Analysis of Learning Activities in the *Buku Tematik Terpadu* Class VI Theme 7 Leadership Based on 21st Century Skills Competencies

Sajidan[1], Idam Ragil Widianto Atmojo[2], Fadhil Purnama Adi[3], Roy Ardiansyah[4], Alfania Putri Fortuna[5]

Lecturer of Biology Education, Universitas Sebelas Maret, Jl. Brigjend Slamet Riyadi No. 449, Pajang Laweyan, Surakarta City, Central Java, 57146, Indonesia, Lecturer of Elementary School Teacher Education, Universitas Sebelas Maret, Jl. Brigjend Slamet Riyadi No. 449, Pajang, Laweyan, Surakarta City, Central Java, 57146, Indonesia, Lecturer of Elementary School Teacher Education, Universitas Sebelas Maret, Jl. Brigjend Slamet Riyadi No. 449, Pajang, Laweyan, Surakarta City, Central Java, 57146, Indonesia, Lecturer of Elementary School Teacher Education, Universitas Sebelas Maret, Jl. Brigjend Slamet Riyadi No. 449, Pajang, Laweyan, Surakarta City, Central Java, 57146, Indonesia, royardian Student of Elementary School Teacher Education, Universitas Sebelas Maret, Jl. Brigjend Slamet Riyadi No. 449, Pajang Laweyan, Surakarta City, Central Java, 57146, Indonesia,

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sajidan_fkip@uns.ac.id, idamragil@fkip.uns.ac.id,
fadhil@staff.uns.ac.id., syah@staff.uns.ac.id,
alfaniafortuna@student.uns.ac.id
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Abstract. This study aims to analyze the learning activity in the Buku Tematik Terpadu K13 Kelas VI Tema 7 (Kepemimpinan). This research is a type of content analysis with a descriptive qualitative approach. Data validity uses g triangulation of investigators. The subject of this research is the learning activity in the teacher's book and the student's book. Data collection techniques using document studies. The data analysis technique uses an interactive analysis model from Miles and Hubberman. The results of the study show that each of learning activity contains the steps of learning activities that determine the activity is able to support or facilitate the learning of 21st century skills competencies.

Keywords: 21st Century Skills, The 4Cs, Buku Tematik Terpadu, Elementary School

1   Introduction

The education that is needed for future generation is education that teaches 21st century skills [1]. Therefore, education in Indonesia in the last two decades has continued to move to align itself with global demands for 21st century learning. The 2013 curriculum, which is currently still being applied in some of the schools, has the relevant goals to the 21st century learning concept that is to prepare students to have 21st century competencies. Up to today, based on Suto and Eccles, (2014) there are 10 21st century

life skills that have developed until present day which is divided into several categories, namely ways of thinking, ways of working, tools for working, ICT literacy and living in the world.

The most common 21st century skills are known as the 4Cs, those are creativity, critical thinking and problem solving, communication, and collaboration. Based on the analysis of Scoot (2015) these 4 skills have been adapted in the framework of 21st century learning by P21 into The 4Cs, namely critical thinking (critical thinking), creativity (creativity), communication (communication), and collaboration (collaboration) which are included in the learning and innovation skills. These 21st century skills competencies need to be mastered by students in schools for them to face the challenges and life demands in the new era of society 5.0 [2].

The mastery of 21st century skills itself has been pursued in the learning process starting from the basic education level in Indonesia [3]. The learning process inside the classroom includes the teaching activities by teachers and learning activities by students or widely known as KBM (Teaching and Learning Activities). KBM inside the classroom is designed to provide a learning experience that involves mental and physical processes through interactions between students and learning resources in order to achieve learning objectives [4]. Based on the results of the FGD, one of the learning resources that has been used since the 2013 Curriculum was implemented is a study companion book which indirectly compulsory to use by the schools. In accordance with the elementary schools characteristics of learning regulated in *Permendikbud* No. 22 of 2016 concerning the standard of primary and secondary education processes, namely competence and overall learning using integrated thematic learning. Hence, the Ministry of Education and Culture has published a pair of teacher and student package books entitled *Buku Tematik Terpadu K13* which contain teaching and activity-based materials. The urgency of this book According to Afandi and Aka (2019), is without the *Buku Tematik Terpadu K13*, learning seems undirected.

Based on the results of the preliminary study after the survey, it was found that in public elementary schools in Surakarta, the *Buku Tematik Terpadu K13* published by the Ministry of Education and Culture is used as a mandatory companion book for students for KBM in the class with a percentage of 100%. This is because schools are required to provide students with at least one student companion book at a minimum price that is same with the price of the book. The *Buku Tematik Terpadu K13* has the advantage of using an activity based learning (ABL) approach and contains learning activities steps for teachers and students. Based on what is stated in the book itself that in order to support the achievement of curriculum goals, an activity-based thematic book is needed to encourage students to achieve predetermined standards [6].

ABL or activity-based learning is a learning method/approach focuses on developing active student participation in learning theories or concepts by using various types of activities and experiences in diverse learning environments in schools [7]. The benefits of implementing activity-based learning include increasing self-direct learning abilities, creativity and building knowledge, learning motivation, improving student learning outcomes in the cognitive, affective, and psychomotor domains so that students are able to learn actively and comprehensively [7]–[9]. Therefore, activity-based learning is needed in today's education that is more student-centered and practical and not just

memorizing lessons [10] and thus activity-based textbooks are important to accompany the K13 learning process. Based on document studies conducted on new textbooks, the 2022 prototype curriculum, the use of activity-based textbooks is still even applied in the newly created curriculum, namely the 2022 prototype curriculum (independence curriculum). Though, in its implementation there have been some improvements.

The use of activity-based books can also assist students towards active learning. Active learning refers to the level of academic involvement of students inside and outside the classroom or involving students actively (not passively) [11]. The use of activity-based *Buku Tematik Terpadu K13* is an effort to realize the active learning so that students get the best experience in *KBM* at school. Therefore, this study took the subject of learning activities in the *Buku Tematik Terpadu K13* for class VI, which is a highest grade level in elementary schools. The basic difference of distinguishing between low class and high class is in the approach used that is interdisciplinary for low class and multidisciplinary for high class.

Because of the importance of activity based learning that uses teaching materials in the form of activity-based books, an analysis study of *Buku Tematik Terpadu K13*, learning activities is carried out based on the 21st century skills competency "The '4Cs'" which consists of critical thinking, communication, collaboration and creativity skills. The results of this study also can be used as a consideration in updating the new curriculum textbooks, namely the 2022 prototype curriculum/independence curriculum.

2   Research Method

This research was conducted in Surakarta with the subject of Integrated Thematic Book Class VI, Theme 7 Leadership. The research object was the learning activities in the book. The instrument used is a document analysis sheet. The sources of the study came from the teacher's book and the student's book. Data analysis was carried out using an interactive model by Miles and Huberman (1984) which consisted of three stages, namely data reduction, data presentation, and conclusion drawing [12]. The research data is a description of the emergence of 21st century skills competency content, The 4Cs in learning activities in the Buku Tematik Terpadu K13.

3   Results and Discussion

Learning activities are a series of plans that have been prepared for students to do in the learning process in the form of student interactions with other learning components with the aim of achieving learning outcomes that was previously planned including increasing student competencies, knowledge and skills [13]–[16]. Learning activities that contain 21st century skills competency learning are needed in 21st century learning [2], [3], [17]–[20]. Judging from various literatures, there is no definite definition that describes 21st Century Skills competencies.

There is a conceptual order that 21st century learning is ideally directed at the 4C component (Anderson (in Hadaina, et al., 2014)) which means that the 2013 curriculum should contain these components. Quoted from the Buku Tematik Terpadu K13 by the

Ministry of Education and Culture that, to support the achievement of curriculum goals, activity-based thematic books are needed to encourage students to achieve predetermined standards. Therefore, thematic books are assumed to contain these 4C skills and are proven in the research that has been done.

Learning activity in the *Buku Tematik Terpadu K13* is a guide in learning because it contains activity steps for teachers (through teacher books) and students (through student books) [21]. Therefore, learning activities become the object of analysis containing the learning of 4C skills in the *Buku Tematik Terpadu K13*. Learning activities were analyzed using a document analysis guideline instrument based on the 4Cs proficiency indicators on 21st Century skills competencies. Based on the results of the analysis using research instruments, it is known that each unit of learning activities facilitates different skills depending on the steps of the activities in it. There are also result differences between the teacher's book and the student's book for in some learning activities only one of the identified books meets the indicators used. The following is a simple connection analysis chart for each learning activity with the skills it facilitates.
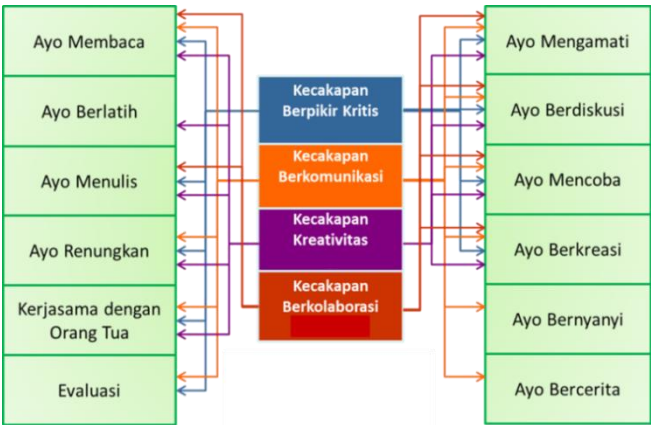
Fig. 1. The relationship between learning activities and The 4Cs skills in 21st century skills.

Figure 1 shows the overall chart of learning activities in the book that facilitates each skill that is taught to students. Learning activities that facilitate critical thinking skills are indicated by blue arrows, learning activities that facilitate communication skills are indicated by orange arrows, while learning activities that facilitate creativity skills are indicated by purple arrows, and learning activities that facilitate collaboration skills are indicated by red arrow. Each learning activity contains the steps of learning activities that determine the learning activity unit capable of facilitating and supporting a skill. The following is a discussion related to learning activities that facilitate each of The 4Cs' skills in 21st century skills competencies.

3.1   Ayo Mengamati Activity

Ayo Mengamati activity in the book contains the operational steps of activities including observing certain pictures or objects such as oneself and others, observing and identifying parts, observing examples, discussing observations, and asking questions. Observing activity guides students in the process of discovering what is observed. For example, in the activity of observing pictures, students are directed to find certain things that occur in the picture and then conclude it. Therefore, this learning activity can be regarded as student-centered discovery learning.

Discovery is a form of problem solving [22]. Learning activity such as discovering is a learning for critical thinking skills because critical thinking is a cognitive skill that leads to the goal of solving the problem systematically. [23]–[25]. Therefore, the activity of Ayo Mengamati in the book supports the learning of critical thinking skills the most.

The discovery activity step is accompanied by processing the information obtained by students from the observed object. The activity of processing the information provided by the teacher regarding the object of observation is a cognitive process of students that requires communication skills. Moreover, discovering activity that carries out in groups can also train students' collaborative attitudes so that it includes facilitating collaboration skills.

3.2   Ayo Berdiskusi Activity

Discussion activity contains the operational steps of activities including identifying text, discussing, answering questions, presenting, and planning activities. Discussion activity can make individuals adopt many new ideas and learn to respect differences of opinion [26] so that these activities meet indicator 3.a, namely "being able to be open and responsive to new and different perspectives". Based on the creative process, Walles in Solso et al mentions that there are 4 stages of the creative process, namely preparation, incubation, illumination and verification. At this illumination stage, individuals gain insight into a problem that underlies the creativity. Open-mindedness is an effort to gain in-depth understanding because understanding can be obtained from various parties. Discussion activity is one of the creative processes in which students are initially given a problem to solve, both in the form of products and ideas. Discussion activity can also leads to brainstorming activities. This activity is one of the efforts to create conditions for students to be able for bringing out their creativity.

Discussion activity is essentially carried out in groups. Several leading researchers have highlighted the learning benefits for individuals from interactions with other humans, suggesting that placing learners in a social context is a core strategy for developing complex cognitive skills such as problem-solving competency [27]. Based on Vygotsky's sociocultural theory, social interaction plays an important role in the development of individual knowledge, the interaction of students with their class also plays an important role [28]. If a student has different views of the problem, collaborative learning can combine their thoughts. Therefore, collaborative skill is mostly supported by Ayo Berdiskusi activity.

Discussion activities are also in accordance with the view of gestalt theory in problem solving. According to the Gestalt psychology view, by thinking more about the problem or identifying it from various different points of view, the "correct" view can be found [29]. In discussion activity, students carry out activities such as combine the understanding and information that each of them has and put them together in order to achieve problem solving goals. Therefore, the Ayo berdiskusi activity supports the learning of critical thinking and communication skills with others the most.

3.3   Ayo Mencoba Activity

Learning activity Ayo Mencoba has the example of the operation steps of the activity such as try to imitate the model, to use information tools, and present the results of the experiment. Generally, the series of Ayo Mencoba activity is almost similar to other activities. This makes the activity ambiguous with the Ayo Berkreasi activity. The boundary that is found between the Ayo Mencoba and Ayo Berkreasi activities are the operational steps of the Ayo Mencoba that focuses on the experimental process of students while Ayo Berkreasi activity focuses on creating works and developing ideas.

The experimental activities in learning is delivered in one of a historical perspective, namely Thorndike that conducted continuous trials to solve a problem [29]. Therefore, the activity tries to direct students to try to use critical thinking skills to find their goals in problem solving. Because of this learning activity uses the principle of trial and error which requires continuous activity, the Ayo Mencoba activity is presented proportionally on each sub-theme and learning.

In addition, the Ayo Mencoba activity has some learning activities for students to present and understand information using tools such as concept maps, charts, maps, and illustrated images. Also, other findings in the Ayo Mencoba learning activities are the use of information technology and the internet. Based on these findings, it can be concluded that the use of technology in the form of tools in communication skills has been directed at the Buku Tematik Terpadu K13. Learning technology is built based on principles drawn from various theories, one of which is communication theory. David K. Berlo developed the S-M-C-R (Sources, Message, Channel, and Receiver) communication model [30]. The concept of the model places the five senses as a communication channel or tool for receiving information. Students who are taught to use learning tools such as concept maps, maps, and diagrams train their visual senses through eye catches indirectly.

The Ayo Mencoba activity also contains the most operating steps to present the students' experiments results. Therefore, the most identified skills in these learning activities are communication skills. According to Binkley (2010), communication skills are part of the learning process by using appropriate means (intonation, gestures, mimicry, etc.) to support oral communication as well as by understanding and producing various multimedia messages (written or spoken language, voice, music). , etc.).

3.4   Ayo berkreasi Activity

The Ayo Berkreasi activity contains the operational steps of idea-building activities, realizing ideas, creating works, discussing groups for making work projects, and presenting works. Ayo Berkreasi activity involves students in thinking and working creatively. In simple terms, creativity can be called as the power of creativity [31]. According to Trilling and Fadel (2009), creativity is created from the power that exists since humans are born, namely imagination. Therefore, the result of the analysis shows that the most dominant skills included in these activity is the creativity skills.

Creativity itself is a cognitive activity that produces a new view of problem and is not limited to pragmatic results [33]. According to Gestalt psychology point of view, there is a concept called functional fixedness [33]. The concept explains that the ability of creativity has a barrier, namely a pragmatic thought where the function of one object is only functioning as usual. Therefore, supporting creativity learning in students means expanding students' ways of thinking.

The example of creative learning activities are creating work products from other products, or creating work products from used goods. As in learning sculpture making in P.3/ST.3, students are directed to make sculptures from unusual materials such as soap and candles. This kind of activity teaches students the theory of creativity investment, namely "buy low, sell high". Using cheap goods and make it into goods that have a high selling value is the result of creativity. The creativity learning process from the books is also carried out in a structured way, starting from the formation of a framework or work plan for making works in one lesson and making works and presenting works in other lessons.

Also, in the activities such as Ayo Berkreasi and Ayo Mencoba in the previous discussion, many of these activities are also done in groups because they contain project-based assignment activities. Based on the previous research, it was found that Project based learning trains students' collaboration skills [34], [35]. This activity is carried out to train collaboration skills because it includes self-regulation activities and groups in working on the common goals project.

3.5   Ayo Bernyayi Activity

The Ayo Bernyanyi activity contains the operational steps of activities related to songs or singing. Songs can be used by teachers as an effective thematic learning media for students' learning interest so that it affects student learning outcomes [36], [37]. Also, Ayo Bernyanyi activity in a book is a teacher's medium in delivering learning and as a learning material itself.

The operation of the activities is to read the lyrics of the song and then retell the contents of the poem. Songs can make students understand easily about the lessons given by the teacher [37]. In addition, the characteristics of songs learning are also as language learning for students [38]. Songs are also a medium to convey messages through their lyrics [39]. Therefore, learning to sing songs also trains students' communication skills. Based on the results of the analysis, the Ayo Bernyanyi activity has been the most identified as facilitating communication skills.

3.6   Ayo Bercerita Activity

Ayo Bercerita activity in an integrated thematic book only appears once with the operation step of presenting the result of concept maps work that have been made in other previous activities. Based on previous research, the competencies that have been developed in Ayo Bercerita learning activity are critical and communicative thinking [40]. According to the previous discussion in the Ayo Mencoba activity, the operational steps of the presentation activity were identified in facilitating communication skills.

Communication is the activity to deliver messages from the sender to the recipient of the message. Harold Lasswell in his work, The Structure and Function of Communication in Society says that a good way to explain about communication is to answer the following questions: Who Says? Say what? In Which Channel? To Whom? With What Effects? Based on the Lasswell paradigm, the communication process is simply the presence of a communicator who create a message and deliver it through a certain channel to the recipient that causes a certain effect [41].

Groups oral presentation is a part of communication where the group of presenters are the creators of the message (content), then it is delivered verbally (method) using certain media presentation that is the concept maps of "Let's talk" learning activities to classmates. Therefore, this activity develops students' communication skills.

Communication skills basically include at least in general, the skills of reading, writing, speaking and listening. However, what is needed in 21st century education is also the use of technology in communication, Power Point presentation is the least media that most commonly used for presentations present day [42].

3.7   Ayo Membaca Activity

Reading activity contains operating steps related to reading. In addition to reading activity, there are operational steps for question and answer, and observing illustrated images in reading. Reading activity is closely related to written communication. This is because the purpose of the student book was created is for student learning companion in the form of written/text information [6]. Therefore, the Ayo Membaca activity contains at the most communication skills. Based on the information processing theory, Ebbinghaus, who initiated verbal learning, stated that learning is a gradual strengthening of associations between verbal stimuli. Meaningful and repetitive verbal stimuli are needed continuously in the receiving information process [27].

There is also a question and answer activity related to reading in Ayo Membaca activity. The teacher's activity in asking and providing feedback in the student's book can be said as a stimulus for students. Based on the behaviorism theory of education, a stimulus is needed for a person to learn. The stimulus given by the teacher in teaching practice based on learning activities in student books is not in the lectures format but rather in apperception, questions and directions.

This agrees with Thorndike's identical element theory which does not support the provision of facts and concepts directly by the teacher. The teacher's questions in the form of apperception at the beginning of learning are based on the theory of apperception, J.F. Herbart who states that the same thoughts will reinforce each other

and be maintained consciously [43]. Therefore, the communication formed from the teacher's apperception questions and student responses work for linking between one learning and the students' previous learning. Based on the research by Rosiyanti and Purnomo (2019), there is an effect of using learning by applying the principles of the behavioristic theory to students' critical thinking skill.

3.8   Ayo Berlatih Activity

Ayo Berlatih activity that only appears twice in the book have some operating steps to practice, first is to practice to read a speech text and to dance in a group. Practice activity requires a practical training. Therefore, this activity requires as well as trains the creativity of students. Activities carried out simultaneously like the other activities are able to train students in collaborating.

   Based on the Learning theory oriented to the flow of behaviorism, an activity that only appears twice is inversely proportional to the law of exercise. According to the law, activities or exercises that are carried out repeatedly will increase students' mastery of these activities. Therefore, even though it only appears twice in the book, the activity provides instruction with long-term goals as in ST.2/P.6 dance practice aims to be staged at the end of the year and students are instructed to practice diligently for the next practice.

3.9   Ayo Menulis Activity

The Ayo Menulis activity contains the steps of writing operations which are integrated with activities of sharing opinions, answering questions, and creating works both by individually and in groups. Mastery of writing skills for students is needed to carry out a series of Ayo Menulis activity. Writing activity is one of the applications of the cognitive learning process [27]. There is a model found in accordance with the direction of writing activities in the Buku Tematik Terpadu K13, that is the model developed by Newell and Simon (1972) namely problem rhetoric, planning, goal setting, translation, and review.

   An example from the book is in one of the learning activities to write a speech following a certain example. The rhetoric of the problem presented in the book contains the operational steps of the teacher's activities in asking and answering questions before writing operations. After these activities, there are teachers' activities in guiding students to identify the existing sample speech texts aims for students to understand the elements needed in the speech text (planning). Next, students are given the task of making speeches (setting goals) and then making their own speeches (translation). Furthermore, as a review, students are encourage to do other learning activities (Ayo Berlatih) to read their speech for their friends.

   Writing activity with this model involves the cognitive aspects of students to do reasoning and creating so that it requires critical thinking skills and creativity. Besides, the ability to communicate in writing is a strong basis in carrying out the Ayo Menulis learning activities. According to Binkley (2010), one of the indicators of

communication skills is being able to write various types of texts for various purposes. Therefore, the Ayo Menulis activity facilitates communication skills the most.

3.10   Ayo Renungkan Activity

The Ayo Renungkan activity in the Buku Tematik Terpadu K13 has some operating steps for learning activities that are same for each lesson in the teacher's book. Broadly speaking, there is a class discussion step to conclude the lessons learned and reflect on the knowledge, attitudes, and skills acquired.

Based on the results of the analysis, the Ayo Renungkan activity is the most dominant activity in facilitating the learning of critical thinking skills because it contains the activities for students to learn in making conclusions. Critical thinking is one of the higher order thinking skills (High Order Thinking Skills / HOTS) [23] and according to Bloom's cognitive theory, the verb "conclude" in the context of reflection activity, after being analyzed it is concluded that it can be considered as the Operational Verbs at the evaluation and analysis level on the dimensions of cognitive processes. There is a teacher asking questions activity that is contained in the Ayo Renungkan activity with the aim of stimulating students to answer the question, such as "what knowledge, skills and attitudes have been learned by students", based on the perspective of the knowledge dimension, this question is included in the metacognitive dimension. Based on the crossing between the dimensions of cognitive processes and the dimensions of knowledge in viewing the Ayo Renungkan activity, this activity falls into the realm of HOTS [23]. Therefore, the concluding activity in Ayo Renungkan activity also supports the learning of critical thinking skills. Moreover, In addition to critical thinking skills, based on the research of Ismayanti et al (2020), the application of the final learning reflection strategy can improve students' creative thinking skills.

3.11   *Kerjasama dengan Orang Tua* Activity

Collaboration with parent activity is one of the unit activities carried out by students with their parents. Generally, this activity supports the idea of Ki Hajar Dewantara in the concept of the Three Education Centers. The three education centers acknowledge the existence of educational centers that affect children's growth and development that is schools, families, and communities [47]. Ki Hajar Dewantara explained that optimizing a child's competency is the responsibility of all elements around the child and the family role is the main learning environment for children [48]. Therefore, in the Buku Tematik Terpadu K13 has a learning collaboration with parents.

Based on the results of the analysis, this activity facilitates the most communication skills. According to Albert Bandura's social cognitive theory, almost all information received by individuals is obtained from interactions with other people [29]. The theory supports that language processes and social interaction with other people are important factors in learning. Activity that involve parents put parents as source persons, mentors, and companions for students.

Collaborative activity with parents also contains problems that require students' solutions. The example is the operational step of observing a deliberation activity

carried out in the community. Therefore, Collaborative activity with parents requires critical thinking skills (as in the Ayo Mengamati activity). The role of parents in the operational step of community environmental observation activities at home are parents become the object of resource persons and/or mentors so that students get the information they need. Therefore, this learning activity trains communication skills the most compared to other skills.

3.12   Evaluation Activity

Evaluation activity is the activity that contains evaluation questions in student books. Evaluation is an attempt to obtain information about student learning outcomes comprehensively, both knowledge, concepts, attitudes, values, and process skills [49]. Evaluation is an identification activity to see the achievement of a planned program [50]. Therefore, the aims of evaluation activity in the book is to find out whether students have mastered the learning that students do previously, proven by the activity that appear at the end of the last lesson for each sub-theme.

One of the functions of the textbook itself is to provide evaluation and remedial materials (Pulungan, 2020). Questions in the book are tools that used for written tests in the descriptions format. According to Sudijono (2015) a written test is a test in which the questions are presented in writing and students as the answerers give their answers in writing format. These questions require writing skills which are also a communication skills in answering them. Therefore, the dominant evaluation activity was identified in facilitating communication skills.

In addition, the ACER Critical Thinking Framework generally defines that analyzing and evaluating are also included in critical thinking [53]. Evaluation activity contains questions that are categorized as requiring student' level of cognitive understanding. Based on Bloom's taxonomy, the questions in the Buku Tematik Terpadu K13 fall into the cognitive-1 category with the remembering operational verb [54]. Siswanto (2017) argues that the test contains questions aims to measure the level of understanding. Students need an effort to understand, remember and memorize the material they learn to answer the questions in the problem. Therefore, the skill identified is critical thinking skills.

4   Conclution

This study analyzes the learning activities in the *Buku Tematik Terpadu K13 Class VI Theme 7 Leadership* using an instrument of the 4Cs skill indicator guideline. The results obtained from the document analysis found that each unit of learning activities contains the steps of learning activities that determine the activity can support or facilitate the learning of 21st century skills competencies.

Based on the results of the discussion, the operational steps of learning activities that support and facilitate the learning of the 4Cs skills on 21st century skills competencies in the *Buku Tematik Terpadu K13* Class VI Theme 7 Leadership are as follows:

1. Critical thinking skill was identified as the most included in the *Ayo Renungkan* activity (66 findings in teacher books and 48 in student books) with the steps of concluding activities and reflecting on aspects of students' knowledge, attitudes and skills in learning.
2. Communication skill was identified as the most included in the *Ayo Membaca* activity (55 findings in the teacher's book and 36 findings in the student's book) with the steps of reading learning activity, asking questions related to reading, and observing pictures in the text.
3. Creativity skill was identified as the most included in the *Ayo Berdiskusi* activity (16 findings in the teacher's book and 13 findings in the student's book) with the steps of group discussion and group presentation activities.
4. Collaborative skill was identified as the most included in the *Ayo Berdiskusi* activity (16 findings in the teacher's book and 13 findings in the student's book) with the steps of group discussion learning activities

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