Thematic Learning Based on Critical Thinking Skills using Blended Learning System in Elementary School

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A B S T R A K

Pembelajaran di masa pandemi membutuhkan inovasi agar pembelajaran berjalan dengan baik dan mampu mengembangkan keterampilan berpikir kritis siswa. Inovasi dalam pembelajaran salah satunya dengan menerapkan blended learning system dalam pembelajaran tematik. Tujuan dari penelitian ini untuk menganalisis perencanaan, pelaksanaan, dan hasil pembelajaran tematik berbasis keterampilan berpikir kritis menggunakan Blended Learning System (BLS) pada peserta didik kelas V di sekolah dasar. Jenis penelitian ini deskriptif kualitatif menggunakan pendekatan studi kasus dengan subjek penelitian 37 peserta didik kelas V sekolah dasar. Teknik pengumpulan data dalam penelitian ini melalui observasi secara langsung, wawancara, dan dokumentasi berupa data yang berkaitan dengan penelitian guna memperkuat informasi. Data yang telah terkumpul kemudian dikelompokkan dan divalidasi dengan teknik triangulasi sumber dan triangulasi teknik, data dianalisis dengan langkah reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian ini yaitu: 1) Perencanaan pembelajaran tematik berbasis keterampilan berpikir kritis dengan blended learning system di sekolah dasar diawali dengan penyusunan dokumentasi kurikulum, kemudian kegiatan sosialisasi, selanjutnya dilaksanakan kegiatan IHT (In House Training), dan penyusunan silabus dan Rencana Pelaksanaan Pembelajaran (RPP) tematik berbasis keterampilan berpikir kritis. 2) Pelaksanaan pembelajaran tematik berbasis keterampilan berpikir kritis dengan blended learning system memadukan pembelajaran tatap muka dan pembelajaran online yang mampu mengakomodasi kemampuan berpikir kritis peserta didik melalui rangkaian kegiatan pembelajaran yang diterapkan. 3) Hasil pembelajaran tematik berbasis keterampilan berpikir kritis memperoleh kategori baik yang mencakup penilaian aspek kognitif, afektif, dan psikomotorik.

A B S T R A C T

Learning during a pandemic requires innovation so that learning runs well and can develop students' critical thinking skills. One of the learning innovations is applying a blended learning system in thematic learning. This study aimed to analyze the planning, implementation, and thematic learning outcomes based on critical thinking skills using a blended learning system for fifth-grade students in elementary schools. This type of research is descriptive qualitative using a case study approach with a subject of 37 fifth grade elementary school students. Data collection techniques in this study through direct observation, interviews, and documentation in the form of data related to research to strengthen the information. The data that has been collected is then grouped and validated by source triangulation and triangulation techniques. The data is analyzed by data reduction, data presentation, and conclusion drawing. The results of this study are 1) Planning of thematic learning based on critical thinking skills with a BLS begins with the preparation of curriculum documentation, socialization, then IHT (In House Training) activities, and the preparation of syllabus and Learning Implementation Plans (RPP) thematic based on critical thinking skills. 2) Implementation of thematic learning based on critical thinking skills with a blended learning system combining face-to-face learning and online learning that can accommodate students' critical thinking skills through a series of applied learning activities. 3) The results of thematic learning based on critical thinking skills obtained a good category which includes an assessment of cognitive, affective, and psychomotor aspects.

1. INTRODUCTION

Learning during a pandemic requires innovation so that thematic learning runs well and can develop students' critical thinking skills. One of the learning innovations is applying a blended learning system in thematic learning. Education aims to create quality, faithful and devoted students to God based on cultural and Pancasila values. Primary education aims to develop students' skills, attitudes, and knowledge (Sujana, 2019; Wuryani & Yamtinah, 2018). It can be concluded that the purpose of education is

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a continuous process that aims to develop children's abilities to become quality human beings who have religious values based on cultural values and Pancasila. The Covid-19 pandemic in Indonesia impacts changes in the learning order, so learning appropriate to the situation and conditions is needed to provide a meaningful learning experience for students. The Covid pandemic has impacted the country's welfare, including the education sector, because classroom learning will be affected, and it is a big threat to human life. The covid-19 pandemic has had a devastating impact on education, creating barriers for students currently pursuing education and potentially changing their future career paths (Dhanalakshmi et al., 2021; Miani et al., 2021; Mulugeta, 2021).

The development of education is realized by the 2013 curriculum applied in Indonesia. The curriculum is an integrated thematic-based learning consisting of more than one subject based on a theme. Thematic learning is learning with no separate topics, is flexible, fosters talent, critical thinking skills, and students' social abilities. Thematic learning aims to create meaningful and comprehensive learning and plays an essential role in increasing students' attention, learning activities, and understanding of school learning materials (Ananda & Fadhilaturrahmi, 2018; Narti et al., 2016; Novika Auliyana et al., 2018). It can be concluded that thematic learning is learning based on a theme that contains several integrated learning contents so that there is no separation between subjects and is flexible, which aims to foster critical thinking skills, creativity, social skills, as well as interests and talents according to students' abilities. In the era of the 21st century, students are expected to have critical thinking skills to solve problems that occur in social life. A person with critical thinking skills can analyze and make decisions well when encountering a problem. It is necessary to develop a learning model centered on students improving critical thinking skills so that it is easier to build an understanding of learning materials and students are more active in finding their knowledge (Lieung, 2019; Simanjuntak & Sudibjo, 2019). Government regulation number 20 of 2016 concerning graduate competency standards states that elementary school graduates are expected to have critical thinking skills.

Thematic learning in elementary schools is expected to accommodate students' critical thinking skills through appropriate knowledge of the current situation. Thematic learning based on problem-solving skills can improve the learning achievement of elementary school students (Syofyan et al., 2019). Based on this, it is necessary to develop thematic learning to realize the nation's next generation who have critical thinking skills to solve problems in the community. During the pandemic and post-covid-19 pandemic in Indonesia, education is needed to accommodate critical thinking skills so that effective and efficient learning can be realized to develop students' critical thinking skills at school. One of the learning systems in the current situation is a blended learning system. This is appropriate in the covid-19 pandemic situation because it can facilitate learning and is expected to accommodate critical thinking skills because students must be active in participating in learning activities.

A blended learning system is a learning system that combines face-to-face and technology-based learning online. According to students learning materials, teachers can use technology in the learning process through mixed learning. With efforts to prevent the spread of the new coronavirus, online learning has become a teaching tool to catch up with the curriculum (Fazal & Bryant, 2019; Muthuprasad et al., 2021; Widiara, 2018). Blended learning as a solution to learning problems and improved learning outcomes in elementary schools, students can gain meaningful learning experiences. A blended learning system in school can affect students' critical thinking skills (Anggraeni Anggian, Supriana Edi, 2019; Prescott et al., 2018; Seage & Türegün, 2020). It can be concluded that the blended learning system is a learning system that utilizes technology that aims to develop critical thinking skills and provide meaningful experiences for students while studying in elementary school.

Based on the observations, SD Negeri 9 Boyolali is a superior school in Boyolali which became a thematic learning pilot project using a blended learning system as a step of development and innovation in learning and as a way to break the chain of the Covid-19 virus in the elementary school environment. It was found that the implementation of thematic learning with a blended learning system was supported by 100% of students in high grades having mobile phones and internet access, and we were able to support the implementation of the learning process during the pandemic. In addition, the characteristics of students who are technology literate facilitate the learning process, evidenced by the fact that almost all students can access and use their cell phones properly. The world is always changing and evolving, so we must always aspire to move forward and try to develop a learning system in schools. Internet facilities can facilitate the learning process that will benefit students and can encourage students to learn (Dhanalakshmi et al., 2021; Sindiani et al., 2020).

However, in the implementation of thematic learning, there are still problems. Namely, some teachers have low mastery of technology. Problems must be resolved immediately so that thematic learning through the blended learning system can accommodate students' critical thinking skills in elementary school to achieve educational goals. Based on the above, good learning management is needed. Teachers

need to organize creative learning by applying a BLS to integrate critical thinking skills (Prafitasari et al., 2021). Stages of thematic learning in elementary schools include planning, implementation, and assessment of learning (Suhartono, 2021; Syaifuddin, 2017).

This study aims to analyze the implementation of thematic learning based on critical thinking skills with a BLS in elementary schools, including planning, implementation, and the results of the thematic learning assessment based on critical thinking. This research can be used as reference material for other elementary schools in Indonesia regarding thematic learning during the pandemic and post-covid-19 pandemic. The implementation of thematic learning based on critical thinking skills with blended learning has implications for the development and innovation of thematic learning with a BLS that can accommodate students' critical thinking skills. This study recommends that teachers continue to develop competencies in interesting learning strategies and use technology in learning to follow the development of the situation.

2. METHOD

This research is descriptive qualitative with a case study approach that aims to analyse the implementation of thematic learning based on critical thinking skills using a BLS. The flow of this research is presented in Figure 1.
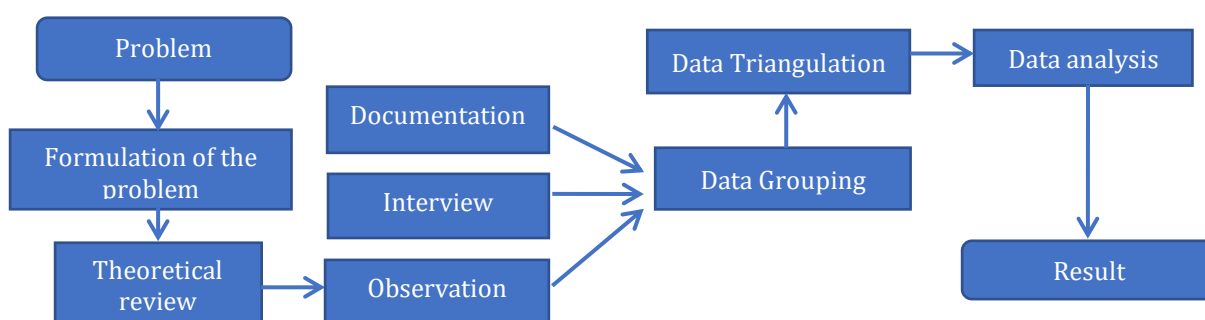

Figure 1. Research Design

The subjects of this study were 37 students and one teacher of class V at public elementary school 9 Boyolali Regency, Central Java, Indonesia. The data collection techniques in this study were through direct observation, interviews with the headmaster, teachers, and students of class V to obtain complete data, and thorough documentation in the form of data related to research to strengthen information. Validation of data by triangulation of sources and triangulation of techniques to determine the credibility of the data by using various techniques, including direct observation, documentation, and interviews. Then triangulate data sources obtained from school principals, teachers, and students. Data analysis was carried out using data reduction, data exposure, and conclusion (Miles & Huberman, 2014). The research instrument used is as shown in Table 1.

Table 1. Instrument Grid Critical Thinking Skills in Thematic Learning using BLS

No	Aspect	Description
1.	Problem Solving	1. Accurate 2. Problem analysis 3. Finding solution
2.	Self-Confidence	1. Able to answer question 2. Able to provide arguments 3. Present the work with confidence
3.	Open-minded	1. Have an attitude of tolerance 2. Respect the opinion of others 3. have broad insight

The results of the cognitive, affective, and psychomotor learning scores obtained were averaged then the scores were categorized according to the categories as shown in Table 2.

Table 2. Category of the Thematic Learning Assessment with the Blended Learning System

Predicate	Score Range			Category
	Cognitive	Affective	Psychomotor	
A	94 – 100	94 – 100	Very Good	Very Good
B	88 – 93	88 – 93	Good	Good
C	80 – 87	80 – 87	Enough	Enough
D	≤80	≤80	Need Guidance	Need Guidance

3. RESULT AND DISCUSSION

Result
Planning

Learning planning begins with preparing a school curriculum document that contains the school's vision and mission, school goals, curriculum content, learning load, and an educational calendar. Then socialization was carried out for parents of students through plenary meeting activities. IHT (In House Training) provides training to teachers related to learning management and increases teacher competence in using technology in learning. Furthermore, the preparation of the learning syllabus follows the current conditions (covid-19 pandemic) by teachers whom the principal accompanies. Finally, the teacher accompanied by the headmaster, prepares a Learning Implementation Plan (RPP) based on critical thinking skills by including operational verbs (KKO) C4 (analyze) and C6 (create) which accommodates one of the 21st-century skills, namely critical thinking skills.

Implementation

Implementation of thematic learning based on critical thinking skills with a blended learning system is a good category. Thematic learning can accommodate students' critical thinking skills, as evidenced during face-to-face and online learning. Students can analyze material, have confidence and have an open mind during the learning process. The implementation is presented in Table 3.

Table 3. Implementation of the Thematic Learning

Type of Learning	Time Allocation	Learning Media	Learning Resources
Face to face learning	Monday, Wednesday, Friday Session 1: 07.00 until 09.00 WIB Session 2: 10.00 until 12.00 WIB	LKPD, PowerPoint, and SCI (Smart Center Indonesia) electronic learning media.	Student thematic learning book and teacher thematic learning book.
Online Learning	Tuesday, Thursday, Saturday 07.00 until 12.00 WIB (Project-based learning)	WhatsApp application, zoom meeting, quizziz application, YouTube, google form, and SCI media.	Student thematic learning book, teacher thematic learning book, and internet access.

Outcomes

Thematic learning assessment using a blended learning system with authentic assessment includes an assessment of psychomotor, cognitive, and affective aspects with details of the results of the assessment as shown in Figure 2, Figure 3, and Figure 4.

Figure 2. Psychomotor Score Results

The assessment of the psychomotor aspect in Figure 2 obtained a good category with an average score of 88 and was able to accommodate students' critical thinking skills in elementary schools.
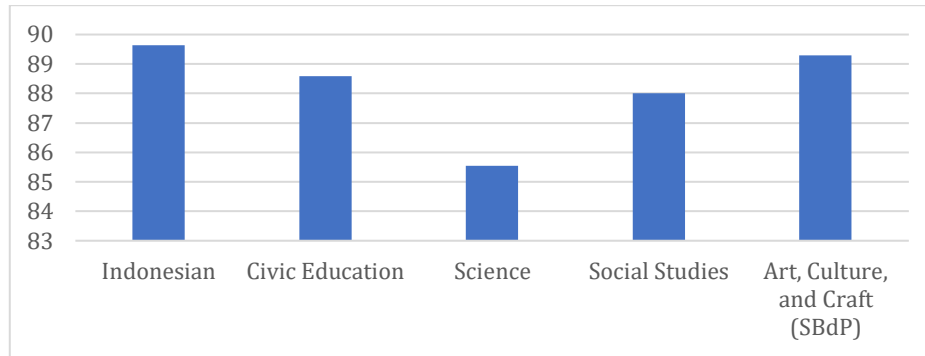

Figure 3. Cognitive Score Result

The cognitive aspect assessment in Figure 3 obtained a good category with an average score of 88.5 and accommodated students' critical thinking skills in elementary schools.
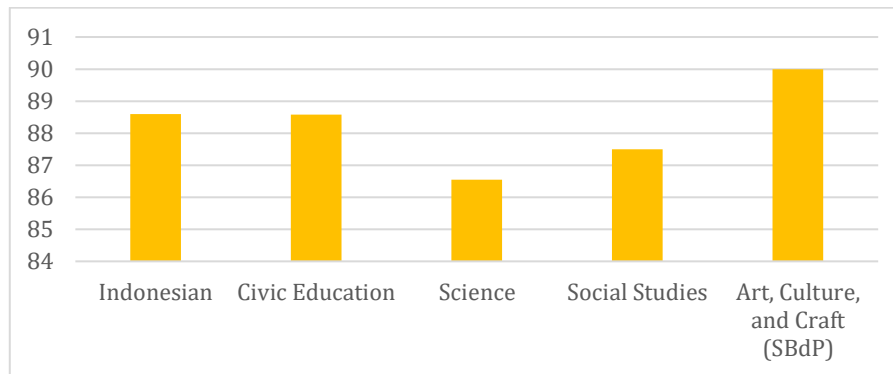

Figure 4. Affective Result

The affective aspect assessment in Figure 4 obtained a good category with an average score of 88.2 and accommodated students' critical thinking skills in elementary schools.

Discussion

The planning stage begins with preparing a school curriculum document containing the school's vision and mission, school objectives, curriculum content, learning load, and educational calendar. Thematic learning using a scientific approach can train students to develop and improve cognitive, affective, and psychomotor skills so that careful planning is needed. Learning in elementary schools has a great function and influence in building students' cognitive, affective, and psychomotor construct. Managing the learning system and determining appropriate learning strategies, curriculum, and materials can improve student participation and time efficiency (Vilda & Asmayani, 2021; Liana, 2020; Romadhon et al., 2019). Then the school carried out outreach activities to school residents regarding the learning process during the pandemic. Socialization activities for parents of students are carried out through plenary meetings held at the beginning of the semester to convey information related to learning preparation and provide understanding to students so that they can adapt to changes in the order of the learning process new normal era. Socialization helps give knowledge on blended learning systems to prepare engaging learning media (Martiarini & Lestari, 2020).

Schools conduct debriefing for teachers through In House Training (IHT) activities. This activity provides training to improve teacher competence related to blended learning system learning preparation. In-house blended learning training can add new insights about blended learning strategies that can be implemented in the classroom teaching process during the COVID-19 pandemic to become more varied and innovative. Teachers need training on using different tools and learning modalities in complementary and flexible ways, adapting to student needs. The teacher must create a work environment at home and use telecommunications for teaching (Indrawan et al., 2021; Penha et al., 2021; van Cappelle et al., 2021). Using

IT and the use of electronic learning devices are expected to support the learning process in schools. These activities include training on the use of the WhatsApp application, zoom meeting, google meet, google forms, quizziz, and other learning media. IHT is held in schools or other places using equipment and materials relevant to the problems faced to develop affective, cognitive, and psychomotor competencies. Blended learning system training is helpful for needs, and follow-up training requires adequate time and modules as learning handles (Ayuningtyas et al., 2017; Ivone et al., 2020).

The thematic Learning Implementation Plan (RPP) refers to Government Regulation number 14 of 2019. The preparation of RPP has a good category and contains a complete identity, the formulation of learning indicators uses Operational Verbs (KKO), C4 (analyses) and C6 (creates) to accommodate critical thinking skills. The formulation of learning objectives includes aspects of audience, behavior, condition, and degree (ABCD). The learning steps in the lesson plan already have activities that accommodate critical thinking skills, as evidenced by learning activities that include critical thinking skills such as analyzing and creating work. Critical thinking is students' ability to reason, express, analyze, and solve problems (Indraswati et al., 2020). Learning planning is a process of determining plans for learning activities that will be carried out in an integrated and systematic way. The plans made are poured into the lesson plan. The concept of problem-solving is part of critical thinking (Karakoc, 2016; Nainggolan, 2020). Assessment of thematic learning is carried out authentically, including cognitive, affective, and psychomotor. The authentic assessment aims to determine students' understanding and potential and can be used for planning improvement programs, enrichment, or counselling services (Novika Auliyana et al., 2018; Suhartono, 2021). Teacher competence in compiling syllabus and lesson plans is important. Assessment is an activity used to find out progress students from the beginning to the end of the learning used to prove the learning process. Knowledge assessment is used for written tests, oral tests, and project assignments with worksheets to measure the level of student mastery of KD. Psychomotor assessment is carried out using observation techniques, while skills assessment is used to determine students' skills in mastering KD (Novika Auliyana et al., 2018; Rahma & Fatonah, 2021; Susetya, 2017).

Thematic learning with a BLS based on critical thinking skills is combined with limited face-to-face and online learning (PJJ) to get a good category. Thematic learning can accommodate students' critical thinking skills. Students can solve problems, have self-confidence, and have an open mind during the learning process. Blended learning systems can support upcoming changes in learning to provide meaningful experiences centered on the needs and abilities of students (Dziuban et al., 2018; Lazem, 2019). A blended learning system is an important education method and effectively increases knowledge and learning quality. Blended learning can be applied using the following combinations 50/50 means 50% online learning and 50% offline learning advance (Abdullah, 2018; Alsalhi et al., 2019; Penha et al., 2021).

Implementing learning with a blended learning system is carried out by combining online and face-to-face learning. Face-to-face learning is carried out on Monday, Wednesday, and Friday, divided into two sessions. Each session is only attended by a maximum of 50% of the total number of students. Session 1 learning is held from 07.00 WIB to 09.00 WIB, followed by 18 to 19 students, and session two learning is carried out from 10.00 WIB to 12.00 WIB, followed by 18 to 19 students so that learning remains conducive and maintains health protocols. Sources and learning media used are student books, teacher books, LKPD, and SCI (Smart Center Indonesia) electronic learning media. Teachers in elementary schools can use thematic book teaching materials because they provide teaching materials according to the 2013 Curriculum. Applying thematic-based character education textbooks in thematic learning so that students do not feel bored or tired of studying (Sudiana et al., 2019; Wuryani & Yamtinah, 2018).

Online learning or distance learning (PJJ) is held on Tuesdays, Thursdays, and Saturdays from 07.00 WIB to 12.00 WIB with project-based learning. Students participate in independent learning accompanied by parents from their respective places of residence by utilizing electronic devices. Blended learning utilizes technology to support learning as an alternative path according to the local culture in a country. Effective learning can teach students to use communication tools via computers such as the internet (Resien et al., 2020; S. Yang, Allen, et al., 2021). Although learning is carried out remotely, it does not reduce students' enthusiasm for participating in thematic learning. Students can continue to study quietly from home, guided by the teacher and with parental assistance. The role of parents in assisting and guiding students to study at home is quite effective in overcoming student learning anxiety. Advances in Internet technology have changed how several classrooms can be combined so that they can be fully integrated with various electronic devices (Anggraeni et al., 2021; J. Yang et al., 2019).

Online learning utilizes several applications that can be accessed via mobile devices or laptops owned by students. These include the WhatsApp application, zoom meeting, quizziz application, YouTube, google forms and SCI media used as media and learning resources in the learning process. The application of the blended learning system requires teachers to be creative in using learning platforms in the form of YouTube links, videos, and PowerPoint. Student activity on google meet and parents accompanying

students during the pandemic with online learning. Blended learning systems create active learning to create more meaningful learning and can be used to support the learning process. In the era of the development of internet technology, it can be used for learning through WhatsApp groups, Google Class, Google Forms, and Zoom (Aritonang et al., 2021; Ni Komang Suni Astini, 2020; Risdianto et al., 2021).

Thematic learning outcomes with the blended learning system can accommodate students' critical thinking skills reflected in the learning assessment. Learning assessment uses a blended learning system through online and face-to-face learning in class and is flexible according to school conditions (Nasir, 2021; S. Yang, Carter, et al., 2021). The authentic assessment of thematic learning already covers the cognitive, affective, and psychomotor aspects. The assessment includes "affective involvement," "cognitive" involvement," and "psychomotor involvement," contributing to the learning experience for students (Xu & Zammit, 2020). The results of the cognitive domain assessment are in a good category, meaning that learning can accommodate critical thinking skills through HOTS (High Order Thinking Skills) questions. High order thinking skills learning is well designed and applied to increase knowledge and students' higher-order thinking skills (Kwangmuang et al., 2021). The results of the assessment of the affective domain get a good category, as evidenced by the work of students who get a good category. Psychomotor learning outcomes get a good category as evidenced by student learning outcomes that have shown critical thinking skills.

4. CONCLUSION

The implementation of thematic learning based on critical thinking skills with a BLS in elementary schools has a good category. Planning begins with the preparation of curriculum documents, socialization, IHT (In House Training), syllabus preparation and thematic Learning Implementation Plans (RPP) based on critical thinking by including operational verbs (KKO) C4 (analyze) and C6 (create) and learning objectives include aspects of audience, behavior, condition, and degree (ABCD). Thematic learning based on critical thinking skills with a blended learning system combines face-to-face and online learning to accommodate students' critical thinking skills through a series of learning activities that require active students through interesting and interactive activities that have good learning outcomes, including assessment of cognitive, affective aspects, and psychomotor. The obstacle faced was that some students were late in submitting assignments. Suggestions to minimize these obstacles are that teachers must always guide students in learning to remain disciplined and responsible and give awards to students who are timely in collecting assignments to increase student enthusiasm.

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