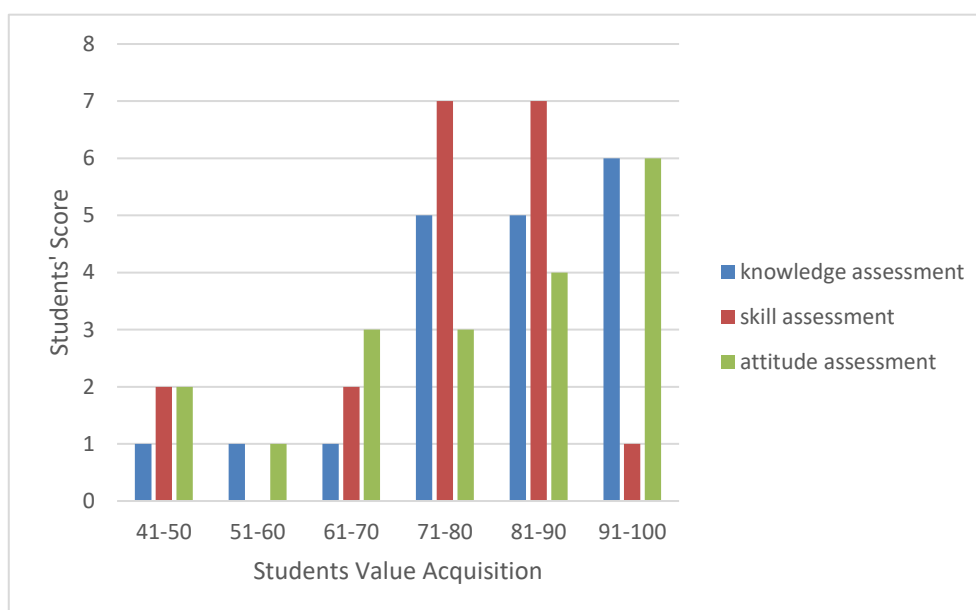


Figure 1. Recap of Assessment Results with TaRL Approach

Based on peer assessments that have been carried out, there is an increase because teachers have carried out learning in sequence according to the teaching module starting from the initial activities, core activities (syntaxes contained in PBL), and final activities following the predetermined time. By using the description of the assessment, the implementation and appropriateness of time are very good, with a threshold value of A. Teachers have also compiled PBL teaching modules completely, the material prepared is TPACK-based and presented interestingly, the LKPD that is compiled is problem-oriented, the media used is ICT-based, and the questions prepared for evaluation are also HOTS-based. It is in a line with the research Darmayanti, et.al. (2022) that described HOTS problem could cultivate students reasoning ability as one of 21st century skills.

Based on survey instruments to students, teachers have delivered material from various sources, always motivated students, teachers have taught with varied methods and innovative learning models so that there is an increase in learning outcomes with a great curiosity drive trying to find sources of information in problem-solving. Students are more active in asking questions, dare to express their opinions in groups freely without any pressure, and can complete tasks on time.

21st-century learning using Teaching at the Right Level (TaRL) is an approach that focuses on the level or stage of development of learners rather than the grade level. To apply

the TaRL (Teaching at the Right Level) approach to 21st-century learning, teachers can follow these steps:

1. **Assessment:** To know the capabilities of learners, teachers need to conduct assessments that are aligned with the requirements of 21st-century learning.
2. This assessment can be done through structured tests, interviews, or observations.
3. **Synthesis:** Based on the results of the assessment, teachers should then group learners into similar or different ability groups, according to their ability levels.
4. For example, teachers can create groups of learners based on their abilities in critical thinking, creativity, collaboration, and communication
5. **Learning:** Once groups of learners are formed, the teacher must adjust the learning to the needs and abilities of each group

In the learning process, the teacher must ensure that learners are active in the learning process and that learning is self-centered. By applying the TaRL approach to 21st-century learning, teachers can increase learners' motivation to learn and be active in learning. In addition, this approach can also help develop 21st-century skills, such as critical thinking, creativity, collaboration, and communication—steps to take to implement the TaRL approach to 21st-century learning.

Here are the steps to determine the ability levels of learners in the Teaching at the Right Level (TaRL) curriculum:

1. **Assessment:** Assess the learner's ability level, either through testing, interviews, or systematic observation.
2. **Grouping:** After assessment, group learners based on their ability levels, so that they can be grouped according to their learning needs.

By doing the above steps, teachers can identify learners' ability levels and group them according to their learning needs. This will help teachers apply the TaRL approach to 21st-century learning and improve the effectiveness of learning and 21st-century skills in learners (Audah et al., 2023)

In the TaRL (Teaching at the Right Level) approach, assessment is the process of collecting and processing information to determine learners' learning needs, development, and achievement of learning outcomes (Cahyono, 2022). This assessment is conducted by a San teacher to improve the quality of learning and help implement the TaRL approach. The steps for conducting an assessment in the TaRL approach include the following:

1. **Initial assessment:** Conducting an initial assessment to determine the level of students' abilities either through tests, interviews, or systematic observation
2. **Grouping:** After assessment, group students based on their ability levels, so they can be grouped according to their learning needs
3. **Differential learning:** adapting learning styles to the needs and abilities of each group of students. Ensure that students are active in the learning process and that learning is self-centered

Through comprehensive assessment, teachers can understand the learning needs of learners and develop learning strategies that align with the TaRL approach to improve learning effectiveness and student learning outcomes. The purpose of assessment in the TaRL approach is to determine the level of ability of students, categorize them based on ability level, and develop learning that suits the needs and abilities of each group of learners. These assessments play an important role in determining learning success and helping teachers develop appropriate learning. Thus, assessment in the TaRL approach allows

teachers to deliver learning tailored to the needs and abilities of learners, thereby increasing learning effectiveness and achievement of learner learning outcomes (Audah et al., 2023).

Implementing 21st-century learning using Teaching at the Right Level (TaRL) is an approach that focuses on the learner's level or stage of development rather than the grade level. Here are some steps to implement 21st-century learning using TaRL:

1. **Autonomous Curriculum:** An autonomous curriculum prioritizes the learning process that exercises creativity through the learning methods or approaches applied
2. **Level-based learning:** Level-based learning is an educational approach that focuses on the learner's level or stage of development (Rosyidah et al., 2022)
3. **Use of Information and Communication Technology (ICT):** One of the characteristics of 21st-century learning is the integration of ICT into learning.
4. **Assessment and evaluation:** Teachers should conduct an initial assessment as a diagnostic test of learners to find out the needs and potential of learners so that teachers know learners' abilities and initial development
5. **Coaching, mentoring, and monitoring:** Some of the important stages in 21st-century learning program with 21st-century learning programs are training, mentoring, and monitoring by applying the 21st-century learning approach in 21st-century learning, teachers can increase learners' motivation to learn, pay attention to the needs of abilities and interests, develop critical thinking, problem-solving, creative and innovative thinking, communication and collaboration skills (Rosyidah et al., 2022)

To apply the TaRL (Teaching at the Right Level) approach to 21st-century learning, teachers can follow the following steps

1. **Assessment:** To know the abilities of learners, teachers need to conduct assessments that are in line with the demands of 21st-century learning.
2. This evaluation can be done through systematic tests, interviews, or observations.
3. **Grouping:** Based on the assessment results, teachers should then group learners into groups of similar or different abilities, according to their ability levels. For example, teachers can group learners based on their abilities in critical thinking, creativity, collaboration, and communication.
4. **Learning:** Once learner groups are formed, teachers must adapt learning to the needs and abilities of each group.

In the learning process, teachers must ensure that learners are active in the learning process and that learning is self-centered. By applying the TaRL approach to 21st-century learning, teachers can increase learners' learning motivation and be effective in learning. In addition, this approach can also help develop 21st-century skills, such as critical thinking, creativity, collaboration, and communication.

In the TaRL (Teaching at the Right Level) curriculum, assessment is the process of collecting and processing information to identify students' learning needs and develop and achieve learning outcomes (Cahyono, 2022). This assessment is undertaken by a teacher to improve the quality of learning and assist in the implementation of TaRL.

Education in the 21st century is the process of developing and empowering all students' potential to form better personalities. Four categories of 21st-century skills, namely soft skills, interpersonal and social skills, knowledge and information management, and digital literacy). Humans in the 21st century are required to have the ability to think critically and creatively, communicate and collaborate, as well as master ICT (Amelia, 2021). These 21st-century skills should be developed starting with basic formal education, specifically at the

primary school level. Primary school education is the basis for forming a good personality to continue to the next higher level of education (Marlina, Elsa Efrina, 2019).

TaRL (Teaching at the Right Level) is a 21st-century educational approach that does not refer to class level but rather refers to the ability level of students. This approach consists of three stages, namely assessment, collection, and learning (Kelana, 2018). The assessment phase is done to determine the students' abilities, then the students are grouped according to their abilities, and learning takes place by paying attention to the needs and abilities of each group of students (Cakranegara, 2021). The TaRL curriculum can increase students' learning motivation and be effective in learning (Herwina, 2021).

Teaching at the Right Level (TaRL) is an instructional method that does not refer to the classroom level, but rather to the ability level of the students. This approach helps teachers design learning according to each student's stage of achievement so that students are not tied to the classroom level (Rahayu, 2021). TaRL provides flexibility in teaching according to student ability and is created to suit students' achievements, ability levels, and needs. TaRL can also help students increase their self-confidence because students are grouped according to their ability levels (Andini, 2020). Several important stages in a 21st Century Learning program with TaRL are independent curriculum, level-based learning, use of information and communication technology (ICT), assessment, as well as training, guidance, and monitoring. By applying the TaRL approach to 21st-century learning, teachers can increase students' learning motivation, pay attention to ability needs and interests, and develop critical thinking skills, problem-solving, creative and innovative thinking, communication, and collaboration (Suharyani et al., 2023; Rosyidah et al., 2022).

The results and discussion of research obtained from the assessment activities carried out have a positive impact on students and learning. Some of the benefits felt by students, namely:

1. Improve material understanding
Through the assessment of learning outcomes, I can assess the extent to which learners have understood the forms of energy and changes in forms of energy. The results of this assessment can provide an idea of the extent to which learners have achieved the learning objectives that have been set.
2. Improve analytical skills
LKPD analysis activities in group discussions help students develop their ability to analyze problems regarding energy forms and changes in energy forms.
3. Development of speaking and presentation skills
Through presentation, students can improve their speaking skills, self-confidence, and presentation.
4. Enhanced collaboration capabilities
The TaRL approach encourages group work and collaboration among learners.
5. Assessment results can reflect the extent to which learners can contribute in groups, share ideas, and solve problems together with their groups.
6. Understanding innovative learning models
Learners can understand the benefits of innovative learning models such as PBL. This can provide insight into how different learning models can enhance learning.
7. Critical appraisal development
Learners can learn the importance of in-depth and critical judgment in problem-solving, which is one of the essential skills they can apply in a variety of contexts.

Conclusion

Based on all the results of the research data and discussions that have been described, it can be concluded that this research went well and according to plan. Implementing 21st-century learning by applying TaRL based on the Problem-Based Learning (PBL) model can improve student learning outcomes. Twenty-first-century learning through teaching phases at the correct level for fourth-grade students has been implemented well, and this can be seen from the learning results obtained by the students. The results of the fourth-grade analysis show better results for students in learning science, with average scores of Students 82.21 with student achievements above KKTP (Learning Objective Achievement Standards) by 84% or 16 students and 16% or 3 students have not yet reached KKTP. The highest score is 100 and the lowest score is 41. This percentage shows that applying the TaRL approach and the problem-based learning (PBL) model in 21st-century learning can help students develop critical thinking, problem-solving, and intellectual abilities and show students improved learning outcomes.

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