JURNAL PENDIDIKAN & PENGAJARAN GURU SEKOLAH DASAR *Volume 6, Number 1, March 2023, Page 110-118*
http://journal.unpak.ac.id/index.php/jppguseda, e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

ANALYSIS OF 21ST CENTURY SKILLS THROUGH THEMATIC LEARNING IN ELEMENTARY SCHOOLS

Fitri Siti Sundari[1)], Lina Novita[2)], Eka Herlina[3)]

[1,2,3)]Universitas Pakuan, Bogor, Indonesia
E-mail: fitri.siti.sundari@unpak.ac.id

Abstract. *21st century skills are skills related to critical thinking skills and are learning behaviors related to problem solving. The development of the 21st century is characterized by the sophistication of the field of technology, this sophistication has an impact on a variety of information that can be accessed quickly by anyone and anywhere. Skills in the 21st century are needed so as not to be left behind by developments in science and technology. Therefore teachers must have creativity and innovation in managing learning, so that students can develop their abilities in facing the 21st century. This study aims to analyze 21st century skills in learning. Qualitative description method is used to present the findings. Data collection techniques used observation sheets, interviews, and documentation studies on learning tools, especially lesson plans. Data processing was carried out using triangulation techniques, where data were analyzed, reduced, and described. The results of the analysis of the observation of the learning process found that teachers have carried out learning that leads to higher-order thinking skills and 21st century skills. Even so, teachers are still unable to apply all 4C skills in learning activities. This happens because teachers do not fully understand 21st century skills and assume that these skills are the same as higher order thinking. Therefore efforts are needed to develop teacher abilities through training or workshops on 21st Century skills..*

Keywords: *21st Century_Skills; 4C;RPP; thematic*

I. INTRODUCTION

The development of the 21st century is characterized by the sophistication of the field of technology, this sophistication has an impact on a variety of information that can be accessed quickly by anyone and anywhere. Skills in the 21st century are needed so as not to be left behind by advances in the development of science and technology. Three skills that must be possessed in the 21st century according to p21 (Partnership for 21st Century Learning) in [1] namely: (1) Life and Career Skills, (2) Learning and Innovation Skills-4Cs, and (3) Information, Media and Technology Skills. More specifically for learning and innovation skills, there are 4 competencies that must be possessed (known as 4C), namely: Communication, Collaboration, Critical Thinking, and Creativity. Therefore, students are expected to be able to master the skills to communicate, collaborate, think critically and also have creativity so that later they can follow the development of science and technology [2].

In the development of the 21st century, students acquire rapid technological sophistication, so that students can get information quickly. That way, students must be able to critically filter the information obtained so that students can distinguish between correct information and incorrect information. In order to be able to think critically, students must have higher-order thinking skills. Someone who has higher-order thinking skills will be able to apply new information or knowledge to manipulate information in an effort to find possible solutions or answers to new problems [3]. In everyday life there are various complex problems and each has various solutions and criteria. These problems are interpreted and analyzed first so that alternative solutions can be found. Higher-order thinking skills are needed so that students can solve problems in everyday life. Thus, students are able to make good decisions if they can think critically, while the requirements for being able to think critically are that they must be able to think logically, reflectively, and have initial knowledge related to the problems they face.

Teachers as educators have a role in facilitating and motivating students' knowledge, attitudes, and skills. However, the efforts made by the teacher are still limited to the knowledge aspect, so that other aspects have not been optimally reached. 21st century skills as described above require teachers to be creative and innovative in learning. One of the materials in the Indonesian language learning content, namely writing, requires students to have these 4C skills. This fact is the basis for conducting an analysis regarding the application of 21st century skills in thematic learning.

Referring to the description above, a study or analysis is needed regarding 21st century skills in student writing on Indonesian language content. The research aims to find indicators of 4C skills in the form of Critical thinking and problem solving, Creativity and innovative, Collaborative, and Communicative through written works made by students. The output of the research is in the form of articles that will be published in national journals and pocket books containing keywords of 21st century skills and applications to other subject matter themes.

According to [4] 21st Century Skills are important skills that must be mastered by everyone in order to be successful in facing challenges, problems, life, and careers in the 21st century. 21st Century skills include life and career skills, innovation and learning skills, and technology skills. information and media [5] [6].

The Partnership for 21st Century Skills emphasizes that 21st century skills are formed from a solid understanding of content knowledge which is then supported by various skills,

Volume 6, Number 1, March 2023, Page 110-118
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

expertise and literacy needed by an individual to support his or her success both personally and professionally [7]. He further explained that these 21st century skills arise from an assumption that currently individuals live and live in a technology-laden environment, where there is an abundance of information, very high acceleration of technological progress and new patterns of communication and collaboration. Success in the digital world is highly dependent on skills that are important to have in the digital era, including critical thinking skills, problem solving, communication and collaboration. Learning and innovation skills needed in the 21st century are: creativity, critical thinking skills, collaboration skills, and communication skills [8]. Proficiency in the areas of innovation and learning skills that are expected to be developed in the 21st century are as follows:

1. Communication Skills; in this model students are required to understand, manage, and create effective communication in various forms and contents orally, in writing and multimedia. The main purpose of communication is to send information or messages so that the recipient can understand them [9]
2. Collaboration Skills; students demonstrate ability in teamwork and leadership, adapting to different types of roles and responsibilities, working productively, placing empathy in its place and respecting different views.
3. Critical thinking and problem solving skills; critical thinking is an organized process that allows students to evaluate the evidence, assumptions, logic, and language that underlies the thinking of others [10] Critical thinking as the ability to analyze, interpret, evaluate, summarize, and gather information.
4. Creativity and innovation skills; Creative thinking can be defined as the ability to create a new object or concept or perfect an existing product to make it more attractive. Creativity is the ability to create something, apply a new form, generate imaginative skills, or to make something that already exists into something new [11]

21st century skills or also said 4C skills can be applied in learning including Indonesian writing materials. Scientific writing emphasizes aspects of the 4C skills. Scientific writing can be interpreted as a report on the results of studies, assignments, research results, or the results of observations / observations of students in the environment, both at school and at home. Scientific writing is also interpreted as a form of study that has been carried out by a person or a team by fulfilling scientific principles and ethics that have been confirmed and adhered to by the scientific community [12]. Scientific work is written work created to solve a problem on the basis of theory and scientific methods. For this reason, scientific work usually contains data, facts, and solutions regarding a formulation of the problem raised. Writing scientific papers must be done coherently and systematically [13].

This research is based on the results that have been carried out by several researchers [14]; [15]; [16], who found that 4C skills are said to be high-level skills and can be identified through thematic learning in elementary school learning. Referring to previous research, further research can be carried out focused on thematic learning.

The following shows the theoretical framework and state of the art of this research.

Figure 1 Research Thinking Framework

This research is a research that begins with literature studies and also observations. Literature studies are related to problems that have been studied or researched by previous researchers. Previous studies and research are summarized in a state of the art based on previous research journal articles which can be seen in Figure 2.

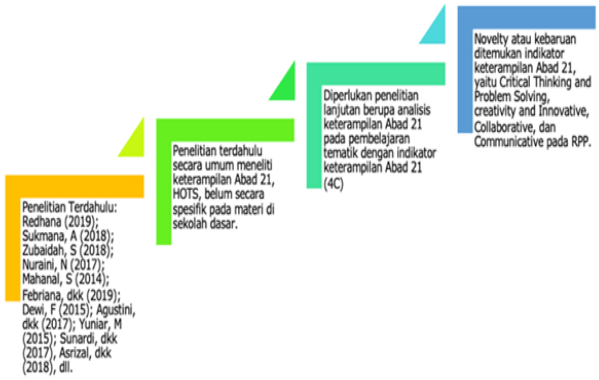

Figure 2 State of the Art Research

METHOD

This study uses a qualitative research method with a case study approach. The research was conducted at Kampung Rambutan State Elementary School, Bogor City. This school was chosen because this SD is one of the schools with A accreditation. Knowing this fact, it was concluded that this school is an ideal place to conduct research to find out more about students' written works related to 21st century skills. carried out by teachers in applying 21st century skills through planning and implementing learning. Data collection was carried out through document analysis, observation of learning activities, and interviews supplemented by other data such as lesson plans, daily assessment questions, and questionnaires from students. Data collection techniques in this study were divided into 2, namely data collection to produce primary data and data collection to produce secondary data. To obtain the necessary primary and secondary data, four techniques were used, namely

Volume 6, Number 1, March 2023, Page 110-118
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

interviews, questionnaires, observation and documentation. This technique is used to check the truth of the data that has been obtained with other parties, discuss it with colleagues in the profession or use tools such as cameras. In this study, researchers discussed it with colleagues and other teachers. The validity of the instrument is carried out by expert validation or expert judgment. The following is a research flowchart.

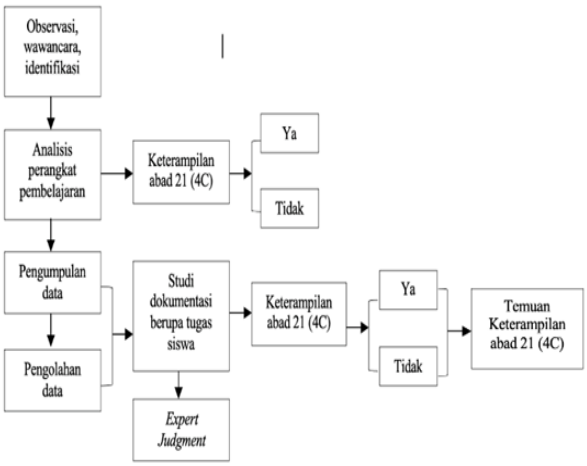

Figure 3 Research Flowchart

RESULTS AND DISCUSSION

The research begins with the stages of learning device analysis, one of which is the Learning Implementation Plan or RPP. This analysis activity is carried out by triangulation which looks at the use of verbs in indicators and the suitability of 4C criteria with learning activities, especially in core activities.

Interviews were conducted with fifth grade teachers to obtain information about teachers' understanding of higher order thinking. The interview will be conducted on November 13, 2022 in the library room. Based on the interview results, the teacher revealed that he understood HOTS because he often received training on critical thinking. The teacher understands HOTS to the stage of implementing it into lesson plans. However, in some KD to implement higher-order thinking skills is a little difficult. In thematic learning teachers often use the Problem Based Learning (PBL) model, teachers also often apply group activities when learning this is intended so that students are more active and creative in accordance with the 2013 curriculum. However, the teacher still occasionally uses the lecture method, this is to help students who do not understand the learning material.

In this discussion it can be concluded that the teacher does not understand 21st century learning, this is because the teacher thinks that HOTS and 21st century learning are the same. However, schools provide facilities and motivate teachers to develop teacher abilities to attend seminars or workshops related to 21st century learning.

In order to find out that the teacher carries out learning activities in accordance with the skills criteria in the 21st century, the researchers made observations. The following are the results of observations that have been made in class V thematic learning.

Following are the results of the analysis of cognitive aspect indicators in the lesson plan (RPP) in table 1.

Table 1 Results of Analysis of 4C Indicators (21st Century Skills) in RPP

No	Keterampilan Abad 21 (4C)	Kriteria	Ya	Tidak	Keterangan
1.	*Critical thinking and Problem Solving* (Berpikir kritis dan Pemecahan Masalah)	a. Di dalam langkah- langkah pembelajaran memperlihatkan proses guru mengaitkan materi yang akan dipelajari dengan materi sebelumnya dengan keadaan nyata dalam kehidupan sehari-hari. b. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan soal yang jawabanya tidak tertera pada buku paket atau LKS		√ √	a. Dalam RPP, guru tidak memperlihatkan proses guru mengaitkan materi sebelumnya dengan keadaan nyata dalam kehidupan sehari-hari. b. Dalam RPP, Guru tidak memperlihatkan proses guru memberikan soal yang jawabannya tidak tertera pada buku paket atau LKS.
2.	*Creativity and Innovation* (Kreativitas dan Inovasi)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan kesempatan pada siswa membuat karya dengan ide siswa sendiri. b. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan kesempatan siswa mencari informasi secara mandiri.	√	√	a. Dalam RPP, guru tidak memperlihatkan proses guru memberikan kesempatan pada siswa membuat karya dengan ide siswa sendiri melainkan menempelkan gambar dari kegiatan ekonomi dari koran, majalah atau internet dengan kertas A3. b. Dalam RPP, Guru memperlihatkan proses guru memberikan kesempatan siswa mencari informasi secara mandiri melalui buku, majalah atau internet.
3.	*Collaborative* (Kolaborasi)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru meminta siswa untuk bekerjasama dengan kelompok dalam menyelesaikan suatu permasalahan. b. Di dalam langkah-langkah pembelajaran memeperlihatkan proses guru memberikan kegiatan atau percobaan yang berhubungan dengan kegiatan nyata secara berkelompok.	√	√	a. Dalam RPP, guru memperlihatkan proses guru meminta siswa untuk bekerja sama dengan kelompok saat guru memberikan pertanyaan untuk dikerjakan bersama dengan kelompoknya. b. Dalam RPP, guru tidak memperlihatkan proses guru memberikan kegiatan atau percobaan yang berhubungan dengan kegiatan nyata secara berkelompok. Guru meminta siswa untuk mengamati kegiatan ekonomi di Indonesia melalui berbagai sumber (majalah, koran, dan internet).
4.	*Communication* (Komunikasi)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru meminta siswa untuk melakukan presentasi hasil diskusi atau proyek siswa. b. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberi		√	a. Dalam RPP, guru tidak memperlihatkan proses guru meminta siswa untuk melakukan presentasi hasil diskusi atau proyek siswa. Guru lebih menekankan untuk memberikan pertanyaan kemudian

Volume 6, Number 1, March 2023, Page 110-118
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

Figure 4 Observation of Learning Implementation in Class V

Table 2 Observation Results on Learning Implementation

No	Keterampilan Abad 21 (4C)	Kriteria	Ya	Tidak	Keterangan
1.	*Critical thinking and Problem Solving* (Berpikir kritis dan Pemecahan Masalah)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru mengaitkan materi yang akan dipelajari dengan materi sebelumnya dengan keadaan nyata dalam kehidupan sehari-hari.		√	a. Guru tidak memperlihatkan proses guru mengkaitkan materi yang ak dipelajari dengan materi sebelumnya. Guru memulai pembelajaran dengan literasi kemudian menyampaikan tu pembelajaran.
		b. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan soal yang jawabanya tidak tertera pada buku paket atau LKS.		√	b. Guru memperlihatkan proses memberikan soal yang jawal sudah tertera pada buku pak tematik.
2.	*Creativity and Innovation* (Kreativitas dan Inovasi)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan kesempatan pada siswa membuat karya dengan ide siswa sendiri.		√	a. Guru tidak memberikan tuga siswa untuk membuat karya ide sendiri namun meminta untuk mencari gambar tentar kegiatan ekonomi Indonesia kemudian ditempe pada kertas gambar.
		b. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru memberikan kesempatan siswa mencari informasi secara mandiri.			b. Guru memperlihatkan proses meminta siswa untuk menca informasi secara mandiri der mencari majalah atau koran berkaitan dengan kegiatan el di Indonesia kemudian didisl dengan kelompoknya.
3.	*Collaborative* (Kolaborasi)	a. Di dalam langkah-langkah pembelajaran memperlihatkan proses guru meminta siswa untuk bekerjasama dengan kelompok dalam menyelesaikan suatu permasalahan.	√		a. Guru memperlihatkan proses meminta siswa untuk bekerj saat berdiskusi dengan kelon Suatu kelompok tersebut dib sebuah permasalahan dan gu meminta siswa dalam kelom memecahkan permasalahan diberikan oleh guru.

From table 2 above, the results of observations on the implementation of learning can be concluded that in the communication or communication aspect the first point the teacher has shown the teacher's process when asking students to make presentations. This can be seen when the teacher asks each group to explain the results of their respective group discussions about the economic activities of the Indonesian people through pictures and explain the benefits of community unity and integrity in the economic activities of the Indonesian people.

Then on the second point, the teacher gives students the opportunity to convey conclusions at the end of the learning activity. At the end of the lesson the teacher concludes and reflects on learning with students regarding today's learning activities. In the second aspect, namely Collaborative or collaboration on the first point, the teacher has shown the process of asking students to work together when discussing with groups. Before starting the learning process the teacher has formed groups and then the teacher gives questions or questions to each group and then discusses them to find answers to the questions given. For example, after reading the passage "Economic System" the teacher gives several questions to be discussed with the group. On the second point, the teacher does not provide an activity or experiment related to real activities in groups.

The process that occurs is more directed at group discussion activities. In the second aspect or aspects of critical thinking and problem solving, it does not show the teacher repeating the previous day's learning. The teacher starts the lesson by praying then singing the national anthem followed by literacy activities. On the second point, the teacher does not give questions whose answers are not in the textbooks or textbooks. The teacher makes his own questions, but the answers to these questions are already listed in the text that has been given. In the aspect of creativity and innovation, the teacher does not provide activities for students to create works with their own ideas.

The teacher only asks students to look for pictures in magazines, newspapers and the internet regarding economic activities in Indonesian territory. On the second point, the teacher shows the process of giving students the opportunity to find information independently. This activity can be seen when the teacher asks students to look for information in magazines, newspapers or the internet related to economic activities in Indonesia and then discusses this with their groups.

The results of the analysis obtained data through questionnaires distributed to fifth grade students. Through the questionnaire data related to the learning process carried out by the teacher will be presented through the questionnaire, then the results of the student questionnaire will later be compared with the questionnaire filled in by the teacher, whether the results of the student and teacher questionnaires get the same results or different. The results of the questionnaire analysis are summarized in the following bar chart.

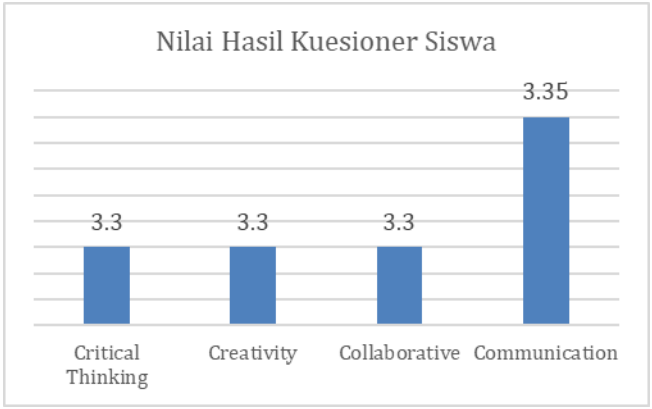

Figure 5. Bar chart of Questionnaire Analysis Results

The bar chart above is the result of an analysis of the questionnaire filled out by 30 fifth grade students. The diagram presents data regarding students' perceptions of the implementation of learning conducted by the fifth grade teacher. Through Figure 5 and the Likert scale above, it can

Volume 6, Number 1, March 2023, Page 110-118
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

be concluded that: Critical Thinking ability, Collaborative, and Creativity based on student perceptions both have an average score of 3.3.

Based on the Likert scale above, it can be concluded that the implementation of learning in the classroom often uses abilities related to Critical Thinking, Collaborative, and Creativity. Meanwhile, the ability to communicate has an average score of 3.35 where this score also shows that communication skills are often carried out in the learning process. So if it is entered into the table as the final result of the questionnaire analysis related to higher-order thinking skills, it is as follows.

Table 3 Results of Student Questionnaire Analysis

No	Kriteria	Rata-rata	Pernyataan Kemunculan
1.	*Critical Thinking*	3,3	Sering Sekali
2.	*Creativity*	3,3	Sering Sekali
3.	*Collaborative*	3,3	Sering Sekali
4.	*Communication*	3,35	Sering Sekali

Data from the results of the questionnaire analysis can be seen in the following bar chart.

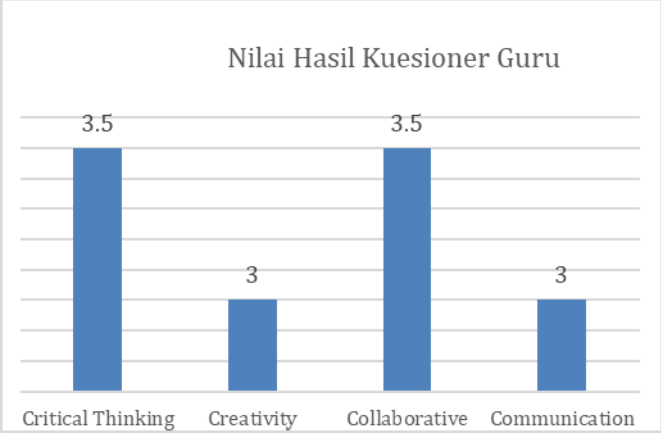

Figure 6. Bar chart of teacher questionnaire analysis results

The bar chart above is the final result of the analysis that the researcher conducted related to the 4C questionnaire. Based on the bar chart above, it can be seen that the data obtained does not have much difference. On Critical Thinking and Collaborative it has a score of 3.5 then on Creativity and Communication it has a score of 3. Critical Thinking and Collaborative abilities based on teacher perceptions have an average score of 3.5; when referring to the Likert scale in table 4.6, Critical Thinking and Collaborative abilities are often applied by teachers in learning.

Meanwhile, abilities related to Creativity and Communication have an average score of 3.3. Referring to the Likert scale, the score shows that teachers often apply Creativity and Communication skills in learning activities. The following are the results of the analysis of the learning process carried out by the teacher in the classroom.

Table 4 Teacher Questionnaire Analysis Results

No	Kriteria	Rata-rata	Pernyataan Kemunculan
1.	*Critical Thinking*	3,5	Sering Sekali
2.	*Creativity*	3,0	Sering
3.	*Collaborative*	3,5	Sering Sekali
4.	*Communication*	3,0	Sering

The data shows that the teacher has fulfilled several criteria regarding 21st century skills, out of 8 criteria, three criteria have been fulfilled. In the aspect of communication, one criterion is fulfilled, namely in the learning steps in the lesson plan, the teacher provides opportunities for students to express opinions. Then in the collaboration aspect there is one criterion that is fulfilled, in the learning steps in the lesson plan the teacher gives questions that must be worked on by students in groups. The third aspect is creativity and innovation. Learning steps in the lesson plan, the teacher asks students to find sources of information independently.

In the description of the activities in the lesson plans, students are asked by the teacher to observe economic activities in the archipelago by utilizing various types of information sources, such as magazines, newspapers and the internet. The results of the analysis of the student questionnaire found in the communication aspect the aspect that was not fulfilled was the presentation activity carried out by students regarding the results of student discussions or projects. In the RPP that the researcher analyzed there was no process where students were asked to make presentations about the results of group discussions or student projects.

However, the teacher provides a stimulus to students by providing a number of questions which will later be answered through group discussions. In the Collaboration aspect, the criterion that is not met is the process of the teacher giving activities or experiments to students related to real activities in groups. In the Critical Thinking aspect, the two criteria that the researcher made were not fulfilled. In the RPP, which the researcher has analyzed, there are no activities where the teacher associates the previous material with real situations in everyday life. The teacher also does not give questions whose answers are not listed in the textbook or LKS.

However, in literacy activities, the teacher opens the lesson by giving pictures of "Great Indonesia" and asking questions that stimulate students to think critically. These questions include "how do you respond to the poster", "what message do you understand from the poster", "in your opinion, what is the influence of the poster on people's lives in Indonesia", "do you agree with the contents of the poster's message". These questions are expected to help students to be able to provide reasoning in analyzing and solving problems given by the teacher. Then the last aspect is on creativity and innovation, in the lesson plan it is not seen that the teacher gives students the opportunity to create works with their own ideas. In the steps the teacher asks students to paste pictures

of economic activities from newspapers, magazines, the internet with A3 [17].

Based on the explanation above, teachers already understand the use of HOTS indicators and 21st century skills [12]. The results of the interviews showed that the teacher already understood HOTS and received debriefing several times. However, teachers find it difficult to distinguish between HOTS and 21st century skills, therefore their application is not optimal in making lesson plans. In addition, the teacher in making indicators only adheres to the steps that are already in the Teacher's Book. This is evident in the RPP on the Indonesian language indicator "Explaining questions related to non-fiction texts".

In the activity steps on indicator 3.4.1 Indonesian, the teacher embeds non-fiction text contained in the textbook and then the teacher makes a list of questions for which the answers are already listed in the book. So that in making indicators the teacher refers to books that have been provided by the school does not make an innovation or change in activities in the learning process. Even though the existing basic competencies should be explored again in order to produce indicators that meet the HOTS elements and 21st century skills [9]; [18]; [19].

Application of 21st Century Skills (4C) in the Learning Process

The implementation of learning carried out by the class V teacher was seen from various aspects through observations during the learning process, questionnaires on student perceptions of the implementation of teaching teachers, questionnaires on teacher perceptions of the implementation of the teaching process, and interviews with class teachers. In observing learning with learning skills and innovation criteria in the 21st century, namely creativity, critical thinking, collaboration skills, and communication skills. In the communication aspect, all criteria are carried out, the teacher gives students the opportunity to present the results of group discussions regarding the economic activities of the Indonesian people and convey the conclusions of the learning activities on that day with the teacher's guidance.

From these activities students can communicate effectively orally and in writing. upun write in various forms and contexts. Teachers can teach by improvising a lot so they can create conditions or situations that make students more active and students are able to convey ideas orally [20]. Even though the RPP is not fulfilled, the most important part is the part of the learning process is fulfilled so that students can learn 21st century skills. This is in accordance with the results of the teacher and student questionnaire which states that communication skills are often used. Although there was a slight difference between the teacher and student questionnaires where the student questionnaire stated often and the teacher's questionnaire stated often.

In skills or collaboration skills, students can learn to monitor each other, students can know how to correct each other's mistakes, students can work together with teams, and help each other when solving complex problems. In the collaboration aspect, the teacher does not meet one of the specified criteria. The first criterion, the teacher asks students to work together in groups. The teacher has formed a group from the beginning of the semester the group will be used until the end of the semester. Groups are made containing students of various cognitive abilities so that they can help each other.

The teacher also stated that group work is always carried out in every lesson. In the second criterion, the teacher provides activities or experiments related to real activities. In the observation, it was found that the teacher had not carried out activities in the form of experiments or experiments with groups both inside and outside the classroom. In the theme taught by the teacher, this theme cannot be inserted with experimental or experimental activities, but the teacher has implemented one of the indicators of the collaboration aspect.

In critical thinking skills or skills, students are required to try to have the ability to understand and make complex choices in analyzing and solving problems. In the first criterion the teacher does not associate the material to be learned with material that has been previously studied in everyday life. The teacher does not give apperception before teaching, the teacher only gives literacy in the form of questions and answers about the Great Indonesia poster, the poster is not related to the previous material.

However, in literacy activities the teacher asks questions that lead to critical thinking skills, for example: "what do you think is the influence of the message on the poster in the lives of Indonesian people?". These questions include questions that lead to critical thinking skills because these questions require students to understand the interconnection or relationship between the messages in the posters and the lives of Indonesian people. The teacher has made a question but the answer to the question is already listed in the textbook. So that in the aspect of critical thinking skills there are no criteria that are met.

Creativity and innovation skills require teachers to provide individual student-centered learning models. In the aspect of creativity and innovation skills, teachers only fulfill one of the two specified criteria. The first criterion requires the teacher to give students the opportunity to create a work with their own ideas.

The results of the analysis found that the teacher did not give students the task of making works with their own ideas, instead the teacher asked students to find pictures from the internet or newspapers and then pasted them on A3 drawing paper. However, in the second criterion, it can be seen that the teacher provides opportunities for students to search for information independently via the internet, books, or magazines.

This can foster students' ability to use idea generation techniques by asking students to find the necessary information based on the theme determined by the teacher. Based on the results of research on student and teacher perceptions of teacher implementation, the results are not much different.

First, critical thinking skills based on student perceptions have an average score of 3.3 which is included in the very often category. Meanwhile, the ability to think critically based on the teacher's perception has an average score of 3.5 which

Volume 6, Number 1, March 2023, Page 110-118
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

is equally included in the very often category. From this score it can be seen that teacher perceptions and student perceptions regarding critical thinking get the same results, which is very often.

Second, on collaboration skills, based on the perceptions of students in the ability questionnaire, it has an average score of 3.3 which is included in the very frequent criteria. Meanwhile, the teacher's perception of collaboration skills has an average score of 3.5, which means that the score is included in the frequent criteria. From the results of the questionnaire it can be concluded that teacher perceptions and student perceptions on the ability to collaborate are on the same criteria, namely very often.

Third, the ability of creativity based on student perceptions has an average score of 3.3 which is included in the very often category. Meanwhile, based on the teacher's perception of creativity ability has an average score of 3 which is included in the frequent criteria. Through the data above, it can be concluded that there are differences in perceptions between students and teachers.

According to the student's perception, creativity is often applied in class, while according to the teacher's perception, creativity is in the frequent criteria. Fourth, on communication skills based on student perceptions the average score is 3.35 which is included in the very often category. Meanwhile, the teacher's perception of communication skills gets a score of 3 which is the frequent category. There are differences in the perceptions of teachers and students. Based on students' perceptions, communication skills are included in the very often category, while teachers' perceptions of communication skills are often applied.

Based on some of the explanations above, it can be concluded that the implementation of learning has led to higher-order thinking skills, but teachers are still unable to apply all 4C skills in learning activities. This statement is supported by interview results that teachers do not fully understand 21st century skills and consider these skills to be the same as higher order thinking or HOT [21]; [22]; [23].

Conclusion

Based on the results and discussion of the implementation of learning plans, implementation of learning, and assessment of learning through evaluation questions in class V, it can be concluded several things as follows:

1. Based on the results of research that has been done on the lesson plan (RPP), the lesson plan used or made as a whole still uses low-level operational verbs (KKO). However, teachers have implemented several higher-order thinking skills and indicators of 21st century skills (4C), namely Critical Thinking and Problem Solving, Creativity and Innovative, Collaborative, and Communicative in lesson plans.
2. Based on the results of an analysis of the observation of the learning process, the teacher has implemented learning that leads to higher-order thinking skills and 21st century skills. Even so, teachers are still unable to apply all 4C skills in learning activities. This happens because teachers do not fully understand 21st century skills and assume that these skills are the same as higher order thinking.

REFERENCE

[1] I. W. Redhana, "Mengembangkan keterampilan abad ke-21 dalam pembelajaran kimia," *J. Inov. Pendidik. Kim.*, vol. 13, no. 1, 2019.

[2] E. Y. Wijaya, D. A. Sudjimat, A. Nyoto, and U. N. Malang, "Transformasi pendidikan abad 21 sebagai tuntutan pengembangan sumber daya manusia di era global," in *Prosiding Seminar Nasional Pendidikan Matematika*, 2016, vol. 1, no. 26, pp. 263–278.

[3] R. A. Sani, *Pembelajaran berbasis hots edisi revisi: higher order thinking skills*, vol. 1. Tira Smart, 2019.

[4] A. Z. Robbia and H. Fuadi, "Pengembangan keterampilan multimedia interaktif pembelajaran ipa untuk meningkatkan literasi sains peserta didik di abad 21," *J. Ilm. Profesi Pendidik.*, vol. 5, no. 2, pp. 117–123, 2020.

[5] T. Widodo and S. Kadarwati, "Higher order thinking berbasis pemecahan masalah untuk meningkatkan hasil belajar berorientasi pembentukan karakter siswa," *J. Cakrawala Pendidik.*, vol. 5, no. 1, 2013.

[6] S. Zubaidah, "Mengenal 4C: Learning and innovation skills untuk menghadapi era revolusi industri 4.0," in *2nd Science Education National Conference*, 2018, vol. 13, pp. 1–18.

[7] N. Nuraini, "Profil keterampilan berpikir kritis mahasiswa calon guru biologi sebagai upaya mempersiapkan generasi abad 21," *Didakt. Biol. J. Penelit. Pendidik. Biol.*, vol. 1, no. 2, pp. 89–96, 2017.

[8] S. Mahanal, "Peran guru dalam melahirkan generasi emas dengan keterampilan abad 21," in *Seminar Nasional Pendidikan HMPS Pendidikan Biologi FKIP Universitas Halu Oleo*, 2014, vol. 1, pp. 1–16.

[9] M. Hosnan, *Pendekatan saintifik dan kontekstual dalam pembelajaran abad 21: Kunci sukses implementasi kurikulum 2013*. Ghalia Indonesia, 2014.

[10] T. Hartini, M. A. Misri, and I. Nursuprianah, "Pemetaan HOTS siswa berdasarkan standar PISA dan TIMSS untuk meningkatkan mutu pendidikan," *Eduma Math. Educ. Learn. Teach.*, vol. 7, no. 1, pp. 83–92, 2018.

[11] Y. Febrina, M. Zaki, and R. Amalia, "ANALISIS Kemampuan Siswa Dalam Menyelesaikan Soal High Order Thinking Skills Pada Materi Statistika," *J. Dimens. Mat.*, vol. 2, no. 02, pp. 138–145, 2019.

[12] F. S. Dewi, "Analisis Penerapan Higher Order Thinking Skills pada Pembelajaran IPA Kelas V Tema 1 SD Negeri Tunggulsari 2 Surakarta," 2022.

[13] K. Fajriyah and F. Agustini, "Analisis Keterampilan Berpikir Tingkat Tinggi Siswa SD Pilot Project Kurikulum 2013 Kota Semarang," *Elem. Sch. J. Pendidik. Dan Pembelajaran Ke-SD-An*, vol. 5, no. 1, 2018.

[14] M. Yuniar, C. R. Rakhmat, and A. Saepulrohman, "Analisis HOTS (High Order Thinking Skills) pada soal objektif tes dalam mata pelajaran ilmu pengetahuan sosial (Ips) Kelas V SD Negeri 7 Ciamis," *PEDADIDAKTIKA J. Ilm. Pendidik. Guru Sekol. Dasar*, vol. 2, no. 2, pp. 187–195, 2015.

[15] A. A. B. Wijaya, S. Sunardi, and D. Kurniati, "Pengembangan Indikator 4c's Yang Selaras Dengan Kurikulum 2013 Pada Mata Pelajaran Matematika Sma/Ma Kelas Xi Semster 2," *Kadikma*, vol. 8, no. 3, pp. 114–122, 2017.

[16] A. Asrizal, A. Amran, A. Ananda, F. Festiyed, and R. Sumarmin, "The development of integrated science instructional materials to improve studentsâ€™ digital literacy in scientific approach," *J. Pendidik. IPA Indones.*, vol. 7, no. 4, pp. 442–450, 2018.

[17] L. Novita and A. Novianty, "Pengaruh Penggunaan Media Pembelajaran Audio Visual Animasi Terhadap Hasil Belajar Subtema Benda Tunggal Dan Campuran," *JTIEE (Journal Teach. Elem. Educ.*, vol. 3, no. 1, pp. 46–53, 2020.

[18] A. Kilgarriff and I. Renau, "esTenTen, a vast web corpus of Peninsular and American Spanish," *Procedia-Social Behav. Sci.*, vol. 95, pp. 12–19, 2013.

[19] W. Sanjaya, "Strategi pembelajaran berorientasi standar proses pendidikan," 2011.

[20] A. R. Soleh and Z. Arifin, "Integrasi Keterampilan Abad 21 dalam Pengembangan Perangkat Pembelajaran Pada Konsep Community of Inquiry," *QALAMUNA J. Pendidikan, Sos. dan Agama*, vol. 13, no. 2, pp. 473–490, 2021.

[21] S. Jelatu, K. Mandur, A. P. Makur, F. Nendi, and B. Gunur, "Konstruksi Tes High Order Thinking Skills (HOTS) bagi Guru-Guru Matematika SMP di Manggarai Timur," *E-Dimas J. Pengabdi. Kpd. Masy.*, vol. 10, no. 2, pp. 214–220, 2019.

[22] S. Ragazzi, A. Crescentini, and L. Castelli, "Evaluation and monitoring of innovation in school: a case study," *Procedia-Social Behav. Sci.*, vol. 69, pp. 414–421, 2012.

[23] A. Suknaisith, S. Wongwanich, and C. Piromsombat, "Development of teacher performance in educational measurements and evaluation through self-monitoring strategies," *Procedia-Social Behav. Sci.*, vol. 116, pp. 1683–1688, 2014.