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Integration of 21st Century Skills in Thematic Learning in Elementary School

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ABSTRAK

Tantangan abad 21 menjadikan siswa ditutut untuk tanggap dengan kemajuan ilmu pengetahuan dan teknologi. Siswa perlu mempersiapkan keterampilan abad 21 yang dikenal dengan istilah 4C (Critical Thinking, Communication, Collaborative, dan Creativity). Sehingga dalam suatu pembelajaran perlu adanya integrasi keterampilan abad 21 yang dipadukan dengan pembelajaran tematik. Penelitian ini bertujuan untuk menganalisis integrasi keterampilan abad 21 dalam pembelajaran tematik di sekolah dasar. Jenis penelitian ini menggunakan pendekatan deskriptif kualitatif. Subjek dari penelitian ini yaitu guru dan siswa kelas III sekolah dasar. Teknik pengumpulan data menggunakan observasi, wawancara, dan dokumentasi. Teknik keabsahan data yang digunakan yaitu tirangulasi. Data yang diperoleh akan dianalisis dengan mereduksi data, menyajikan data, dan penarikan kesimpulan. Hasil penelitian integrasi keterampilan abad 21 dalam pembelajaran tematik ditunjukkan melalui aktivitas yang dilakukan ketika pembelajaran. Keterampilan abad 21 diintegrasikan melalui kegiatan berdiskusi, penyelesaian soal-soal yang membutuhkan kemampuan berpikir tingkat tinggi, penyampaian argumen, dan kemampuan berpikir dengan ide kreatif, inovativ, dan imajinatif. Melalui aktivitas pembelajaran tersebut, dapat disimpulkan bahwa integrasi keterampilan abad 21 dalam pembelajaran tematik mampu meningkatkan keaktifan siswa dalam belajar, meningkatkan potensi, mengembangkan keterampilan siswa, mengembangkan kompetensi soft skill dan hard skill yang dimiliki siswa dalam menguasai pembelajaran tematik di sekolah.

ABSTRACT

The challenges of the 21st century require students to be responsive to advances in science and technology. Students need to prepare 21st century skills known as 4C (Critical Thinking, Communication, Collaborative, and Creativity). So that in learning there needs to be integration of 21st century skills combined with thematic learning. This study aims to analyse the integration of 21st century skills in thematic learning in elementary schools. This type of research uses a qualitative descriptive approach. The subjects of this study were teachers and third grade students. Data collection techniques are using observation, interviews, and documentation. Data validity technique used is triangulation. The data obtained will be analysed by reducing data, presenting data, and drawing conclusions. The results of the research on the integration of 21st century skills in thematic learning are shown through the activities carried out during learning. 21st century skills are integrated through discussion activities, solving problems that require high-order thinking skills, conveying arguments, and the ability to think with creative, innovative, and imaginative ideas. Through these learning activities, it can be concluded that the integration of 21st century skills in thematic learning is able to increase student activity in learning, increase potential, develop student skills, develop soft skill and hard skill competencies possessed by students in mastering thematic learning at school.

1. INTRODUCTION

The rapid development of science and technology is the current of globalization. This rapid change took place in the 21st century. The 21st century is known as the century of knowledge, the century of knowledge-based economy, the century of globalization, the century of information technology, and the century of revolution society 5.0. Revolution society 5.0 is a development from the previous era, namely

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the industrial revolution 4.0 through a combination of more advanced technologies than before (Anwar, 2021; Coşkun, S., Kayıkcı, Y., & Gençay, 2019). The development of the 21st century in science and technology cannot be separated from the world of education. The challenges of the 21st century make the world of education seem limitless, triggering comparisons between schools, curricula, research methods, and student achievement (Amran et al., 2019; Fitri et al., 2020; Lubis, 2018; Riyanti et al., 2020).

As science develops, education undergoes several changes in the curriculum used in schools aimed at improving the quality of education. At this time the applicable curriculum is the Independent Curriculum. The Merdeka Curriculum is a form of renewal of the 2013 Curriculum curriculum as an improvement to the system that was already running before. The Merdeka Curriculum creates active and creative learning. The government provides options in implementing the 2022 Independent Curriculum for all schools, namely (a) 2013 Curriculum as a whole; (b) Emergency Curriculum; (c) simplified 2013 curriculum; and (d) Independent Curriculum with several options such as Independent Learning, Independent Change, and Independent sharing (Aprima & Sari, 2022; Indarta et al., 2022). In its implementation, the Independent Curriculum is being implemented in stages. The educational curriculum applied to prepare for the challenges of the 21st century is as follows: (a) independent in learning; (b) open insights and information; (c) readiness to face real world challenges; (d) complete the unstructured; (e) contextual knowledge; (f) higher order thinking skills; (g) determine the problem and scope of learning; (h) study with peers; (i) peer assessment; (j) group cooperation; (k) multidisciplinary learning; (l) process skills assessment (Husain & Kaharu, 2020; Jayadi et al., 2020; Keraf & Komalasari, 2019).

Based on these skills, the core skills in the 21st century are known as the 4C skills which are aimed at preparing students to face life in society (Anagün, 2018). The skills that students must possess in the 21st century include 4C (Critical Thinking, Communication, Collaborative, Creativity) (Anagün, 2018; Redhana, 2019). In a study conducted at the Indonesian School of Denhaag (SIDH) will discuss the strategies used by SIDH in improving 4C competencies (Critical Thinking, Communication, Collaborative, Creativity) to improve students' soft skills and hard skills in 21st century competition revolution 4.0 . The application of the 4C concept in Curriculum 2013 learning has a very big impact on the nation's next generation to face the challenges of 21st century life (Partono et al., 2021; Putri et al., 2019; Soleh & Arifin, 2021). In the 21st century teachers are required to be able to carry out the educational process based on the four pillars recommended by the UNESCO International Commission in education including: learning to know, learning to do, learning to be, and learning to live together (Daryanto, 2017; Soleh & Arifin, 2021). According to the International Society for Technology in Education divides the skills of 21st century teachers into five categories, including: (a) Being able to facilitate and inspire student learning and creativity, with indicators, (b) Designing and developing learning experiences with assessments in the digital era, (c) Being a model, how to learn and work in the digital era, (d) Encouraging and being a model of responsibility and digital society (Hau et al., 2020; Stehle & Peters-Burton, 2019; Williams et al., 2009).

The learning applied in the 2013 curriculum is thematic learning. Thematic learning is integrated learning wherein learning uses themes as a unifier between one subject and other subjects in one meeting (Maulidin et al., 2020; Yusrina et al., 2018). Elementary school thematic learning in Indonesia, based on the 2013 integrated thematic curriculum, is interdisciplinary, multidisciplinary, and transdisciplinary integration. Several previous studies supported the integration of 21st century skills in thematic learning, the first research conducted by previous study obtained the result that student learning scores were above the minimum school completeness criteria after integrating 21st century skills into thematic learning (Satria & Hajani, 2020). Second, previous research conducted obtained the result that integrated thematic learning can optimize student learning outcomes (Muhammad et al., 2021). Third, research shows the results that 21st century skills can foster group collaboration in solving certain problems, increase tolerance, think critically, be creative in solving problems about associating things (R. Septikasari & Frasandy, 2018).

This research was carried out because of problems that occurred in schools regarding the lack of student skills in facing challenges in the 21st century. Based on initial observations, this problem occurs because students cannot think critically in dealing with a problem, students are not confident when expressing opinions in class, students find it difficult to express their ideas, students have difficulty communicating and working in groups. In addition, the 21st century skill component has not run optimally in thematic learning in schools. This research is a form of renewal from previous research which only focused on increasing grades and learning outcomes. This research is more focused on learning activities that can increase students' activeness in learning and develop soft skill and hard skill competencies in mastering thematic learning at school. So the purpose of this study is to analyse integration in thematic learning in elementary schools. This integration is needed to equip students to face the challenges of the 21st century in accordance with the 4C competencies (Critical Thinking,

Communication, Collaborative, and Creativity) which are integrated with thematic learning in elementary schools.

2. METHOD

This research uses descriptive qualitative research by analyzing data or information obtained through informants. Qualitative research is data collection by interpreting phenomena that occur where the researcher is the key instrument (Anggito & Setiawan, 2018). In accordance with the focus of this study, researchers used a descriptive qualitative research type with a phenomenological research design. The phenomenological research design is a qualitative research design that describes subjectively the reality of an event that is perceived by population studies in the study of phenomena that occur.The subjects in this study were teachers and grade 3 students at SDIT Darul Falah. The research site is located in Langenharjo, Grogol District, Sukoharjo Regency. Data collection techniques used are observation, interviews, and documentation. Qualitative research data will be recorded by researchers using a questionnaire to facilitate researchers in the in-depth interview process (Castleberry & Nolen, 2018). The instruments used in this study are in accordance with interview guidelines, observations, and documentation that are adjusted to the indicators of the focus of the problem to be studied.

Data validation technique in this research is using triangulation technique. Triangulation is a data collection technique that combines various data collection techniques and existing data sources (Sugiyono, 2017). There are three strands of qualitative data analysis, namely data reduction, data presentation, and drawing conclusions (Miles et al., 2014). The data analysis technique is an analysis of data that has been compiled or obtained from the field (Rijali, 2019). In data reduction, data is processed so that it can be used as the focus of attention. So that the data obtained is the result of simple and in-depth data collection.

3. RESULT AND DISCUSSION

Result

Based on research results from the integration of 21st century skills in thematic learning, integration is carried out in each component of 21st century skills which include 4C (Critical Thinking, Communication, Collaborative, Creativity). The activities carried out by students are in accordance with 21st century skills to increase student activity and soft skill. In honing these 4 competency components, students are trained by analyzing theory, conveying ideas, presenting assignments, discussing between groups, creating their own creative ideas with the help of the teacher in integrated thematic learning. The result of integration 21st century skills in thematic learning as shown in Table 1.

Table 1. Integration 21st Century Skills in Thematic Learning

No.	21ST Century Skills (4C)	Indicators	Activities in Thematic Learning
1.	Critical Thinking	a. Ability to identify assumptions given. b. Ability to formulate the main issues. c. The ability to determine the consequences of a provision taken. d. The ability to detect problems based on different points of view. e. Ability to express theorem data in solving problems Ability to evaluate relevant arguments in solving a problem	a. Students are able to solve problems in student worksheet. b. Students are able to analyze problems. c. Students can identify problems in each learning load.
2.	Communication	a. Able to convey information and understand information clearly and confidently. b. Able to interact cooperatively in groups. c. Able to express opinions using the ideas found.	a. Students can present arguments. b. Students are active in debriefing in the learning process. c. Students tell stories in Indonesian language subjects.
3.	Collaborative	a. Able to contribute and be active in	a. Students discuss in groups

No.	21ST Century Skills (4C)	Indicators	Activities in Thematic Learning
		group discussions. b. Able to cooperate in carrying out learning activities. c. Able to respect the opinions of others.	b. Active in collaborating c. Collaborate in school activities.
4.	Creativity	a. Create new and useful ideas. b. Perfect analyze evaluate their own ideas to improve and maximize creative efforts. c. Act on ideas to make a real contribution.	a. Creating creative ideas b. Generate ideas c. Realizing ideas into works d. In SbdP learning to recognize imaginative works

Based on Table 1 show the research results, 21st century skills that are integrated in thematic learning increase student activity during the learning process in class. With the integration of 21st century skills in learning, students are able to develop their soft skills. Soft skills can be seen by students' ability to discuss, work together with friends, express their opinions properly and confidently, and think creatively. Therefore, in the 21st century, the abilities possessed by students are not only seen from academics, but also their ability and readiness to face the challenges of the 21st century.

Discussion

Based on the results of the research, 21st century skills are needed to equip students to compete in the revolutionary era of society 5.0. According to the National Education Standards Agency (BSNP) states that the 21st century is the century of knowledge where information is widely spread and technology is developing (Daryanto, 2017). 21st century skills require the ability to use technology in everyday life. This is marked by the characteristics of 21st century skills where knowledge synergizes so that it develops more rapidly. So that the skills of the 21st century is a century where all abilities and skills develop rapidly following the changes that occur (Andrian & Rusman, 2019; Taar & Palojoki, 2022). 21st century skills which include 4C competencies (Critical Thinking, Communication, Collaborative, Creativity) in thematic learning can increase student activity, improve soft skills and hard skills, develop students' potential (Astuti et al., 2019; Resti Septikasari & Frasandy, 2018; Tang et al., 2020). In developing 21st century skills the Ministry of Education and Culture of the Republic of Indonesia in formulating a 21st century learning paradigm emphasized the ability of students to find out from various sources, formulate problems, think analytically and cooperate and collaborate in solving problems.

Critical Thinking is a higher-order thinking ability in which individuals display their capacity to scientifically and purposefully assess a phenomenon from several points of view under various circumstances in order to make a final successful judgment. Critical thinking skills must be nurtured at a young age, especially when children reach school. Base Critical thinking if developed, will teach children how to judge and evaluate facts or points of view before deciding whether to accept or reject that information. Critical Thinking and Problem Solving is a competency that requires students to be able to analyze and solve problems during learning. The components of critical thinking consist of concluding content, giving opinions on other assumptions, reducing unnecessary things, eliminating potential bias, identifying the results of analysis, evaluating the results of arguments, and creating knowledge (Kawuryan et al., 2022; Wechsler et al., 2018). According to previous study Critical Thinking and Problem Solving in the 21st century skills strategy, namely: (a) teaching the HOTS (High Order Thinking Skills) method specifically in the realm of learning, (b) conducting question and answer and discussion on a class scale, (c) teach concepts explicitly, (d) provide scaffolding, (e) apply the HOTS method continuously (Indarta et al., 2022). Before integrating 21st century skills in thematic learning, students' ability to think critically is still low. Students can only solve problem solving questions that have a Low Thinking Order Skill (LOTS) level. Students are only able to recognize the problem without analysing the problem. After implementing 21st century skills in learning, based on the results of interviews and observations, Critical Thinking competence is shown by students being able to complete student worksheet as well, being able to analyse a problem, and identifying the problem in each lesson content (Widayat & Hindarto, 2017; Yusuf, 2018). The worksheet contains problems so that students can hone their abilities. Critical Thinking competencies are needed in developing critical thinking skills and solving problems in depth with the right solutions.

Communication is a process of human interaction using language exchange. Communication involves humans in intrapersonal, group, and mass contexts. Communication is an activity that is very

often carried out by everyone in any scope, anywhere, and anytime. A culture of good communication habituation will be a provision for students in doing jobs that require communication skills and enhance the learning experience (Astuti et al., 2019; Masterson, 2020; Mutohhari et al., 2021). Besides that, communication skills with proper articulation can support students in increasing creativity and critical thinking skills in learning. According to the strategies for training and accessing 21st century skills in communication are: (a) teaching students how to articulate thoughts and ideas, (b) teaching students to listen actively and effectively, (c) teaching students how to use communication for a variety of specific purposes, d) teach students how to use various media and technology, (e) train students to communicate effectively in diverse environments. Before integration, students were not confident in expressing their opinions (Indarta et al., 2022). The results of the communication competency research were shown by students presenting arguments, being active in questioning and answering in learning, telling stories well in learning Indonesian. Communication competence aims to hone language skills. Therefore, in learning the teacher must accustom students to be able to communicate well about lessons and other matters with teachers and other students. Good language will have a good impact, and vice versa. The use of bad words will trigger misunderstandings in receiving messages. The use of good words in communication will have a positive impact on children (Manik & Hutagaol, 2015; Wardhani et al., 2019). The child will feel satisfaction because the desired goal is achieved so that the child's self-confidence will be formed.

Collaborative is the interaction that occurs in a group. Collaboration is an important competency that becomes one of the assessments during the learning process (Castañer & Oliveira, 2020; Saputra et al., 2019). Collaboration can be easily carried out through small and large group assignments during learning. According to previous study collaboration in strategies in training and accessing 21st century skills, namely: (a) teaches students to work respectfully with different teams, both physically and psychologically, (b) trains and encourages students to take responsibility responsibility to cooperate with others, (c) teach students to value the ideas and contributions of each team member, (d) teach flexibility and willingness to compromise. (e) emphasizing cooperative learning. Collaboration is needed in planting and applying in every student (Indarta et al., 2022). The results of the research were shown by students discussing in groups, being active in collaborating, collaborating in activities at school. Discussing in groups will establish the character of cooperation and good relations between friends. Integration of 21st century competencies in thematic learning, collaboration is usually included in the Project Based Learning (PJBL) and Cooperative Learning learning models (Noguera et al., 2018; Sumarno, 2019). Collaboration competence shows an increase because previously it was difficult for students to work together and it was difficult to respect the opinions of others, after the integration of 21st century skills into thematic learning students were happier if there were projects carried out in groups based on interviews, projects carried out with group work will be easier if done together. Teachers have an important role as mentors in encouraging the application of collaboration in learning. In learning, what can be done is to provide training related to skills and interactive learning designs using appropriate media and technology according to 21st century learning.

Creativity competence according to the NACCCE (National Advisory Committee on Creative and Culture Education) conveys that creativity is an imaginative activity that produces new and valuable works (Fakhriyani, 2016; Partono et al., 2021). Creative competence requires students to be able to develop creative ideas during learning. According to previous study 21st century skill strategies in Creativity and Innovation are as follows: (a) asking questions and inviting students to actively participate in learning, (b) exploring topics and material with primary or random data, (c) think of new ways to inform new findings (Indarta et al., 2022). The research results obtained were that previously students could not explore the ideas they had, through this integration students were able to convey creative ideas, create new ideas, turn ideas into works, and their integration was shown in SbdP learning to develop creative, innovative, student competencies and imaginative.

The implication of this study the competence of 21st century skills in its application has been integrated with thematic learning in schools by using 4C Competency (Critical Thinking, Communication, Collaboration, Creativity). Competence is contained in worksheets, learning processes, and learning models. After 21st century skills are integrated with thematic learning, students become more active in learning, students' soft skills and hard skills develop, and students' potential can be honed properly. This research needs to be continued deeper for future researchers regarding the factors that can support and hinder the integration of 21st century skills in thematic learning in elementary schools.

4. CONCLUSION

Based on data analysis and discussion, the integration of 21st century skills in thematic learning is able to increase students' activeness in learning, increase potential, develop student skills, and develop

soft skill competencies and hard skills students have in mastering thematic learning in schools. The 4C competencies (Critical Thinking, Communication, Collaboration, Creativity) contained in 21st century skills can run optimally if teachers and students can respond to 21st century changes.

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