

## APPLICATION OF INNOVATIVE LEARNING IN THE 21ST CENTURY AT SD NEGERI 42 PEKANBARU

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### ARTICLE HISTORY

Received : 20-01-2026

Revised : 07-02-2026

Accepted : 25-05-2026

### KEYWORDS

Innovative learning,  
 21st century, 4Cs,  
 Educational  
 technology, Primary  
 schools

### ABSTRACT

Innovative learning in the 21st century requires teachers to be able to integrate critical thinking skills, creativity, collaboration, communication, and the use of technology into the learning process. This study aims to describe the application of 21st century innovative learning in SD Negeri 42 Pekanbaru, including the strategies used by teachers, obstacles faced, and learning optimization efforts. The research uses a descriptive qualitative method with data collection techniques through observation, interviews, and documentation, as well as validation using triangulation. The results show that teachers have understood the 4C principles and tried to apply them through active learning models such as Problem Based Learning (PBL) and simple projects. However, implementation is still limited by the constraints of technology facilities, teachers' ICT skills, and the limitations of operational indicators in the lesson plan and assessment rubric. Nevertheless, authentic assessments in the form of projects and portfolios began to be implemented and received a positive response from students. This research emphasizes the importance of teacher training support, strengthening ICT facilities, and consistency in the application of assessment rubrics so that innovative learning in the 21st century can run optimally in elementary schools.

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### INTRODUCTION

Learning is the core of the educational process which plays an important role in determining the learning success of students. Basically, learning is not just the process of delivering material from teachers to students, but also an interaction process involving various components, such as teachers, students, learning objectives, methods, and learning environments. (Maskiah, 2016) states that learning is a process of cooperation between educators and students by utilizing existing potential, both from within students such as interests, talents, basic abilities, and learning styles, as well as from outside such as the environment, facilities, and learning resources. Therefore, learning can be understood as a process of providing guidance that aims to help students to be able to develop their potential and knowledge optimally.

Ideally, learning in elementary school should be able to create an active, creative, effective, and fun learning atmosphere. Teachers not only play the role of delivering material, but also as facilitators who are able to direct and guide students in the learning process. Good learning should be student-centered, so that students are not only recipients of information, but also active in discovering and building their own knowledge. In addition, learning also needs to be adjusted to the characteristics of students, so that it can accommodate differences in students' abilities, interests, and learning styles.

Along with the times, the world of education is faced with 21st century challenges that require students to have various important skills, such as critical thinking, creativity, collaboration, and communication (4C). These skills are very important because they are related to the ability of students to deal with the increasingly rapid development of science and technology. Therefore, learning carried out in school is no longer enough if it only focuses on mastering the material, but must also be able to develop these skills. This requires teachers to be able to design and implement innovative learning, so that the learning process becomes more meaningful and relevant to the needs of students.

Innovative learning is one of the approaches that can be used to answer these demands. (Magdalena, 2020) explained that innovative learning is a learning process that is designed differently from conventional learning, with the aim of solving learning problems based on the conditions in the classroom. (Hapsari et al., 202) also stated that innovative learning is a form of new ideas or techniques that are able to facilitate students to obtain progress in the learning process and outcomes. In addition, (Purwadhi, 2019) emphasized that innovative learning requires teachers' creativity in packaging learning so that it is not monotonous and more attractive to students. Thus, innovative learning focuses not only on the methods used, but also on how teachers are able to create a fun, interactive, and meaningful learning experience for students.

In addition to innovative learning, the use of technology is also an important part of 21st century learning. Technology can help teachers in delivering material in a more interesting and interactive way, as well as providing a wider learning experience to students. (Mashudi, 2021) states that technology in learning not only functions as a tool, but also as a means to develop students' learning experiences. By utilizing technology, learning can be done more flexibly, and can increase student motivation and involvement in the learning process. Therefore, teachers are required to have the ability to utilize technology as part of a learning strategy.

However, these ideal conditions have not been fully realized in the field. Based on the results of the pre-research conducted through an interview with Mrs. Dessy Sarti, S.Pd., a second grade homeroom teacher at SD Negeri 42 Pekanbaru on March 2, 2023, it is known that teachers actually understand the concept of 21st century learning and the importance of innovative learning. Some teachers have also tried to implement a variety of different learning strategies. However, in its implementation there are still various obstacles that hinder it. One of the main obstacles is the limited number of supporting facilities, such as computers, infocus, and inadequate internet access. In addition, there are still teachers, especially senior teachers, who are not used to using technology in learning. This causes technology-based learning to not be applied optimally.

In addition to facility constraints, teachers' ability to integrate technology into innovative learning models is also still limited. Learning models such as Problem Based Learning (PBL) and Project Based Learning (PJBL) are actually very relevant to be applied in 21st century learning because they are able to encourage students to think critically and work together. However, in practice, the implementation of the model has not been optimally carried out because teachers still have difficulties in designing and implementing appropriate learning. As a result, learning that should be student-centered and interactive becomes less than optimal.

These problems are in line with several previous studies. (Sari, 2021) stated that blended learning requires adequate technological support to run well. (Rohyati, 2022) also explained that the Problem Based Learning (PBL) model is effective in improving the quality of learning, but requires teacher readiness in its implementation. In addition, (Sahari, 2020) shows that the use of innovative learning media can increase the effectiveness of learning in elementary schools. Another study by Putra & Rahmawati (2021) found that technology-based Project Based Learning (PJBL) can increase students' creativity and collaborative abilities. Lestari et al. (2022) also emphasized that the integration of technology in innovative learning can increase students' motivation to learn.

However, most of the research focuses more on the effectiveness of learning models or media, and has not discussed in depth how to implement innovative learning in the 21st century in elementary schools that have limited facilities and teacher competencies. In fact, this condition is a reality that occurs in many schools. Therefore, research is

needed that can provide a real picture of how innovative learning is applied in limited conditions, as well as how efforts teachers make to overcome these obstacles.

Based on this description, this research is important because it can contribute to the development of learning practices in elementary schools, especially in the application of innovative learning in the 21st century. The novelty of this research lies in the focus of the study that not only looks at the application of innovative learning, but also examines the strategies used by teachers, the obstacles faced, and the efforts made to optimize the learning process in real conditions in the field.

The purpose of this research is to describe the application of 21st century innovative learning in SD Negeri 42 Pekanbaru, which includes the learning strategies used by teachers, the obstacles faced in the implementation of learning, and the efforts made to overcome these obstacles so that the learning process can run more optimally.

## RESEARCH METHODS

This research uses a descriptive qualitative method. This method was chosen because it is in accordance with the purpose of the research, which is to describe in depth the application of innovative learning in the 21st century and the obstacles faced in its implementation at SD Negeri 42 Pekanbaru. The descriptive qualitative approach focuses on depicting phenomena as they are in the field without the manipulation of variables, so that researchers can understand the real conditions that occur more comprehensively. In this study, the researcher acts as the main instrument that is directly involved in the data collection process.

The research was carried out at SD Negeri 42 Pekanbaru which is located at Jalan Adi Sucipto No. 01 Pekanbaru. The selection of the research location was based on the results of initial observations that showed that teachers had understood the concept of 21st century learning, but the implementation was not optimal. This is due to the limitations of technological facilities and obstacles in adapting to the use of technology, especially for some senior teachers. This condition makes this school relevant as a research location to examine the application and obstacles to innovative learning in the 21st century.

The data in this study consists of primary data and secondary data. Primary data was obtained through interviews with grade II teachers and the results of observation of the learning process in the classroom. Secondary data was obtained from supporting documents such as school profiles, vision and mission, learning tools (syllabus and lesson plans), and documentation of learning activities. The main data sources in this study are grade II teachers as key informants, while additional data sources come from relevant school documents and archives.

The data collection techniques used include observation, interviews, and documentation. Observations are made to get a direct picture of the learning process in the classroom. The interviews were conducted to dig up in-depth information related to teachers' strategies, experiences, and constraints in implementing 21st century learning. Documentation is used as complementary data in the form of notes, photos, and other relevant documents. The research instruments used included observation sheets, interview guidelines, and documentation review formats.

The grid of research instruments is arranged as follows:

No	Indicator	Sub Indicator	Interview	Observations	Documentation
1	21st Century Learning Planning	Preparation of syllabus/lesson plan based on 4C	✓	✓	✓
		Integration of technology in learning	✓	✓	✓
		Preparation of innovative assessment rubrics	✓	✓	✓
2	Implementation of 21st Century Learning	Use of active methods (PBL, Inquiry)	✓	✓	-
		Facilitation of critical thinking and collaboration	✓	✓	-
		Utilization of interactive media/technology	✓	✓	✓
3	21st Century Learning Evaluation	Project/portfolio assessment	✓	✓	✓
		Individual and group feedback	✓	✓	✓

(Adapted from Prayoga et al., 2021)

To ensure the validity of the data, this study uses triangulation techniques. Triangulation is carried out in three ways, namely technique triangulation, source triangulation, and time triangulation. Technical triangulation was carried out by comparing observation, interview, and documentation data. Source triangulation is carried out by comparing the

information obtained from the teacher with the available document data. Meanwhile, time triangulation is carried out by checking the data at different times to ensure the consistency of the information obtained. With this technique, the resulting data becomes more valid and trustworthy.

The data analysis technique in this study uses an interactive analysis model consisting of three stages, namely data reduction, data presentation, and conclusion drawn. Data reduction is carried out by selecting, summarizing, and focusing data relevant to the research, especially related to the application and barriers to 21st century learning. The presentation of data is carried out by systematically arranging data in the form of a narrative so that it is easy to understand. Furthermore, conclusions are drawn by interpreting the data that has been analyzed and verifying the findings through a triangulation process, so that accurate conclusions are obtained and in accordance with conditions in the field.

With this method, the research is expected to be able to provide a clear and factual picture of the application of innovative learning in the 21st century and the obstacles faced in its implementation at SD Negeri 42 Pekanbaru.

## RESEARCH RESULTS

This research was carried out at SD Negeri 42 Pekanbaru (Jalan Adi Sucipto No.01 Pekanbaru) using a descriptive qualitative approach. Data was obtained through classroom observation, in-depth interviews with grade II teachers (key informants), and documentation review (syllabus/RAK, lesson plans, rubrics, photos of activities, student portfolios). Data triangulation (observation — interviews — documentation) is used to improve the validity of the findings. The analysis is carried out interactively through data reduction, data presentation, and conclusion drawn. This study aims to describe in depth the application of 21st century innovative learning in SD Negeri 42 Pekanbaru which includes aspects of planning, implementation, and evaluation of learning, as well as obstacles and optimization efforts carried out by teachers. Data were obtained through direct observation of learning, in-depth interviews with grade II teachers, and analysis of learning documentation (RAK, RPP, assessment rubrics, student portfolios, and photos of activities). The validity of the data is maintained through triangulation of techniques and sources. The following is a presentation of the research results:

### 1. 21st Century Learning Planning

Learning planning is the initial stage that greatly determines the direction and quality of the learning process in the classroom. In the context of 21st-century learning, planning is no longer only understood as an administrative activity to meet the demands of the curriculum, but also a strategic process in designing learning experiences that are able to develop high-level thinking skills, social skills, and students' readiness to face real-life challenges. Therefore, 21st century learning planning ideally includes the integration of 4C (critical thinking, creativity, collaboration, and communication) skills, meaningful use of technology, and an authentic and sustainable assessment system. Based on the results of research conducted through observations, interviews, and documentation, it can be seen that teachers at SD Negeri 42 Pekanbaru have shown efforts in leading to 21st century learning planning. However, if analyzed more deeply, there are still some gaps between conceptual understanding, written planning, and implementation in the field.

#### a. Preparation of 4C-Based Syllabus/RPP

From the results of the interviews, the teacher showed a fairly good understanding of the concept of 21st century learning. Teachers realize that learning today is not enough to focus only on delivering material, but must also provide opportunities for students to think, discuss, collaborate, and convey ideas. This understanding is an important starting capital, because it shows that teachers already have awareness of the change in the learning paradigm. In the practice of preparing lesson plans, teachers stated that they tried to incorporate elements of the 4Cs through various activities, such as group discussions, questions and answers, and the assignment of simple problem-based assignments. This shows that teachers have tried to translate the 4C concept into learning activities. However, teachers also admit that in compiling the lesson plan, they still often use examples or templates that are already available, then adjust them to the conditions of the class. On the one hand, this is helpful in terms of time efficiency, but on the other hand it can make planning less specific and less reflective of the real needs of students in the classroom.

The results of the analysis of the RPP document show that the 4C element has indeed been included, especially in the core activities section. However, the learning indicators that have been compiled still tend to be general and not yet operational. For example, indicators such as "students are able to think critically" have not been elaborated into concrete, observable behaviors, such as the ability to identify problems, provide logical reasons, or compare alternative solutions.

This condition shows that learning planning is still at the conceptual stage, not yet fully entering the technical-

operational stage. As a result, there is potential for difficulties in conducting assessments, because the indicators used are not clear and measurable. Interestingly, the results of the observations show that in learning practice, teachers are able to present activities that lead to the development of the 4Cs. Students are seen being active in group discussions, trying to answer challenging questions, and engaging in simple problem-solving activities. This shows that in practice, teachers are quite capable of applying 21st century learning. Thus, it can be seen that there is a missynchronization between written planning and practice in the classroom. Planning has not fully described what teachers actually do. This indicates that teachers' pedagogical abilities in practice have developed, but have not been followed by the ability to design learning systematically.

If viewed from the results of triangulation, it can be concluded that the integration of the 4Cs in planning already exists, but is still general, has not been consistent between documents, and has not been supported by clear indicators. Therefore, it is necessary to strengthen the aspect of preparing lesson plans, especially in formulating indicators that are more specific, measurable, and in accordance with the designed learning activities.

#### b. Integration of Technology in Learning

In 21st century learning, technology has a very important role, not only as an aid, but also as a means to create learning that is more interactive, flexible, and relevant to students' lives. Therefore, technology integration should be carefully planned in the lesson plan. Based on the results of the interview, the teacher stated that the use of technology has been carried out in learning, especially through the use of PowerPoint and learning videos. The teacher also said that the visual media was quite effective in attracting students' attention and helping them understand the material.

The observation results show that the use of technology has indeed become part of learning. Teachers use projectors to display materials and videos, and students look more focused when learning uses visual media. However, if analyzed more deeply, the use of technology is still one-way. Students have not been actively involved in the use of technology, for example to search for information, process data, or create digital products. In other words, technology still functions as a tool to assist teachers in delivering material, not as a learning medium for students. From the results of the documentation, it can also be seen that the RPP includes the use of technology, but it is not accompanied by detailed planning. There is no explanation of how the technology is used in student activities, or how it can support the achievement of learning objectives.

Teachers also revealed that there are obstacles in the use of technology, especially related to limited facilities and infrastructure. The unavailability of devices for every student is a major obstacle. In addition, the ability to use technology also still needs to be improved, especially for teachers who are not used to it. If analyzed more broadly, this condition shows that technology integration is still in its early stages. Technology has not been optimally utilized to support active, student-centered learning. In fact, if used appropriately, technology can be an effective means to develop critical thinking skills, creativity, and independent learning. Based on the results of triangulation, it can be concluded that the integration of technology in learning planning already exists, but it is still simple and has not led to interactive learning. Therefore, improvements are needed both in terms of planning and facility support so that technology can be used more optimally.

#### c. Preparation of Innovative Assessment Rubric

Assessment is an important part of learning planning, as it is the basis for knowing the extent to which learning objectives have been achieved. In 21st-century learning, assessment focuses not only on the final outcome, but also on the learning process of students, including the ability to think, collaborate, and communicate.

Based on the results of the interviews, teachers stated that they have tried to implement authentic assessments, such as project-based and portfolio-based assessments. The teacher also assesses the attitude of students during the learning process. The observation results showed that teachers did make assessments during learning, especially when students were discussing or doing group assignments. However, the assessment is still general and has not used detailed instruments.

From the documentation, it can also be seen that the assessment rubric used is still simple. The criteria used are not specific, so it has the potential to cause subjectivity in the assessment. In addition, the student portfolio has also not been systematically compiled and has not shown the development of students' abilities in a sustainable manner. This condition shows that although teachers already understand the importance of authentic assessment, in practice it is still not optimal. The assessment has not been able to provide an accurate picture of the student's abilities. Based on the results of triangulation, it can be concluded that the preparation of innovative assessment rubrics has begun to be carried out, but it still needs to be further developed. There is a need for the preparation of clear indicators, consistent use of rubrics, and

more systematic documentation of assessment results

Overall, 21st century learning planning at SD Negeri 42 Pekanbaru shows quite good development. Teachers already have the right conceptual understanding and have begun to implement it in learning. However, there are still several things that need to be improved, especially in the technical aspect of planning. Planning is still not fully systematic, learning indicators have not been measured, technology integration is still limited, and the assessment system is not optimal. Thus, it can be concluded that learning planning is in the right direction, but it still needs to be strengthened to be more structured, consistent, and able to support 21st century learning to the maximum.

## 2. Implementation of 21st Century Learning

The implementation of learning is the most crucial stage in the entire educational process, because it is at this stage that all the pre-prepared planning is really tested in practice in the classroom. In the context of 21st century learning, the implementation of learning does not only emphasize the delivery of material, but rather on how teachers are able to create meaningful learning experiences, encourage active student engagement, and develop high-level thinking skills and social skills. Based on the results of observations, interviews, and documentation, the implementation of learning at SD Negeri 42 Pekanbaru shows a shift from teacher-centered learning to more student-centered learning. This shift can be seen from the use of active methods, student involvement in group discussions, and teachers' efforts to provide space for students to think and opinion. However, if analyzed more deeply, the implementation of 21st century learning is still not fully optimal and is still in the transition stage.

### a. Use of Active Methods (Problem-Based Learning and Inquiry)

The use of active learning methods is one of the main indicators in the implementation of 21st century learning. Based on the results of observations, teachers have applied the Problem-Based Learning (PBL) approach in several learning activities. Learning usually begins with providing problems that are contextual and close to students' daily lives, so that students can more easily understand and be involved in the learning process. In practice, students are divided into several small groups to discuss solutions to the given problems. This activity shows that teachers have tried to create learning that is not only one-way, but actively engages students in the thinking process.

The results of interviews with teachers showed that the use of PBL was carried out with the aim of increasing students' activeness and thinking ability. Teachers realize that the lecture method alone is not enough to develop students' abilities optimally, so a more interactive approach is needed. From the student side, they also showed a positive response to this method. Students find it easier and easier to understand the material when learning is done through discussion and problem-solving. This shows that the active method has a significant impact on student motivation and engagement.

However, if analyzed more deeply, the implementation of PBL still has some limitations. One of the obstacles that can be seen is the lack of a clear structure in the problem-solving process. Students are indeed given problems to discuss, but they have not been fully directed through systematic stages, such as problem identification, analysis, solution exploration, and reflection. In addition, in some situations, teachers still use the lecture method as part of learning. This suggests that the shift towards active learning has not been completely consistent. The active method is still used partially and has not yet become the main approach in every learning. If it is associated with the inquiry approach, the implementation has not been seen optimally. Students have not been fully given the opportunity to explore independently, such as searching for information from various sources or conducting simple investigations. The activities carried out are still limited to group discussions, not yet to the in-depth inquiry process. Thus, it can be concluded that the use of active methods has become an important part of learning, but it still needs to be strengthened in terms of consistency and depth of application in order to really be able to develop students' thinking skills optimally.

### b. Facilitation of Critical Thinking, Creativity, Collaboration, and Communication (4C)

The implementation of 21st century learning is inseparable from the development of 4C skills. Based on the results of the study, teachers have tried to facilitate these four skills in learning, although the success rate still varies. In the critical thinking aspect, teachers provide triggering questions that aim to stimulate students to not only receive information, but also think about and analyze it. The questions given are usually related to the students' daily experiences, making them easier to understand.

From the observation results, it can be seen that students are starting to show critical thinking skills, such as trying to answer questions and give opinions. However, the answers given still tend to be simple and have not shown an in-depth analysis. Students also still need direction from teachers to develop their thinking. This shows that students' critical

thinking skills are still in the early stages, namely the stage of understanding and answering, not yet at the stage of analyzing or evaluating in depth.

In the aspect of creativity, teachers give tasks that allow students to produce products, such as making posters or mind maps. This activity provides a space for students to express their ideas. However, the creativity that emerges is still limited. Students tend to follow the examples given by the teacher, so the results obtained have not shown significant variation. This shows that students' creativity has not been optimally developed and still needs to be encouraged through more open tasks.

In the aspect of collaboration, students seem quite active in working in groups. They discuss with each other, share tasks, and help each other. This shows that collaboration skills have begun to develop. However, if observed further, the collaboration that occurred has not been fully effective. There are still students who are passive and only follow more active friends. In addition, the division of roles in the group is not yet clearly visible, so the contribution of each member is not balanced. In the communication aspect, students are given the opportunity to present the results of the discussion in front of the class. However, students' communication skills still need to be improved. Not all students dare to speak, and the expression of opinions is still not well structured. If viewed as a whole, the four aspects of the 4Cs have begun to be seen in learning. However, the implementation is still uneven and has not reached the optimal level. This shows that 21st century skill development still needs to be carried out in a more targeted and systematic manner.

### c. Utilization of Media and Technology in Learning

The use of technology in learning is one of the main characteristics of 21st century learning. Based on the results of observations, teachers have used technology such as projectors, PowerPoints, and learning videos. The use of visual media has been proven to be able to increase students' attention and interest in learning. Students look more focused and enthusiastic when learning using video compared to the lecture method. However, if analyzed more deeply, the use of technology is still one-way. Students are only recipients of information, without any direct interaction with technology. Technology has not been used as a tool for exploration or creation.

The results of the interviews also show that students rarely use technology directly in learning. This is due to limited facilities and the lack of learning planning that involves students in the use of technology. In terms of facilities, schools still have limitations in providing technological devices. This is one of the main factors that hinder the optimal implementation of technology-based learning. This condition shows that the use of technology is still at the basic stage, namely as a tool to assist teachers in delivering material. Technology has not been utilized to the fullest to support active, student-centered learning.

If analyzed thoroughly, the implementation of 21st century learning at SD Negeri 42 Pekanbaru shows a positive development. Teachers have tried to implement active methods, facilitate 4C skills, and use technology in learning. However, the implementation is still not fully optimal. There are several gaps between the concept of 21st century learning and practice in the field, such as: Active methods have not been applied consistently, Student involvement has not been evenly distributed, Technology has not been used interactively, High-level thinking skills have not been developed to the maximum. This shows that learning is still in the transition stage to ideal 21st century learning.

Based on the results of data triangulation, it can be concluded that the implementation of 21st century learning at SD Negeri 42 Pekanbaru has shown a positive direction, especially in the use of active methods and the development of student collaboration. However, there is still a need to strengthen several aspects, such as consistency of methods, equitable distribution of student participation, and the use of more interactive technology. Thus, the implementation of learning is on the right track, but it still needs further development in order to achieve the goals of 21st century learning optimally and sustainably.

### 3. Evaluation of 21st Century Learning (In-Depth Critical Analysis)

Learning evaluation in the context of the 21st century should no longer be interpreted as an administrative final activity, but as an integral part of the learning process that functions to monitor, reflect, and improve the quality of student learning on an ongoing basis. Thus, evaluation is not only oriented to the measurement of results, but also to the development of students' thinking processes, social skills, and reflective abilities. Based on the results of observations, interviews, and documentation, the evaluation of learning at SD Negeri 42 Pekanbaru has shown a paradigm shift from traditional assessment to more authentic assessment. However, if analyzed critically, these shifts are still partial and have not been fully internalized in a structured evaluation system. This indicates that evaluation practices are still at the

adaptation stage, not at the mature implementation stage.

a. Project and Portfolio Assessment

Project-based assessments implemented in learning demonstrate an effort to accommodate authentic assessments. Students are involved in activities that require them to produce products while also processing in groups, so that assessments focus not only on the final results, but also on the dynamics of learning. However, if analyzed more deeply, the assessment practices of the project still face fundamental problems related to the validity and reliability of the assessment. The absence of an operational rubric causes the assessment to tend to depend on the subjective perception of the teacher. This has implications for the low consistency of assessments, especially when it comes to distinguishing achievements between students who have relatively similar work quality.

In addition, the absence of specific indicators in assessing aspects such as creativity, collaboration, and product quality shows that the assessment is not criterion-referenced, but is still normative and impressive. This condition has the potential to obscure the meaning of student learning outcomes, because assessments do not really represent the competencies that are to be measured. In the context of portfolios, the most prominent weakness lies in the absence of a sustainable documentation system. The portfolio has not been used as a tool to record student learning progress longitudinally, but only as a collection of incidental work results. This shows that the portfolio's function as a reflective and diagnostic instrument has not been optimally utilized. Critically, this condition indicates that the authentic assessment applied is still at the surface level, i.e. limited to the variation of methods, not at the conceptual level that emphasizes the quality of the measurement and the meaning of the evaluation itself.

b. Individual and Group Feedback

Providing feedback in learning shows that teachers are aware of the importance of formative evaluation. Feedback provided directly during the learning process is able to help students understand mistakes and make corrections immediately. However, if analyzed more closely, the feedback practice is still reactive and has not been designed as a systematic pedagogical strategy. Feedback tends to appear as a spontaneous response to a situation in the classroom, rather than as part of a planned learning design.

The absence of written documentation in providing feedback shows that the process of student learning reflection has not been optimally facilitated. In fact, in 21st century learning, feedback should not only serve as a correction, but also as a reflection tool that allows students to monitor their learning progress independently. In addition, the uneven distribution of feedback indicates participation bias, where active students tend to get more attention than passive students. This has the potential to widen the learning gap between students, because students who actually need guidance do not get adequate intervention. Analytically, this condition shows that the feedback function as a formative assessment has not been fully optimized. Feedback still plays a role as a complement to learning, not yet as the main instrument in directing the student learning process.

c. Evaluation of 21st Century Skills (4C)

Teachers' efforts in assessing 21st century skills show an awareness of the importance of developing non-cognitive competencies. Assessments of collaboration, critical thinking, creativity, and communication have begun to be carried out through observation and learning activities. However, if analyzed in depth, the assessment of the 4C skills is still implicit and has not been operationalized in measurable indicators. The absence of specific instruments causes assessments to tend to be global and unable to distinguish the level of student mastery in detail. For example, collaborative assessments are based solely on the activeness of students in the group, without considering the quality of interaction, role-sharing ability, or contribution to task completion. Similarly, critical thinking assessments have not been able to distinguish between reproductive answers and analytical answers.

This condition shows that there is a gap between 21st century learning objectives and evaluation practices in the field. Although 4C skills have become part of learning, they have not been fully integrated into a valid and measurable assessment system. Critically, this indicates that evaluation is still oriented to activities, not to competencies. This means that what is assessed is what the student does, not the quality of the ability that the student has. If reviewed comprehensively, the evaluation of learning at SD Negeri 42 Pekanbaru is in the transition phase from traditional assessment to authentic assessment. There have been real efforts to change evaluation practices, but these changes have not been followed by reinforcement on conceptual and technical aspects. The main problem that arises is not a lack of innovation, but a lack of optimal implementation quality. This can be seen from: the absence of clear assessment

standards, the inconsistency in the use of evaluation instruments, and the lack of integration of evaluation with the objectives of learning in general.

This condition shows that the main challenge in the implementation of 21st century learning is not only in the implementation aspect, but also in the ability of teachers to design and manage a quality evaluation system. Based on the results of triangulation and analysis, it can be concluded that learning evaluation has shown a direction that is in line with 21st century learning principles, especially in the use of authentic assessments and feedback. However, the implementation of evaluation still requires significant strengthening, especially in terms of: the development of assessment rubrics, a sustainable portfolio documentation system, a systematic and equitable feedback strategy, indicator-based 4C skills measurement. Thus, learning evaluation needs to be improved not only on the technical aspect, but also on conceptual understanding in order to be able to support 21st century learning more effectively and sustainably.

## DISCUSSION

The results of the study show that the implementation of 21st century learning at SD Negeri 42 Pekanbaru has experienced significant development, although its implementation is still at the transition stage towards more optimal and systematic learning. In general, teachers have understood the basic concepts of 21st century learning which are characterized by efforts to integrate the 4C skills (critical thinking, communication, collaboration, and creativity), the use of technology, and the application of authentic assessments in the learning process. However, the results of the study show that there is still a lack of synchronization between the stages of planning, implementation, and evaluation of learning. In some conditions, learning practices in the classroom are actually more developed than the planning documents and evaluation systems used. These findings suggest that learning transformations have begun to take place, but are not yet fully structured in a systematic and sustainable manner.

At the planning stage, teachers have tried to organize learning that leads to the development of 21st century skills through the integration of 4C elements in the lesson plan. However, the integration is still general and has not been elaborated into operational and measurable indicators. As a result, there is a gap between written planning and the learning practices that take place in the classroom. This condition shows that conceptually teachers have understood the importance of student-centered learning, but technically still have difficulty translating these concepts into systematic and contextual learning designs. In addition, the use of uniform lesson plan templates causes learning planning to not reflect the specific needs and characteristics of students.

The findings are in line with the research of van Laar et al. (2020) who stated that 21st century skills must be explicitly designed in learning objectives, activities, and assessments for their implementation to be effective. According to the study, learning indicators must be able to describe concrete student behavior that can be observed and measured so that competency achievements can be assessed objectively. In addition, the OECD (2020) emphasizes that the 21st century curriculum requires an integration between learning objectives, processes, and evaluations so that student competency development can take place optimally. Thus, indicators that are still general as found in this study show that learning planning has not fully supported the systematic implementation of 21st century learning.

At the implementation stage, the results of the study show that learning has begun to lead to student-centered learning. Teachers apply active methods such as group discussions and Problem-Based Learning (PBL) to increase student involvement in the learning process. Students appear to be more active, enthusiastic, and show a positive response when faced with problem-based learning. This condition shows that the learning environment that has been built has provided space for students to think, interact, and work together. However, the implementation of this method has not been carried out consistently. In some situations, teachers still use the lecture method as the main approach so that active learning has not fully become a learning culture in the classroom.

The findings are in accordance with the research of Dolmans et al. (2021) who explained that Problem-Based Learning is effective in developing high-level thinking skills when applied through systematic stages, ranging from problem identification, investigation, discussion, to reflection. In this study, these stages have not been applied comprehensively so that the potential of PBL in improving students' critical thinking skills has not been optimal. In addition, Care et al. (2020) emphasized that 21st century skill development requires a structured, sustainable, and consistent learning design so that critical thinking, communication, collaboration, and creativity skills can develop optimally. Therefore, the success of the implementation of 21st century learning is greatly influenced by the consistency of teachers in implementing active learning on a continuous basis.

The 4C skills in this study are also beginning to be seen in the learning process, especially through discussion activities and group work. However, students' critical thinking skills and creativity are still relatively limited. Students'

answers tend to be simple and have not shown in-depth analysis, while students' creativity still depends on the examples provided by the teacher. In the aspect of collaboration, student participation is not even because there are still passive students in the group. Meanwhile, students' communication skills have not developed optimally because not all students have the courage to express their opinions in a structured manner. This condition shows that the development of 4C skills is still in its early stages and requires habituation and more in-depth learning strategies.

If associated with previous theories, this condition reinforces the view of Care et al. (2020) who stated that 21st century skills cannot develop instantaneously, but rather require an integrated and continuous learning process. In addition, the OECD (2025) explains that 21st century skills are closely related to high-level thinking skills, problem-solving, adaptation to complex situations, and the ability to work together in social and digital environments. Thus, 4C skills can only develop optimally if teachers consistently provide opportunities for students to think critically, collaborate, communicate, and create new ideas in various learning activities.

In terms of technology utilization, research shows that technology has been used in learning, but it is still limited as a tool for delivering materials. The use of media such as PowerPoint and learning videos is indeed able to increase students' attention and motivation, but it has not actively involved students in the use of technology to explore knowledge, collaborate, and produce works. This condition shows that technology has not been used optimally as a means of meaningful learning. The limited school facilities and teachers' digital competence are the main factors that affect the implementation of technology in learning.

This finding is in line with the OECD (2021) which explains that technology in 21st century learning should not only function as a medium for delivering information, but also as a means to build digital literacy, creativity, communication, and student collaboration. In addition, Falloon (2020) emphasized that effective technology integration must be able to encourage active student involvement in the learning process, not just as recipients of information. Therefore, the use of technology that is still passive in this study shows that the integration of technology in learning has not fully met the characteristics of 21st century learning.

At the evaluation stage, the results showed that teachers began to implement authentic assessments through projects and portfolios. This shows that there is a teacher's awareness of the importance of assessing the learning process and outcomes of students as a whole. However, the implementation of the authentic assessment still faces various obstacles, especially related to the clarity of criteria and the consistency of the assessment. The rubric used is still simple and has not been able to measure students' skills specifically, so assessments tend to be subjective. In addition, the portfolio has not been systematically managed as a tool to monitor students' learning progress on an ongoing basis.

The findings are in line with the research of Foster and Piacentini (2023) who stated that authentic assessments must be based on clear criteria, relevant to competencies, and able to objectively measure students' complex skills. 21st century assessments require operational instruments in order to achieve the validity and reliability of assessments. In addition, Panadero et al. (2021) explain that the use of clear rubrics can help teachers evaluate more consistently and transparently. Thus, the weakness in the preparation of the rubric as found in this study causes the evaluation process to not be able to provide an accurate picture of the achievement of students' 21st century skills.

In addition, the feedback given by teachers is still spontaneous and has not been structured systematically. While feedback can help students correct mistakes directly, it is not evenly distributed and has not been geared towards encouraging student learning reflection. This condition is in line with the research of Wisniewski et al. (2020) which affirms that effective feedback must be specific, sustainable, and able to help students understand the steps that need to be taken to improve their learning outcomes. Therefore, the unstructured feedback in this study shows that the evaluation function as a means of improving the quality of learning has not been running optimally.

Overall, the results of the study show that the implementation of 21st century learning in SD Negeri 42 Pekanbaru has been in the direction that is in accordance with the demands of modern education. However, its implementation still requires strengthening, especially in the aspects of planning, implementation, and evaluation of learning. If associated with previous theories, the main problem lies not in the lack of teacher innovation, but in the lack of optimal quality of systematic and sustainable learning implementation. The findings of this study are also supported by the research of Mustika et al. (2025) which states that the success of 21st century learning in elementary schools is greatly influenced by the ability of teachers to manage active learning, the use of innovative learning media, and the use of technology that suits the needs of students. In addition, Mustika et al. (2025) emphasized that improving teacher competence and supporting school facilities are important factors in creating effective and skill-development-oriented learning for the 21st century. Therefore, it is necessary to improve teachers' competence in designing operational learning, implementing active learning consistently, and developing a valid and measurable evaluation system so that 21st century learning is not only understood

as a concept, but is actually implemented effectively in educational practices in elementary schools.

## CONCLUSION

Based on the results of the research, it can be concluded that the implementation of 21st century learning at SD Negeri 42 Pekanbaru has shown good development. Teachers begin to implement 4C skills, active learning methods, technology utilization, and authentic assessments. However, the implementation is still not optimal. At the planning stage, learning indicators are still general and have not been measured. In implementation, active methods have not been applied consistently and deeply. Meanwhile, in evaluation, authentic assessments have not been supported by rubrics and a structured assessment system. This study has limitations because it was only conducted in one school and has not studied in depth the influence of learning on student learning outcomes. Based on these findings, teachers are advised to improve the quality of planning, implement active learning consistently, and develop more objective and structured evaluations. In addition, school support through teacher competency improvement and the provision of learning facilities are also needed to support the success of 21st century learning.

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