



A Scientific Approach Based on Critical Thinking in Explanatory Texts: Eleventh-Grade Students at Darussalam High School in Blokagung

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Article Info	Abstract
Received: 2026-04-07 Revised: 2026-05-19 Accepted: 2026-09-20 Keywords: <i>Scientific Approach; Critical Thinking; Explanatory Text; Independent Curriculum</i> DOI: 10.24256/ideas.v14i2.11672 Corresponding Author: Alfina Arafah lalaalfina27@gmail.com Tadris Bahasa Indonesia, Universitas KH.Mukhtar Syafaat, Banyuwangi, Jawa Timur	<i>The implementation of the Merdeka Curriculum emphasizes student-centered learning that supports the development of critical thinking skills. One learning approach considered relevant to achieving this objective is the scientific approach, particularly in teaching explanation texts. This study aimed to describe the implementation of the scientific approach in teaching explanation texts and analyze its role in developing students' critical thinking skills in Grade XI at SMA Darussalam Blokagung. This research employed a qualitative descriptive approach. The research subjects consisted of an Indonesian language teacher and Grade XI students. Data were collected through classroom observations, in-depth interviews, and documentation. The data were analyzed using the interactive model of Miles, Huberman, and Saldaña, including data reduction, data display, and conclusion drawing, while data validity was ensured through source and technique triangulation. The findings revealed that the implementation of the scientific approach was conducted systematically through the stages of observing, questioning, exploring, reasoning, and communicating in accordance with the principles of the Merdeka Curriculum. These learning stages encouraged students to participate actively in the learning process and supported the development of critical thinking skills, as reflected in their ability to identify important information, analyze cause-and-effect relationships, formulate arguments based on evidence, and communicate the results of their analyses systematically. The study concludes that the scientific approach contributes to the development of students'</i>

critical thinking skills in learning explanation texts and supports meaningful, contextual, and student-centered Indonesian language learning.

1. Introduction

Education is a consciously and systematically designed process to develop students' potential through learning activities focused on mastering knowledge, character building, and the development of skills necessary for life in society. In this context, learning is a vital part of the educational process because it is through the interaction between teachers and students that educational goals can be optimally achieved. Therefore, teachers are expected to be able to create active, meaningful, and learner-centered learning experiences so that students can build knowledge, develop thinking skills, and form attitudes that align with the demands of the modern era (National Education System Law, 2003; Fazli, 2023; Qalit et al., 2025; Hikmah, 2022).

However, Indonesian language instruction in schools is still often focused on the delivery of content, so that teachers primarily serve as sources of information, while students tend to be passive recipients of that information. This situation results in students having limited opportunities to analyze, evaluate, and connect their knowledge in depth. In fact, the Merdeka Curriculum calls for student-centered learning and encourages the development of critical thinking skills through contextual learning experiences (Agus et al., 2022). This phenomenon indicates that Indonesian language instruction still faces challenges in developing students' critical thinking skills, particularly with material that requires analytical skills.

Kurikulum Merdeka provides flexibility for teachers to design instruction according to the needs and characteristics of students through learning outcomes (CP) and differentiated instruction. One approach relevant to the implementation of *Kurikulum Merdeka* is the scientific approach, which emphasizes the activities of observing, questioning, exploring, reasoning, and communicating. This approach encourages students to construct knowledge independently through an inquiry process, enabling them to develop higher-order thinking skills, such as analyzing, evaluating, and drawing logical conclusions (Kurikulum Merdeka, 2025; Ujione, 2025).

In Indonesian language learning, the scientific approach is considered capable of supporting the development of critical thinking skills because students do not merely comprehend the content of the material, but are also trained to identify problems, ask questions, analyze information, and communicate their thoughts systematically. In this process, the teacher acts as a facilitator who guides students until they are capable of learning independently (Jarmita, 2020; Damanik, 2023).

Previous studies have shown that the scientific approach contributes positively to improving the quality of instruction. Agustin (2019) explained that the scientific approach is capable of enhancing critical thinking skills through the active engagement of students in the learning process. Damanik (2023) demonstrated that this approach is relevant for application in Indonesian language learning to develop students' analytical skills. Meanwhile, Putriani et al. (2022) revealed that the application of the scientific approach in teaching explanatory texts can improve students' understanding of the structure and content of the texts. In general, these studies indicate that the scientific approach contributes to the improvement of critical thinking skills, student engagement, and comprehension. However, previous research has primarily focused on learning outcomes, thus leaving a gap in explaining how the planning and implementation process of the scientific approach takes place in teaching explanatory texts within the context of *Kurikulum Merdeka*.

At the senior high school (SMA) level, one of the Indonesian language topics studied by grade XI students is explanatory texts. Explanatory texts aim to logically explain the process behind the occurrence of a phenomenon—whether natural, social, or cultural—based on cause-and-effect relationships. Learning explanatory texts does not only emphasize understanding the text's content, but also requires students to be able to analyze information, evaluate relationships between events, and coherently and objectively communicate their understanding. Therefore, the topic of explanatory texts has the potential to develop critical thinking skills when integrated with the scientific approach (Nurahayu & Samsudin, 2022; Putriani et al., 2022).

Nevertheless, the implementation of the scientific approach in Indonesian language learning still faces various obstacles, such as the teachers' limited competence in designing innovative instruction, inadequate facilities and infrastructure, low student literacy, and suboptimal critical thinking skills among students. Furthermore, research that comprehensively examines the planning process, the implementation, and the role of the scientific approach in developing critical thinking skills in explanatory text learning at the high school level—especially within the implementation of *Kurikulum Merdeka*—remains limited. These conditions highlight the need for a study capable of providing a more in-depth overview of the scientific approach's implementation in Indonesian language learning.

The novelty of this research lies in its scope, which not only describes the application of the scientific approach in Indonesian language learning but also analyzes the interrelation among instructional planning, instructional implementation, and the development of students' critical thinking skills on the topic of explanatory texts within the implementation of *Kurikulum Merdeka* at SMA Darussalam Blokagung.

Based on these conditions, this research aims to describe the planning and

implementation of the scientific approach in Indonesian language learning focusing on explanatory texts for grade XI at SMA Darussalam Blokagung, to analyze its role in developing students' critical thinking skills, and to identify the various obstacles as well as the efforts made by the teacher to optimize the implementation of the scientific approach in Indonesian language learning.

2. Method

This research uses a qualitative approach with a descriptive research type (Moleong, 2010). The qualitative approach was chosen because this study aims to gain an in-depth understanding of the implementation of a critical thinking-based scientific approach in learning explanatory texts in Indonesian language subjects, rather than to test hypotheses or make statistical generalizations. Qualitative research emphasizes the meaning of the learning process, classroom interactions, and the context of implementing the scientific approach in the Independent Curriculum (Nazir, 2005).

This research was conducted at SMA Darussalam Blokagung, Banyuwangi Regency. The research subjects included an Indonesian language teacher for grade XI and grade XI students from various majors. The selection of research subjects was done purposively with the consideration that grade XI has implemented the Independent Curriculum and studied explanatory texts, making it relevant for examining the application of a critical thinking-based scientific approach in Indonesian language learning.

The research participants consisted of one Indonesian language teacher who teaches grade XI and six grade XI students from the Science (IPA), Social Studies (IPS), and Language majors. The selection of students was done purposively by considering the representation of majors, diverse academic abilities, and active participation in learning explanatory texts. The selection of these participant characteristics aims to obtain rich data that can describe the implementation of the scientific approach from various perspectives.

The data sources in this study consisted of primary data and secondary data. Primary data were obtained directly through observations of the explanatory text learning process that applied the scientific approach, in-depth interviews with the Indonesian language teacher, and interviews with grade XI students regarding their experiences in analyzing and understanding explanatory texts. Secondary data were obtained from supporting documents, such as Independent Curriculum teaching modules, Learning Objective Flow (ATP), learning instruments, student assignment results and activities on explanatory texts, and literature relevant to the scientific approach, critical thinking, and explanatory text learning (Oktifa, 2023).

Data collection techniques used included observation, interviews, and documentation. Observations were conducted to directly observe the

implementation of explanatory text learning in the classroom, specifically student activities during the observing, questioning, exploring, reasoning, and communicating stages. In-depth interviews were conducted with the Indonesian language teacher to obtain information regarding the planning and implementation of scientific approach-based explanatory text learning, and with several students to explore their responses and experiences in developing critical thinking skills. Documentation was used to complement and strengthen the observation and interview data through the analysis of relevant learning documents (Coding Studio, 2023).

The research instruments included observation guidelines, semi-structured interview guidelines, and documentation. Observation guidelines were used to observe the implementation of the scientific approach stages, which include observing, questioning, exploring, reasoning, and communicating activities during the learning process. Interview guidelines were arranged in a semi-structured manner so that researchers had a list of main questions while still giving informants the flexibility to explain their experiences and views more deeply. Documentation was used to obtain supporting data in the form of teaching modules, Learning Objective Flow (ATP), student work results, photos of learning activities, and other documents related to the implementation of the research.

Data validity in this study was guaranteed through triangulation techniques, including source triangulation and technique triangulation. Source triangulation was carried out by comparing data obtained from teachers and students, while technique triangulation was carried out by comparing data from observations, interviews, and documentation to obtain credible and consistent data (Mekarisce, 2020).

This research also applied the principles of research ethics. Before the observation and interview processes were carried out, the researcher first sought approval from the school, teacher, and students as a form of informed consent. All informants received an explanation of the research objectives, research benefits, and their right to provide or withhold information during the research process. The identities of the students were disguised when presenting the research results to maintain the confidentiality and privacy of the informants.

The data analysis model used in this research is the interactive model of Miles, Huberman, and Saldaña (Admin, 2025), which consists of three main components: data reduction, data display, and conclusion drawing or verification. These three components are interrelated and occur cyclically during the research process.

Data analysis was conducted inductively using the interactive model of Miles, Huberman, and Saldaña, which includes data reduction, data display, and conclusion drawing. In the data reduction stage, the results of observations,

interviews, and documentation were transcribed, and then a coding process was carried out to identify themes related to the implementation of the scientific approach and students' critical thinking skills. The coding process was carried out by assigning codes to data with similar meanings, which were then grouped into categories, such as observing, questioning, exploring, reasoning, and communicating stages, as well as critical thinking skill indicators that emerged during learning.

Furthermore, the grouped data were presented in the form of descriptive narratives, tables, and interview excerpts so that the relationships between categories could be systematically understood. The final stage was carried out by continuously drawing and verifying conclusions through comparing the results of observations, interviews, and documentation to obtain credible, consistent, and scientifically accountable research findings.

3. Results

Implementation of Explanatory Text Learning Based on the Scientific Approach

Based on the results of observations and interviews with the Grade XI Indonesian Language teacher at SMA Darussalam Blokagung, Mr. Bahrowi, S.Pd., information was obtained that the lesson planning for explanatory texts had been prepared in accordance with the principles of the Independent Curriculum. The planning began with an analysis of Learning Outcomes (CP), which was then derived into the Learning Objective Flow (ATP) and outlined in the teaching module as a guideline for implementing instruction. The teacher explained that the material was selected based on its proximity to the students' daily lives so that it would be easier to understand and could encourage student engagement during the learning process.

Observation results indicated that the implementation of learning had integrated the five stages of the scientific approach, namely observing, questioning, exploring, reasoning, and communicating. Each stage was designed in the teaching module and implemented sequentially during the explanatory text learning process.

Table 1.1 Implementation of the Critical Thinking-Based Scientific Approach in Explanatory Text Instruction

Critical Thinking Indicator	Forms of Lesson Planning	Implementation in the Classroom	Indikator Berpikir Kritis yang Muncul
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Observing	The teacher prepares a contextual explanatory text and an observation sheet.	Students read the text and examine the phenomenon as well as the cause-and-effect structure.	Ability to identify problems and important information
Ask	The teacher designs provocative and reflective questions in the lesson plan.	Students ask questions about the processes, causes, and effects of phenomena.	The ability to formulate critical questions
Exploring	The teacher prepares group discussion and analysis activities.	Students analyze the structure and language features of the text.	Ability to analyze and compare information
Reasoning	The teacher guides students to formulate a conclusion based on the data in the text.	Students draw conclusions and explain cause-and-effect relationships.	Logical and argumentative thinking skills
Communicating	The teacher designs a presentation of the analysis results.	Students present the results of their discussions and respond to their peers' opinions.	The ability to express opinions systematically

Based on Table 1.1, the instructional process begins with the observation stage, in which the teacher presents an explanatory text related to phenomena in the students' immediate environment. Students read the text, identify the phenomena being discussed, and examine the cause-and-effect relationships within it.

The next stage is questioning. The teacher provides an opportunity for students to ask questions regarding the content, structure, or phenomena explained in the explanatory text. The questions raised by the students then serve as the basis for discussion in the subsequent stage of learning.

During the exploration stage, students work in groups to analyze the text structure, linguistic elements, and cause-and-effect relationships within the explanatory text. The teacher guides the discussion and facilitates the students in gathering the necessary information from various learning resources.

The reasoning stage involves compiling analysis results based on information gathered during the discussion process. Students formulate conclusions regarding the process behind a phenomenon, adhering to the structure of an explanatory text.

The final stage is communication, where students present the results of their group discussions to the class, and other groups offer responses or ask questions regarding the presentations. The teacher provides feedback on the presentations

and reinforces the material that has been learned.

The observation results indicate that the five stages of the scientific approach were carried out sequentially during the instruction on explanatory texts. All stages were included in the teaching module and implemented by the teacher throughout the learning process, in alignment with the characteristics of the material being taught.

The results of the interview with Mr. Bahrowi, S.Pd., reinforce the observation findings. He stated:

"Under the Kurikulum Merdeka, I focus more on selecting essential material that relates closely to students' lives. Through a scientific approach, students become more active in asking questions, engaging in discussions, and expressing their opinions, rather than simply listening to the teacher's explanations."

The statement indicates that the implementation of the scientific approach is not merely applied as a stage of instruction but is also designed to foster learner-centered learning through the selection of contextual materials and systematic learning activities.

The role of the scientific approach in students' critical thinking skills.

Research results indicate that the scientific approach to teaching explanatory texts to Grade XI students at SMA Darussalam Blokagung plays a role in developing their critical thinking skills. This role is evident in the shift in how students comprehend texts: moving beyond merely receiving information to identifying problems, analyzing cause-and-effect relationships, constructing arguments based on evidence, and systematically communicating their analysis. These findings were derived from observations of the learning process and interviews with both teachers and students.

Table 2.1 Indicators of the Development of Students' Critical Thinking Skills through the Scientific Approach

Critical Thinking Indicators	Observational Findings	Interview Evidence
Identifying information	Students are able to identify key information and the central issue in an explanatory text.	<i>"If things are explained to me directly, I usually forget quickly. But if I'm asked to observe and analyze the text myself, I understand it better and remember the process."</i>
Asking questions	Students ask questions regarding cause-and-effect relationships and the clarity of information.	<i>"When studying explanatory texts, we were asked to find reasons and evidence within the text. So, we couldn't just</i>

		<i>answer haphazardly; there had to be a clear basis."</i>
Analyzing information	Students compare information, identify the structure, and evaluate the content of the text.	<i>"The teacher explains that students are beginning to be able to compare information in the text before formulating conclusions."</i>
Constructing an argument	Students present reasons based on evidence from the text.	<i>"The teacher noted that students were beginning to get into the habit of providing reasons for every answer."</i>
Communicating results	Students present their analysis results and respond to the opinions of other groups.	<i>"Learning became more challenging because we had to explain the content of the text again in our own words and relate it to everyday life."</i>

Based on Table 2.1, the scientific approach contributes to each indicator of students' critical thinking skills. The observation activity helps students build an initial understanding of the phenomena presented in explanatory texts by identifying key information. This stage serves as a foundation for students to conduct analysis in the subsequent stage. These findings are reinforced by a statement from Nayla, an 11th-grade student in the Language stream, who said:

"If things are explained to me directly, I usually forget quickly. But if I'm asked to observe and analyze the text myself, I understand it better and remember the process."

The statement indicates that the activity of observing provides students with the opportunity to construct understanding independently, thereby making the concepts being learned more meaningful. The research findings demonstrate that the observation process serves as a foundational basis for the development of critical thinking skills, as students construct understanding before engaging in analysis. These results reinforce the findings of Rahmawati (2022), which state that the observation stage functions to build prior knowledge while simultaneously serving as a foundation for developing critical thinking skills.

Critical thinking skills also develop during the questioning stage. Observations indicate that students begin to ask questions that go beyond mere facts, addressing cause-and-effect relationships and the logic of explanations found in explanatory texts. This demonstrates that students are becoming accustomed to analyzing information before accepting an explanation. These findings are supported by a statement from Riski, an 11th-grade Science student, who said:

"When studying explanatory texts, we were asked to find reasons and evidence within the text. So, we couldn't just answer haphazardly; there had to be a clear basis."

The statement indicates that the scientific approach accustoms students to constructing arguments based on evidence. The research findings demonstrate that students not only actively ask questions but are also capable of providing logical reasoning based on information contained in the text. These results reinforce the study by Damanik (2023), which states that the scientific approach is effective in developing students' analytical skills through activities involving questioning, analyzing, and providing logical reasoning.

Next, during the exploration and reasoning phase, students engage in group discussions to analyze the structure, linguistic features, and cause-and-effect relationships within explanatory texts. Through these activities, students learn to compare various pieces of information, evaluate data, and formulate conclusions based on their analysis. This experience was also shared by Dian, an 11th-grade Social Sciences student, who stated:

"Learning became more challenging because we had to re-explain the content of the text in our own words and relate it to everyday life."

The findings demonstrate that students not only comprehend the content of the text but are also capable of reconstructing knowledge based on the analysis performed during the learning process. These findings indicate that discussion and reasoning activities provide students with opportunities to develop analytical skills and evaluate information before drawing conclusions. This aligns with the findings of Putriani et al. (2022).

Based on observations, the majority of students were able to present the results of their discussions in a coherent manner and respond to the opinions of other groups.

The communication stage provides students with the opportunity to present their analysis results and respond to the views of other groups. This activity strengthens students' ability to articulate arguments coherently, defend their opinions with evidence, and evaluate differing perspectives. Thus, the communication process not only develops language skills but also enhances reflective and argumentative thinking abilities.

Based on observations, interviews, and documentation, the scientific approach contributes to the development of students' critical thinking skills during explanatory text lessons. Each stage of the learning process encourages students to identify information, ask questions, analyze cause-and-effect relationships, construct arguments based on evidence, and communicate their analysis results logically. These findings indicate that the scientific approach not only supports comprehension of explanatory text material but also facilitates the development of critical thinking skills, aligning with the learning objectives of the *Kurikulum Merdeka*.

4. Conclusion

Based on the research findings, it can be concluded that the instruction of explanatory texts using the scientific approach in Class XI at SMA Darussalam Blokagung was conducted in accordance with the principles of the *Kurikulum Merdeka*. Lesson planning was developed based on Learning Outcomes (Capaian Pembelajaran), Learning Objective Sequences (Alur Tujuan Pembelajaran), and teaching modules tailored to the students' characteristics, while the implementation systematically integrated the stages of the scientific approach into the learning process.

The research findings also indicate that the scientific approach plays a role in developing students' critical thinking skills. This role is reflected in students' ability to identify key information, pose analytical questions, analyze cause-and-effect relationships, construct evidence-based arguments, and communicate their analysis logically and systematically. Thus, the scientific approach not only supports comprehension of explanatory text material but also fosters the development of critical thinking skills—a key competency in Indonesian language instruction under the *Kurikulum Merdeka*.

This study implies that implementing a scientific approach—designed to be contextual and student-centered—can create a more active and meaningful learning experience while encouraging student engagement in the scientific thinking process. Consequently, the scientific approach serves as a viable instructional strategy to support the development of critical thinking skills in Indonesian language learning, particularly regarding explanatory texts.

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