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21st Century Learning through The Stages of The Teaching at The Right Level Approach for Grade IV Students of Integrated Islamic

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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 keep up with modern developments, as learners are now considered active learners and not just spectators and listeners. Research is carried out through qualitative methods through the stages of observation, interviews to identify problems, conducting discussion group forums, making questionnaire instruments, observation guidelines, and interview guidelines. This is confirmed by the learning outcomes available to students, as they have been completed thoroughly. Science Learning Grade 4 students performed well, with an average student score of 82.21 points higher than the Learning Objectives Achievement Standard of 84 percent, or 16 points and 16 percent, which means 3 students have not met the Learning Objectives Achievement Standard. The maximum price is 100 and the lowest price is 41. These percentages indicate that applying the TARL method and problem-based learning (PBL) models to 21st-century learning improves students' critical thinking, problem-solving skills, and intelligence.

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INTRODUCTION

21st-century learning is learning that integrates literacy, mastery of knowledge, skills, and attitudes, and 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 keep up with modern developments, as learners are now considered active learners and not just spectators and listeners. The change in the learning paradigm of the 21st century requires the identification of competency needs needed by the business / industrial world. Efforts to develop individual student competencies in the field of technology following the demands of the era of globalization (competition in cooperation and cooperation in competition) through

learning practices in educational institutions (technology) are currently very important (Wijaya et al., 2016)

Learners must be engaged and involved in generating new ideas. Education capable of equipping learners to meet the challenges of the 21st century must be implemented based on three educational principles: Autonomy, Participation, and Productivity (Aisyiyah & Amrizal, 2020). Learning based on these three principles involves authentic learning models with real-world contexts, project-based learning, and issue-based learning. These three learning models are meaningful learning models for students. (Anagün, 2018). Building relationships with teachers, communities, and peers will also provide learning experiences for learners.

According to BNSP (2010)the 21st-century learning framework includes the following: 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 to optimize performance and daily activities; 4) Contextual learning skills, able to undergo contextualized independent learning activities as part of personal development; 6) Information and media literacy skills, able to understand and use different communication media to convey ideas and collaborative activities. (Mu'minah, 2021). To face learning in the 21st century, everyone must have critical thinking skills, digital literacy knowledge and abilities, information literacy, media literacy, and master information and communication technology.

The rapid advancement of information and communication technology in the 21st century is forcing teachers who teach students at every level of education to change their behavior and minds. The rapid integration of technology has brought about strong changes in the education system and improved digital skills for students and lecturers. Technology can also influence how you think, learn, and interact. Technology development encourages educators to understand and use technology in learning activities and activities to create a dynamic learning environment. (Dakhi et al., 2020)

Based on this opinion, the skills that are expected to be formed are critical thinking skills, digital literacy knowledge and abilities, information literacy, media literacy, and mastering information and communication technology. 21st-century learning is learning by integrating literacy abilities, knowledge skills, 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 the development of modernization. Anderson (Mu'minah, 2021) stated that 21st-century learning is directed at four components, namely communication, collaboration, critical thinking and problem-solving, creativity, and innovation. Learning that supports the formation of these skills is learning that is student center and students are equipped with higher-order thinking skills (HOTS). Here's a schematic paradigm shift in 21st-century learning.

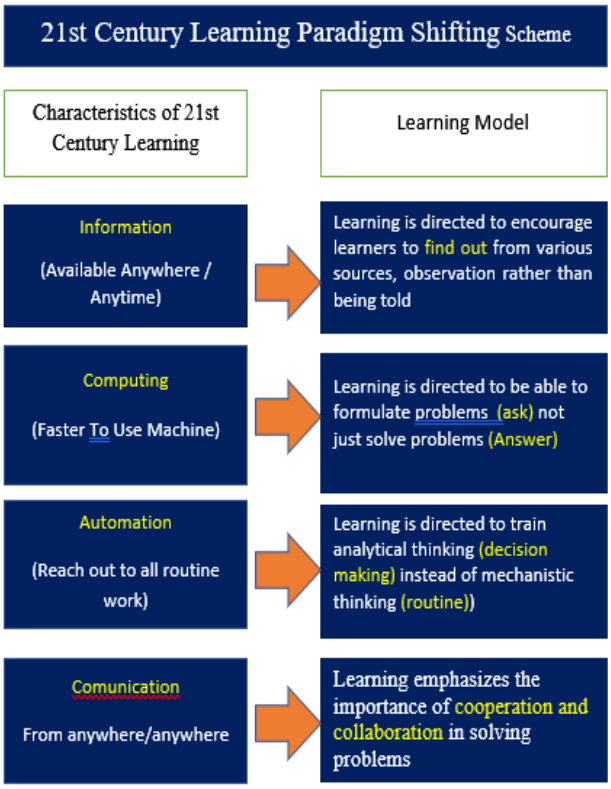

Figure 1. A 21st Century Learning Paradigm Shift (Wijaya et al., 2016)

The results of interviews with teachers at SDIT Utsmanil Hakim found that some students were less involved in the study group. This condition was also obtained from observations during previous learning that the cooperation attitude of students in the study group was still low. This happens because even though in the same class there are differences in the characteristics of students, especially at the level of their ability to understand the lesson. Not a few students feel unable to follow learning because it is not by their abilities. One of the efforts to overcome the problem is by applying the Teaching at the Right Level (TaRL) approach.

The TaRL approach is a learning approach that does not refer to the grade level but refers to the cognitive level of students. From the results of the problem analysis, to overcome the low learning outcomes and inactivity of students in science subjects of various forms of energy and changes in energy forms, innovative learning was compiled, namely the application of the Teaching at the Right Level (TaRL) approach and the Problem-Based Learning (PBL) model. The reason teachers choose this model is because it is to develop new knowledge and improve the critical thinking skills of learners.

The Problem Based Learning (PBL) model can show a significant influence between the learning model and students' critical thinking skills and can increase student learning motivation (Mokoginta, 2023) Problem Based Learning (PBL) focuses on the learning process of learners. Where students can explore complex topics in various contexts and real problems. Learners discuss in groups and then identify what they know to gain new information that can lead to problem-solving. Based on the explanation, in the context of learning-oriented toward increasing HOTS, PBL is one of the suitable learning models to be

implemented. In the stages of the learning process, the PBL emphasizes students' efforts to overcome problems, thus requiring skills in making effective decisions. In addition, skills are needed to analyze problems and choose alternative problem-solving according to the context of the learning material (Darmawan & Hilmawan, 2021). Central to this system is a conception of learning as an integrated process of cognitive, metacognitive, and personal development. Barrows argues that a more accurate title for the model he and his collaborators developed might be ‘‘student-centered, problem-based, inquiry-based, integrated, collaborative, reiterative, learning.’’17 However, the label ‘‘Problem Based Learning’’ has stuck. And it is this uppercase PBL that is the focus of this article (Newman, 2005). Problem-based learning (PBL) is widely regarded as a successful and innovative method for engineering education (Newman, 2005). Problem-based learning (PBL) is an instructional method where student learning occurs in the context of solving an authentic problem. PBL was initially developed out of an instructional need to help medical school students learn their basic sciences knowledge in a way that would be more lasting while helping to develop clinical skills simultaneously (Marra et al., 2014).

There is an increase in critical thinking skills in students whose learning uses a problem-based learning model is higher than in students whose learning uses conventional learning. It can be concluded that the improvement of critical thinking ability in students who learn using a problem-based learning model is higher than in students who learn using conventional learning (Pebriana & Disman, 2017).

The purpose of using the Problem-Based Learning model is to teach students to be able to work actively and collaboratively to solve problems in the learning process. The problem-based learning model in addition to increasing student activeness also trains students to think critically in the problem-solving process so that the learning process becomes more meaningful. Annisa et al. (2022) stated that the influence of the Problem-Based Learning learning model is very high in the learning process so that it can improve student learning outcomes. 21st century learning can be done through the stages of the TaRL (Teaching at the Right Level) approach which consists of three stages, namely: (1) Assessment, (2) Grouping, and (3) Learning.

The formulation of the problem in this study is how to implement 21st-century learning through the stages of the Teaching At The Right Level approach in grade IV students of Integrated Islamic Elementary Schools in Bogor City.

This study aims to implement the development of learning aids through the teaching at the right level approach with a problem-based learning model (PBL). The innovation in this study is to apply 21st-century learning through the teaching at the right level approach and Problem-Based Learning Model (PBL) based on the cognitive level and potential possessed by differentiated students. 21st-century teaching requires teachers to be more creative, innovative, and interactive, so it is necessary to describe the level of achievement teachers have made in applying 21st-century teaching so that the teaching is not monotonous and not outdated.

METHOD

Research is carried out through qualitative methods through the stages of observation, interviews to identify problems, conducting discussion group forums, making questionnaire instruments, observation guidelines, and interview guidelines. Descriptive qualitative research is a research and research method used by experts or researchers to describe an event or phenomenon realistically, real, and present/ The main focus of descriptive research is to describe existing phenomena, such as natural phenomena or man-made phenomena (Sugiyono, 2016) Some characteristics of descriptive research include:

1. **Subject of study, time, and place of study.** The subjects of the study were 19 IV SDIT Usmanil Hakim of Tanahsareal Sub-district, Bogor City. The research time is in November 2023 for the 2023-2024 school year.
2. **Data collection techniques**: tools used for cognitive assessment in the form of written tests whose questions vary according to the level of knowledge and potential that students possess. Interviews are conducted with teachers before and after applying the TaRL approach using interview guide tools. Observation tools are used during the evaluation of learning activities. While the questionnaire tool is given to teachers, post-lesson monitors, and pupils end up for repetition and follow-up.
3. **Analysis techniques**: Interview results are processed as previous answer results are reduced by some questions that students answer. Results of observations and. The questionnaire was processed using descriptive statistics. The learning attainment criteria are considered successful when 80% of the number of students have met the criteria for meeting learning goals.
4. **Research Results**: The results of the study are described in the form of narrative descriptions supported by data obtained during the research.

The assessment criteria carried out in this process include:

1. Attitude assessment
   Evaluation of attitudes towards observation of the learning process individually and in groups using observation techniques with instruments in the form of observation sheets. Aspects of pupils' attitudes evaluated by teachers, namely: cooperation, independence, and creativity. With attitude assessment provisions: score 86-100 (already cultivated), score 71-85 (start cultivating), score 61-70 (start appearing), score below 60 (not yet seen). This assessment of attitudes is done during the group discussion process and the learning process.
2. Knowledge Assessment
   To determine the ability of students to answer test questions using a written test in the form of an evaluation sheet, which contains 10 teacher choice questions and 5 descriptive questions, this knowledge assessment is carried out after the completion of the learning activity.
3. Skills assessment
   Skills assessment to measure pupils' abilities using rubrics in the form of observation sheets. Using performance criteria, students can determine the form of energy consumed, and students can identify changes in the form of energy. The rubric uses a score rating of 4 (very good/proficient), 3 (good), 2 (adequate), and 1 (needs guidance), this skill assessment is done when students discuss problem-solving and during presentations. In addition, descriptive

research can also be carried out through data collection as reference material, using descriptive research methods to describe broad and detailed objects or subjects. In descriptive research, research results must be written in detail, with researchers who from the beginning use descriptive research methods.

RESULTS AND DISCUSSION

Result

The results of the analysis of the assessment of learning outcomes of grade IV students in social science learning showed better results, where the average score of students was 82.21 with student achievement above the criteria for achieving learning objectives as much as 84%, namely 16 students and 16%, namely 3 students still did not reach the criteria for achieving learning objectives. 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 Problem-Based *Learning* (PBL)-based TaRL approaches can help students develop critical thinking, problem-solving, and intellectual skills and show that student learning outcomes have improved.

Below is presented a recapitulation of student score acquisition charts which include knowledge assessment, skill assessment, and attitude assessment in social science learning. Below is presented a recapitulation of student score acquisition charts which include knowledge assessment, skill assessment, and attitude assessment in social science learning.

Table 1. Research Results Of The Assessment Of Student Learning Outcomes Using The Tarl Approach

Description	Student	Information
Achieve the criteria for completeness of learning objectives	16	84%
Have not reached the provisions for the completeness of learning objectives	3	16%
Highest Value		100
Lowest Value		41
Average value		82,21
Sum	19	

In the peer assessment that has been carried out, there is an increase because teachers have carried out learning in sequence according to the teaching module starting from the initial activity, core activities (syntaxes contained in PBL), and final activities by the predetermined time. With 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.

In the survey instrument 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.

The Learning has been going well. In assessment activities assessment *for learning, assessment as learning, or assessment of learning*. In the process, the assessment carried out includes:

a. 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.
b. 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.
c. 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. Rubrics use assessment scores of 4 (excellent/proficient), 3 (good), 2 (sufficient), and 1 (need guidance), these skill assessments are carried out when students have problem-solving discussions and during presentations. The assessment results show students in the good category.

By implementing formative assessment in the TaRL approach, teachers can monitor the learning progress of students periodically and adjust learning according to their needs. This can increase the effectiveness of learning and the achievement of student learning outcomes Outcomes (according to the type of output promised in the attachment to the research agreement letter)

Discussion

21st-century learning using the Teaching at The Right Level (TaRL) approach is an approach that focuses on the level or stage of student development and does not race at the grade level. The latter scenario models a teaching reorientation strategy that combines short-term recovery with long-term adaptation of learning to children's learning levels. Steps that education systems must take to carry out remedial education, include introducing formative assessments to identify children's learning levels, training and empowering teachers to conduct such assessments and adapt their pedagogical learning and practice to the levels and needs of students and prioritizing the attainment of children's core skills, Are proven strategies to improve learning out of context Teaching at the right level (Kaffenberger, 2021). The TaRL approach groups students by actual (rather than expected) level of learning and is tested frequently. This method also uses

interactive and engaging materials designed by Pratham and constantly updated (Evans & Watt, 2005). Here are some steps to implement 21st-century learning with TaRL:

a. **Independent Curriculum**: This independent curriculum prioritizes a learning process that trains creativity through the learning method or approach applied
b. **Level-Based Learning**: TaRL is a learning approach that focuses on the level or stage of development of learners
c. **Use of Information and Communication Technology** (ICT): One of the characteristics of 21st-century learning is the integration of information and communication technology (ICT) in learning
d. **Assessment and Evaluation**: Teachers must carry out initial assessments as diagnostic tests for students to determine the needs and potential of students so that teachers know the abilities and early development of students
e. **Training, Mentoring**, and Monitoring: Some important stages in the 21st-century learning program with TaRL are training, mentoring, and monitoring implementing the TaRL approach in 21st-century learning, teachers can increase student learning motivation, pay attention to capacity and interest needs, and develop critical thinking, problem-solving, creative and innovative thinking, communication, and collaboration skills.

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

a. **Assessment**: To determine the ability of students, teachers need to conduct assessments that are to the requirements of 21st-century learning
b. This assessment can be done through systematic testing, interviews, or observation.
c. **Grouping**: Based on the assessment results, the teacher must then group the learners into groups that have the same or different abilities, according to their ability level
d. For example, teachers can create groups of learners based on their abilities in critical thinking, creativity, collaboration, and communication
e. **Learning**: After the group of learners is created, the teacher must adapt the 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 learning is centered on their own. By applying the TaRL approach in 21st-century learning, teachers can increase student 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. Steps to take to apply the Tarl approach to 21st-century

The steps to determine the level of ability of learners in the *TaRL (Teaching at the Right Level)* approach are as follows:

1. **Initial Assessment**: Conduct an initial assessment to determine the level of ability of students, either through testing, interviews, or systematic observation
2. **Grouping**: After assessment, group learners by their individual ability levels, so that they can be grouped according to their learning needs
3. **Differential Learning**: Adapt learning methods to the needs and abilities of each group of learners. Ensure learners are active in the learning process and learning is self-centered

By performing the above steps, teachers can determine the ability level of learners and group them according to their learning needs. This will help teachers in applying the TaRL approach in 21st-century learning and improve the effectiveness of 21st-century learning and the skills of 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 the learning needs, development, and achievement of student learning outcomes (Dewi Cahyono, 2022) This assessment is carried out by a teacher to improve the quality of learning and assist in the application of TaRL.

Assessment in the TaRL *(Teaching at the Right Level) approach can* help teachers apply this approach more effectively. By conducting assessments, teachers can find out the level of ability of students and group them based on ability level, so that they can arrange learning according to the needs and abilities of each group of students. Assessment can also assist teachers in monitoring the learning progress of learners and adjusting learning according to their needs. Thus, assessment in the TaRL approach allows teachers to provide learning by the needs and abilities of students, to increase the effectiveness of learning and the achievement of student learning outcomes.

By conducting periodic and complete assessments, teachers can understand students' learning needs, and they can develop learning strategies that follow the TaRL approach to improve learning effectiveness and achieve student learning outcomes. The purpose of conducting assessments in the TaRL (Teaching at the Right Level) approach is to determine the extent of students' abilities, distribute them based on skill level, and tailor learning according to the needs and abilities of each group of students. This assessment plays a vital role in learning success and helps teachers in structuring appropriate learning. Thus, the assessment of the TaRL approach will enable teachers to learn through students' needs and abilities, enhancing learning effectiveness (Audah et al., 2023) In the *TaRL (Teaching at the Right Level) approach,* several types of assessments can be used, including:

Formative Assessment: This assessment is carried out during the learning process to monitor the learning progress of students and adjust learning.

Formative assessments can take the form of Q&A, short quizzes, or group discussions

1. **Summative Assessment**: This assessment is carried out after the learning process ends to assess the achievement of learning objectives. Summative assessment can be in the form of a final exam, final project, or concluding project
2. **Diagnostic Assessment**: This assessment is carried out before learning begins to determine the initial ability of students. Diagnostic assessment assists teachers in planning learning according to the needs of students using these various types of assessments, teachers can understand the abilities and learning needs of students, and arrange learning by the TaRL approach to improve learning effectiveness and achievement of student learning outcomes

Formative and summative assessments have differences in the timing of implementation, assessment results, objectives, and use. Here are the differences between the two:

1. **Implementation Time**:
   - Formative assessment is carried out during the learning process to monitor student learning progress and adjust learning.
   - Summative assessment is carried out after the learning process ends to assess the achievement of learning objectives.
2. **Assessment Results**:
   - The results of formative assessment are not used to determine report card scores, grade advancements, or other important decisions.
   - Summative assessment results are used to determine these things.
3. **Purpose**:
   - The purpose of formative assessment is to monitor and improve the learning process and evaluate the achievement of learning objectives.
   - The purpose of summative assessment is to determine the achievement of learning objectives.
4. **Usage**:
   - Formative assessment is used to provide feedback and find out the progress of learners during learning.
   - Summative assessment is used as evidence of what students master.

By understanding these differences, teachers can use both types of assessment effectively in applying the TaRL approach to improve the quality of learning and the achievement of student learning outcomes. Summative assessment in the *TaRL (Teaching at the Right Level) approach* is the process of collecting and processing information used to assess the achievement of learning objectives. Summative assessment can be in the form of a final exam, final project, or closing project. Here are some key points about summative assessment in the TaRL approach:

1. **Implementation Time**: Summative assessment is carried out after the learning process ends to assess the achievement of learning objectives
2. **Assessment Results**: Summative assessment results are used to determine report card scores, class advancements, or other important decisions
3. **Objective**: The purpose of summative assessment is to determine the achievement of learning objectives
4. **Usage**: Summative assessment is used as evidence of what students master and can influence grade progress, or other important decisions understanding the difference between formative and summative assessments in the TaRL approach, teachers can use both types of assessment effectively in applying this approach to improve the quality of learning and the achievement of student learning outcomes.

To implement formative assessment in the TaRL approach, teachers can take the following steps:

1. **Determining Assessment Objectives**: Determine the formative assessment objectives to be achieved, such as monitoring student learning progress, evaluating the learning process, or

providing feedback to students

2. **Determine the Assessment Method**: Choose a formative assessment method that matches the goals you want to achieve, such as Q&A, a short quiz, or a group discussion
3. **Conduct Assessment**: Conduct formative assessments periodically during the learning process to monitor student learning progress and adjust learning
4. **Provide Feedback**: Give feedback to learners on the results of formative assessments and make suggestions to improve their learning skills

Students are more active in asking questions and dare to issues. His opinion in the group is free without any pressure, and able to complete tasks promptly.

a. Increase teachers' understanding of various effective and efficient assessment methods in the learning process.
b. In addition to improving the ability to understand HOTS-based assessment instruments, this training also produces outputs in the form of training modules for the development of HOTS-based assessment instruments, articles in electronic mass media, and PKM activity YouTube. Judging from the results of training that strongly supports learning in schools, it is necessary to carry out similar activities for other schools (Riyadi et al., 2023)
c. Work with fellow teachers to share experiences and ideas about effective assessment.
d. Implement regular formative assessments in the learning process to provide continuous feedback to learners.

Results of research Kurnia (2022) There is a relationship between the provision of formative tests and learning motivation, where the provision of formative tests with categories is quite effective and motivation with high categories. In other words, formative assessment can increase learners' learning motivation. Qualitatively, it turns out that students also give a positive response to the implementation of formative assessment.

Teachers pay more attention to the learning styles of students and understand well the conditions of students when receiving information through the use of learning media that are by the character possessed by students. Learning outcomes are very important to consider to achieve learning objectives that are seen based on factors that affect them, including learning styles and the use of learning media. Learning outcomes have a relationship with visual learning style, auditorial learning style, kinesthetic learning style, and utilization of learning media. Recommendations are addressed to students to further increase their awareness regarding their learning styles. Thus, learning outcomes and objectives can be achieved optimally as expected (Dewi Astiti et al., 2021)

After analyzing various literature studies and interviews, it can be found that:

a. Students are less actively involved in the learning process because the implementation of learning is still conventional
b. Lack of teacher creativity in choosing innovative learning models that suit the subject matter and characteristics of learners.
c. The ability to design innovative learning media is also one of the challenges for me because

I am used to conventional learning and centered on teacher books and student books.

d. Students are less able to work together in groups. One of the must-have abilities of the 21st century is collaboration. The challenge here is that some students do not want to cooperate in groups and only a few students are active in learning activities in the form of groups.

In overcoming obstacles during the process of learning activities, the steps taken by teachers include:

a. Choosing an interesting learning method
b. Applying a learning model that can increase the activeness and understanding of student material, namely the *Problem-Based learning* (PBL) model because this learning model uses contextual problems that are by the real lives of students, so that students feel that the problem is indeed important to solve.
c. Innovative learning is a learning process in students that is designed, developed, and managed creatively and applies various approaches in a better direction to create a fun and student-oriented learning atmosphere and process by using internet intermediaries or digital technology in the implementation of its activities. In this learning activity, I use learning media in the form of *PowerPoint,* Anyflip *application*, interactive video, and LKPD.
d. Teachers divide groups based on their cognitive level or level of understanding and others in the hope that students can work together optimally to achieve learning goals. The role of teachers as guides and motivators is very large here. As a mentor, I ensure that all group members get the opportunity to be involved in working on LKPD.
e. As motivators, teachers often motivate learners to be confident and willing to work together, not blame each other, try their best, and value the process more than the results.

CONCLUSION

The conclusion of the research results was carried out well and went according to plan. Because learning practices using the PBL (problem-based learning) model-based TARL in the 21st century can improve student learning outcomes, the results of the study are used throughout the learning stages of elementary school 4 students. This is confirmed by the learning outcomes available to students, as they have been completed thoroughly. Science Learning Grade 4 students performed well, with an average student score of 82.21 points higher than the Learning Objectives Achievement Standard of 84 percent, or 16 points and 16 percent, which means 3 students have not met the Learning Objectives Achievement Standard. The maximum price is 100 and the lowest price is 41. These percentages indicate that applying the TARL method and problem-based learning (PBL) models to 21st-century learning improves students' critical thinking, problem-solving skills, and intelligence.

REFERENCES

Aisyiyah, A. T. P., & Amrizal, A. (2020). Penerapan Pendekatan Saintifik (Scientific Approach) Dalam Pembelajaran Biologi Sma. *Jurnal Pelita Pendidikan*, *8*(4), 215–223.

https://doi.org/10.24114/jpp.v8i4.20856

Anagün, Ş. S. (2018). Teachers' perceptions about the relationship between 21st-century skills and managing constructivist learning environments. *International Journal of Instruction*, *11*(4), 825–840. https://doi.org/10.12973/iji.2018.11452a

Annisa, Asrin, & Khair, B. N. (2022). Pengaruh Model Pembelajaran Problem Based Learning (PBL) terhadap Hasil Belajar IPA Siswa Kelas IV SDN Gugus I Kecamatan Kuripan Tahun. *Jurnal Ilmiah Bahasa Dan Sastra*, *7*, 620–627.

Audah, N., Zuhri, M., & Jufri, A. W. (2023). Penggunaan Pendekatan Teaching at the Right Level (TaRL) untuk Meningkatkan Sikap Gotong-royong Profil Pelajar Pancasila Peserta Didik Kelas X2 SMAN 1 Mataram Tahun Pelajaran 2022/2023. *Jurnal Ilmiah Profesi Pendidikan*, *8*(4), 2184–2188. https://doi.org/10.29303/jipp.v8i4.1680

BNSP. (2010). *Paradigma Pendidikan Nasional Abad XXI*. Kementrian Pendidikan dan Kebudayaan.

Dakhi, O., Jama, J., Irfan, D., Ambiyar, & Ishak. (2020). Blended Learning: a 21St Century Learning Model At College. *International Journal of Multiscience*, *1*(7), 50–65.

Darmawan, N. H., & Hilmawan, H. (2021). Problem-Based Learning: Can it Improve Higher Order Thinking Skills of Prospective Elementary School Teacher Students? *PRIMARYEDU: Journal of Elementary Education*, *5*(2), 196–209.

Dewi Astiti, N., Putu, L., Mahadewi, P., Suarjana, I. M., & Kunci, K. (2021). Faktor Yang Mempengaruhi Hasil Belajar IPA A R T I C L E I N F O. *Jurnal Mimbar Ilmu*, *26*(2), 193–203. https://ejournal.undiksha.ac.id/index.php/MI

Dewi Cahyono, S. (2022). Melalui Model Teaching at Right Level (TARL) Metode Pemberian Tugas untuk Meningkatkan Motivasi dan Hasil Belajar Peserta Didik. *Teaching at Right Level (TaRL) Model, Assignment Method, Motivation and Learning Outcomes*, *6*(2), 12407–12418.

Evans, D. J. R., & Watt, D. J. (2005). Provision of anatomical teaching in a new British Medical School: Getting the right mix. *Anatomical Record - Part B New Anatomist*, *284*(1), 22–27. https://doi.org/10.1002/ar.b.20065

Kaffenberger, M. (2021). Modeling the long-run learning impact of the COVID-19 learning shock: Actions to (more than) mitigate loss. *International Journal of Educational Development*, *81*(October 2020), 102326. https://doi.org/10.1016/j.ijedudev.2020.102326

Kurnia, A. D. (2022). Implementasi Penilaian Formatif Dalam Pembelajaran Bahasa Inggris Tatap Muka Terbatas Untuk Meningkatkan Motivasi Belajar Siswa. *STRATEGY : Jurnal Inovasi Strategi Dan Model Pembelajaran*, *2*(1), 67–77. https://doi.org/10.51878/strategi.v2i1.887

Marra, R. M., Jonassen, D. H., & Palmer, B. (2014). Why Problem-Based Learning Works : Theoretical Foundations. *Journal on Excellence in College Teaching*, *25*(3/4), 221–238.

Mokoginta, S. O. (2023). Penerapan Model Problem Based Learning (PBL) untuk Meningkatkan Hasil Belajar IPA di Kelas IV SD Negeri 6 Bilalang. *Jurnal Ilmiah Wahana Pendidikan*, *9*(2), 541–549. http://jurnal.peneliti.net/index.php/JIWP/article/view/3680

Mu'minah, I. H. (2021). Studi Literatur: Pembelajaran Abad-21 Melalui Pendekatan Steam

(Science, Technology, Engineering, Art, and Mathematics) dalam Menyongsong Era Society 5.0. *Prosiding Seminar Nasional Pendidikan*, *3*, 584–594.

Newman, M. J. (2005). Problem-Based Learning: An introduction and overview of the key features of the approach. *Journal of Veterinary Medical Education*, *32*(1), 12–20. https://doi.org/10.3138/jvme.32.1.12

Pebriana, R., & Disman. (2017). Effect of Problem-Based Learning On Critical Thinking Skills. *Journal of Primary Edu*, *1*(1), 109–118.

Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta, CV.

Wijaya, E. Y., Sudjimat, D. A., & Nyoto, A. (2016). Transformasi Pendidikan Abad 21 Sebagai Tuntutan. *Jurnal Pendidikan*, *1*, 263–278.