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Discovery Learning and High-Level Thinking Skills in Student Explanatory Text Writing

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Abstract. This study aims to describe the role of students' high-level thinking skills through the Discovery Learning learning model in improving explanatory text writing skills. Explanatory texts, which serve to explain phenomena logically and systematically, contribute to the development of students' critical and analytical mindsets. Through the *Discovery Learning* approach, students are directed to find cause-and-effect relationships independently, thereby increasing their cognitive involvement in understanding and writing explanatory texts. The study also highlights the importance of explicit learning strategies such as scaffolding, the use of text models, and reflective exercises to support writing skills. However, there are various challenges such as limited ability to organize ideas, lack of understanding of academic language, and low intrinsic motivation of students. The results of the study show that the implementation of *the* Discovery Learning learning model has proven to be effective in improving skills in explanatory text writing because it encourages students to discover important concepts on their own through the process of active exploration. This study recommends the consistent integration of explanatory text-based approaches and Discovery Learning in educational practices to comprehensively improve students' academic literacy.

Keywords: Academic literacy, Discovery learning, Explanatory texts, Higher level thinking, Writing strategies

1 Introduction

21st century education demands a transformation in the learning approach applied in schools. One of the main challenges in the world of education today is how to cultivate higher order thinking skills (HOTS) in students. This skill is considered important because it is the main provision in facing a fast-paced, complex, and dynamic global era. High-level thinking skills include critical, creative, analytical, reflective thinking skills, as well as the ability to solve problems and make informed decisions. One of the important aspects of learning Indonesian is the ability to write. In this case, explanatory text writing is one type of text that requires students to be able to explain the process of the occurrence of a phenomenon sequentially, logically, and scientifically. Explanatory text writing requires not only language skills, but also a high level of thinking ability to

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connect cause and effect, compile factual information, and deduce the results of thought clearly [1].

However, the reality is that learning to write is often still traditional, teacher-centered, and lacks active student engagement. Students tend to be directed to copy examples or follow a standard format without being given space to explore their own ideas. As a result, the learning process becomes monotonous and less stimulating of deep cognitive activity. This has implications for the low quality of students' writing, especially in the aspects of content development, logic of thinking, and coherence between parts of the text. To overcome these problems, a learning approach is needed that is able to encourage active student participation while practicing high-level thinking skills. One of the relevant learning models is Discovery Learning. This model emphasizes the process of self-discovery of knowledge by students through hands-on experience, exploration, and analysis. In Discovery Learning, students do not just receive information, but build their own understanding through the process of observation, data search, discussion, and conclusion drawing [2].

Discovery Learning is rooted in the theory of constructivism, which believes that knowledge cannot simply be transferred from teacher to student, but must be actively constructed by the student himself. The teacher in this case plays the role of a facilitator who guides and provides a learning environment that supports students' exploration. With this approach, students are encouraged to become independent, critical, and reflective learners of what they learn. In the context of explanatory text writing, Discovery Learning provides a great opportunity for students to explore information related to a phenomenon, analyze its causes and effects, and compile it into a logical and informative explanatory text. This process actually involves high-level thinking skills because students must filter information, understand logical structures, and present arguments systematically. Thus, Discovery Learning can be an effective forum in training students' HOTS through writing activities.

Various previous studies have shown that Discovery Learning has a positive influence on improving student learning outcomes, both in cognitive and affective aspects. Students who learn with this approach tend to show a better active attitude, high curiosity, and problem-solving skills compared to students who learn through conventional approaches [3]. This shows that Discovery Learning not only improves understanding of concepts, but also strengthens the complex thinking skills needed in writing. However, there are still challenges in the implementation of Discovery Learning in the classroom, including limited learning time, lack of adequate learning resources, and teachers' readiness to manage learning that requires students' exploratory activities. Therefore, the implementation of this model needs to be accompanied by teacher training, the provision of relevant learning media, and careful planning so that it can run effectively.

In practice, the application of Discovery Learning in explanatory text learning can begin by presenting interesting and contextual phenomena as an initial stimulus. Students were then encouraged to ask questions, gather data from a variety of sources, and discuss their findings in groups. After the exploration process is completed, students are directed to pour the results of their discoveries into the form of explanatory texts that are in accordance with the correct linguistic structure and rules. This activity allows students to learn actively and meaningfully. Not only do they write, but they also think

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deeply, develop arguments, and present the results of their thinking clearly and convincingly. Thus, writing activities are no longer seen as a tedious task, but rather as a challenging and enjoyable intellectual process. In addition, this activity also forms the character of students who are independent, dare to express their opinions, and are used to discussing in a collaborative atmosphere [4].

The educational problem that is being handled is the low performance of students in writing explanatory texts caused by teaching methods that are still conventional, teacher-centered, and minimal active student involvement. This is shown through exposure to writing learning practices that still emphasize imitation of examples or standard patterns without room for student idea exploration, resulting in low quality of student writing in terms of content development, logic thinking, and text coherence. The problem is then explicitly linked to the need for learning approaches that are able to encourage active engagement and higher thinking skills (HOTS), such as the Discovery Learning model, which is the main focus of the study in this paper.

This literature review aims to further explore how Discovery Learning can be applied effectively in learning to write explanatory texts and the extent to which this approach can improve students' high-level thinking skills. Relevant research and studies will be used as a basis for analyzing the relationship between this learning model and the increase in HOTS in the context of writing. Through this study, it is hoped that a more comprehensive understanding will be obtained of the advantages and challenges in the application of Discovery Learning in writing learning. In addition, this study is also expected to contribute to the development of innovative learning strategies oriented towards the development of students' thinking skills.

The urgency to integrate higher-level thinking skills (HOTS) into writing instruction is convincingly debated in the context of the demands of 21st-century education as these skills are key in preparing students for complex, dynamic, and information-driven global challenges. In this era, students are not only able to write technically, but are also required to be able to think critically, analytically, and reflexively in formulating arguments, evaluating information, and communicating ideas logically and coherently. Explanatory text writing, as a form of scientific communication, requires HOTS skills because students must connect cause and effect, arrange facts systematically, and present the results of thought in a concise and convincing manner. Therefore, integrating HOTS in writing learning is not only a curricular need, but also a strategic strategy to form a generation of learners who are independent, adaptive, and ready to contribute to a knowledge-based society.

A number of previous studies have shown a link between the Discovery Learning model and the improvement of students' high-level thinking skills in language learning, particularly writing skills. Rustandi & Rismayanti (2021) examined the application of the Discovery Learning model in Indonesian learning and found that this approach was able to increase students' activeness and critical thinking skills, especially in understanding and composing texts. This is in line with research Hobri (2010) which shows that the use of the Discovery Learning model significantly contributes to the development of higher order thinking skills (HOTS), especially in the aspects of information analysis and synthesis. In the study, students who participated in invention-based learning tended to be more independent in exploring information and were able to process it

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into more meaningful writing products. Support for the importance of integrating HOTS in writing learning can also be seen in studies conducted by [7]. He found that problem-based Indonesian learning can effectively develop high-level thinking skills, such as the ability to evaluate and develop arguments. This has a direct impact on students' ability to compose more logical and cohesive writing. Meanwhile, Fuady et al. (2019) specifically highlights the relationship between high-level cognitive abilities and students' explanatory text writing outcomes. The results of their analysis showed that students with good critical thinking skills were able to compose explanatory texts with a more systematic structure and stronger arguments.

Problems in writing explanatory texts are also revealed by [9] who found that many students had difficulty in composing explanatory texts due to learning approaches that still focused on memorization and static text examples. This research emphasizes the importance of a learning approach that allows space for the exploration and formation of self-understanding by students, such as that offered by Discovery Learning. Further [10] stated that the use of the Discovery Learning model in writing learning is able to encourage students to think more creatively and produce more diverse writing in terms of content and perspective. Theoretical studies conducted by [11] also emphasized the importance of constructivist approaches, especially Discovery Learning, in improving students' writing literacy. He argues that high-level thinking skills will not develop optimally without learning that provides active, contextual, and reflective experiences for students. In the context of learning explanatory texts, this becomes very relevant because students are not only required to understand the material, but also to be able to explain a phenomenon logically and scientifically through their writing.

This research is quite different between general writing instruction and explanatory text writing as a task that specifically requires high-level thinking skills (HOTS). This can be seen from the emphasis that explanatory text writing is not just an ordinary linguistic activity, but involves complex cognitive processes such as identifying cause-and-effect relationships, arranging factual information logically, and conveying thoughts in a systematic and scientific manner. This study highlights that explanatory texts require students to not only copy or follow text patterns, but also to explore phenomena, analyze data, and draw conclusions independently—skills that are not always emphasized in general writing instruction. Thus, explanatory text writing is positioned as a form of relevant high-level literacy task to develop HOTS in a more intensive and targeted manner.

The constructivist theory underlying the Discovery Learning model is clearly explained in this manuscript and applied appropriately in the context of writing, especially explanatory text writing. It is explained that in the view of constructivism, knowledge is not something that is transferred directly from teacher to student, but must be built by the student himself through an active, contextual, and reflective process. In the context of writing, especially explanatory texts, students are not only required to understand the linguistic structure, but also to build their own understanding of a phenomenon through observation, information gathering, discussion, and conclusion drawn. The Discovery Learning Model encourages students to experience deep thinking processes, design logical arguments, and systematically structure writing based on their own findings. Thus, constructivist theory is implemented in a relevant way to shape a more

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meaningful, cognitively challenging writing learning process, and empowering students as active subjects in building their knowledge.

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This research effectively connects the components of HOTS—such as analysis, synthesis, and evaluation—with the writing tasks and stages in the development of explanatory texts. In the process of writing explanatory texts, students are required to critically analyze phenomena, namely identifying cause-and-effect elements and breaking down information into important interrelated parts. Next, they synthesize by rearranging information from various sources into logical and sequential descriptions that form the core of the explanation. In the evaluation stage, students must assess the completeness, coherence, and clarity of the arguments in the text they are composing, as well as revise the less effective sections. These three components of HOTS are integrally reflected in all stages of writing—from content planning, paragraph development, to final editing—so that explanatory text writing becomes a real forum for systematically strengthening high-level thinking skills.

The literature review in this study is comprehensive and includes current studies relevant to Discovery Learning and writing pedagogy, especially in the context of HOTS development. Several previous studies, to show the effectiveness of the Discovery Learning model in increasing students' active participation and critical thinking skills in Indonesian learning [2]. The literature also highlights the importance of problem-based and exploratory approaches in writing, as shown that links critical thinking skills to the quality of structure and argument in explanatory texts [12]. In addition, references to theoretical studies on the importance of constructivism in writing literacy show the depth of conceptual analysis that strengthens the research framework. Thus, this literature review not only includes empirical results, but also strengthens the theoretical foundation and practical relevance of Discovery Learning in the development of HOTS-based writing pedagogy.

Overall, previous studies have shown a positive relationship between the application of the Discovery Learning model, the development of HOTS, and students' writing skills, especially in explanatory text writing. These findings reinforce the importance of integrating an invention-based learning approach in the junior high school curriculum to improve the quality of literacy and thinking skills of students. Even so, the challenges of implementation in the field still need attention, especially related to teacher readiness, learning media, and time management in the teaching and learning process. The purpose of this study is to describe how the application of the Discovery Learning

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learning model can be carried out in learning to write explanatory texts in junior high school students. This study also aims to analyze the influence of the Discovery Learning model on students' higher order thinking skills in the writing process. In addition, this study wants to find out the extent to which the learning model can improve the quality of student writing, especially in the aspects of structure, content, and logic of explanatory text writing. This research also identifies various challenges and opportunities that arise in the implementation of Discovery Learning in the classroom, as well as develops strategic recommendations for Indonesian teachers to develop students' literacy skills through contextual, active, and cognitively challenging learning approaches.

The purpose of the research in this study is clearly and logically connected to the problem that has been identified, namely the low quality of student explanatory text writing due to conventional learning approaches that do not support the development of HOTS. This study aims to describe the application of the Discovery Learning learning model in learning to write explanatory texts and analyze its influence on students' high-level thinking skills and the quality of their writing, especially in aspects of structure, content, and logic of thinking. This goal directly responds to the need to find a more effective approach to learning in developing writing skills that not only focuses on linguistic aspects, but also emphasizes critical and analytical thinking skills that are essential in the context of 21st century education.

Thus, the results of this study are not only theoretically useful, but also have practical implications for teachers, schools, and policymakers in developing learning models that are more contextual, active, and in favor of students' learning needs. In the end, education that encourages students to think at a higher level will give birth to generations of problems in writing explanatory texts are also revealed by byi that are more resilient, intelligent, and adaptive to the times.

2 Method

This study uses a literature review method with the aim of in-depth examining various theories, research findings, and approaches relevant to the application of the Discovery Learning model as well as the development of higher order thinking skills (HOTS) in writing explanatory texts in junior high school students. This approach is qualitative descriptive, focusing on content analysis from various scientific sources, such as national and international journals, educational textbooks, proceedings, and previous research reports relevant to the topic.

Data collection in this study was carried out through document study, namely by tracing and collecting literature sources that meet the criteria of scientific relevance and validity. The inclusion criteria used in the selection of sources include: (1) publications within the last 10 years, (2) focus on learning Discovery Learning, HOTS, or explanatory text writing, and (3) legally accessible through scholarly databases such as Google Scholar, ResearchGate, ERIC, and DOAJ. The sources obtained were then analyzed using content analysis techniques with steps including identification of main themes, categorization of information, and drawing conclusions based on the tendencies of existing findings.

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Through this literature review method, the research is expected to present a comprehensive conceptual mapping and synthesis of findings regarding the relationship between Discovery Learning, HOTS, and explanatory text writing skills. The results of this study not only make a theoretical contribution to the development of Indonesian education studies, but also offer practical recommendations for educators in designing innovative learning strategies oriented towards developing students' thinking skills.

3 Results and Discussion

3.1 Definitions and Explanatory Text

Explanatory text is a type of text that aims to explain the process of the occurrence of an event or phenomenon, both natural and social, that occurs in daily life. This text is structured logically and systematically so that the reader can understand the cause-and-effect relationship of an event. Explanatory texts are texts that describe the process or stages of an event with the aim of providing information to the reader about how and why something can happen. The explanation presented was also scientific and objective [13].

Explanatory texts explain not only natural phenomena, but also social and cultural phenomena. According to him, the structure of explanatory texts is very important to provide information gradually to the reader, so that the process of understanding becomes more systematic. According to [14] mentioning that explanatory texts are used to explain, both social and natural, with the characteristic of a causal relationship that dominates its content. According to [15] It also explains that explanatory texts focus on the question of "why" and "how" an event occurs. They emphasized that this text is very important in the delivery of scientific information. The characteristics of explanatory texts include the use of factual information, logical and systematic presentation, and the use of cause-and-effect conjunctions such as "because", "thus", and "consequently". The structure of explanatory texts generally consists of three main parts, namely general statements, explanatory rows, and interpretations. The general statement contains the introduction of the phenomenon to be discussed. The series of explanators contains a detailed description of the process of the occurrence of the event. Interpretation, although optional, may contain the author's response or assessment of the phenomenon described. In terms of language, explanatory texts use formal language, passive sentences, and relevant technical terms.

The social function of explanatory texts is to provide a better understanding to the reader about an event or occurrence, so that the reader gains new insights about it. Explanatory texts can be divided into several types, such as scientific explanatory explanatory that explains natural processes (e.g., the process of rainbow occurrence), social explanatory that describes social events (e.g., the causes of poverty), and cultural explanatory that discusses the origins of certain traditions. According to [16] argues that explanatory texts can help students in understanding the logical relationship between events. This is very important in the world of education because it is able to train critical thinking skills. In the systemic-functional linguistic view put forward[17] Explanatory

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texts are considered as the realization of ideational meaning, which is a meaning that shows a logical and causal relationship between the elements in the text.

According to[18] It also emphasizes that explanatory texts have an important role in education because they help students understand complex processes systematically and rationally. According to Purba & Lubis (2025) It even mentions that the understanding of explanatory texts reflects the ability to understand good scientific concepts. Therefore, this text is important to be included in science literacy learning in schools. Explanatory texts can develop a scientific mindset in the reader. By understanding how an event occurs, the reader is invited to think logically and systematically. In addition, these texts can add to general knowledge because they often raise actual and factual topics relevant to daily life. Explanatory texts are also used in many fields, such as education, scientific journals, mass media, and public communication. Its informative and educational nature makes it important in imparting knowledge to the wider community. In addition, explanatory texts stimulate the reader's curiosity because they usually discuss things that are close to their lives, but often not understood in depth.

Overall, experts agree that explanatory texts are an important type of text that plays a major role in the world of education and information dissemination. With a systematic structure, factual content, and logical language, explanatory texts help readers understand various phenomena rationally. Therefore, learning about this text is highly recommended, both in formal education and as part of improving public literacy in general.

3.2 The Relationship of Explanatory Texts to Discovery Learning

Explanatory texts are closely related to the Discovery Learning learning model as stated by some experts. According to[20] sebagai pencetus Discovery Learning, states that effective learning occurs when students discover their own concepts or principles. In the context of explanatory texts, students are directed to find cause-and-effect relationships in the phenomena they are studying, thus strengthening the process of discovery of meaning. According to [21] Discovery Learning encourages students to think critically and analytically, an indispensable skill in understanding and writing explanatory texts explaining why and how a phenomenon occurs. According to [22] added that Discovery Learning helps students develop strong cognitive strategies, such as observing, classifying, and drawing conclusions, which is also an important process in building explanatory texts. According to [23] reveals that Discovery Learning increases students' active engagement, allowing them to explore information, make predictions, and validate their own understanding, in line with the explanatory text's goal of requiring the reader or author to understand the processes and relationships in an event independently. Moreover Alina & Wathon (2019) states that in Discovery Learning, students build their own knowledge through real experiences, so that when they read or write explanatory texts, they not only absorb information, but also build knowledge based on a deep understanding of the process they are experiencing.

In addition, the theory of meaningful learning from Nuryanto (2016) mentioning that new information will be easier to understand if it is associated with previous knowledge. This applies when students relate the content of the explanatory text to their own experiences. Inquiry-based learning is also relevant because it encourages students

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to ask questions and seek answers on their own, in line with the spirit of Discovery Learning and the characteristics of explanatory texts. Bloom's taxonomy also strengthens this relationship, as the activity of analyzing and evaluating the content of explanatory texts trains high-level thinking skills, which is the main goal of Discovery Learning.

Situated Learning Theory presented by Budi (2017) adding that learning will be more meaningful if it happens in a real context. Since explanatory texts often address everyday phenomena, they are ideal materials for contextual learning. According to Imanda et al. (2024) through its humanistic theory emphasizes the importance of learning that gives space for students' curiosity, and Discovery Learning presents this opportunity as students explore explanatory text topics. Cognitive Apprenticeship Theory by [26] It also supports this concept, where the teacher acts as an expert companion who guides students to find meaning in the text. Finally, the theory of contextual teaching and learning shows that students' understanding increases when they relate the material to life experiences, which is often found in the theme of explanatory texts.

3.3 The Relationship of Explanatory Texts with High-Level Thinking Skills

Explanatory texts are closely related to the ability to think higher, as explained by various experts. According to [27] High-level thinking involves the ability to analyze, evaluate, and create. In explanatory texts, the reader is required to analyze the cause-and-effect relationship and evaluate the processes described. According to [28] updated Bloom's Taxonomy and asserted that higher-level thinking skills such as analyzing, evaluating, and creating can be developed through the understanding of complex explanatory texts. According to Bariyah (2014) It also states that understanding in-depth reading requires the ability to make inferences and synthesize, which is highly hone in explanatory texts because the reader has to draw conclusions from information that is not always explicit.

According to Aprianto (2016) adding that meaningful learning is achieved when students use knowledge to make decisions and solve problems, a skill honed when understanding explanatory texts that often relate to real phenomena. According to Hutagaol (2013) argues that high-level thinking includes complex cognitive processes such as arguing and generalizing, which are also needed in analyzing the content of explanatory texts. In line with that, Triwidayati (2020) defining critical thinking as reflective and rational thinking to determine what to believe or do; In the context of explanatory texts, students are trained to assess the validity of the cause-and-effect relationship in the phenomena described. According to [32] with his "Habits of Mind" concept reveals that facing explanatory texts teaches students to ask questions, seek explanations, and persevere in the face of the complexity of problems. According to [33] Affirms that reading explanatory texts helps students move into the proximal developmental zone in academic reading, meaning that they practice thinking from simple to complex levels. Thus, explanatory texts not only serve to provide information, but also play an important role in developing high-level thinking skills in their readers, as agreed by many experts in the field of education and cognitive psychology.

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3.4 Effective Strategies in Improving Explanatory Text Writing

Effective strategies in improving the ability to write explanatory texts have been widely discussed by experts. According to [34] Teaching explicit writing strategies such as planning, organizing, and revision is very effective in improving the quality of explanatory writing. According to [8] added that the cognitive processes in writing, such as planning ideas, drafting outlines, and evaluating writing, must be taught to students so that they are able to produce coherent and logical explanatory texts. According to [18] argues that guiding students to move from knowledge-based writing to purpose-based writing can help them focus on conveying cause-and-effect in explanatory texts. Meanwhile, Lingga (2018) emphasizing the importance of scaffolding, which is the provision of gradual assistance by teachers until students are able to write independently, especially in complex explanatory structures.

According to Nursahadah (2019) Suggest the use of a good explanatory text model so that students understand the language characteristics, structure, and explanatory mindset they must develop. Moreover Roesminingsih et al. (2022) Saying that giving enough time for planning, drafting, and revision can improve the quality of the writing, as students have the opportunity to develop ideas and improve the structure of their texts. According to [38] mentioning that the use of the "think-aloud" technique when writing helps students internalize the critical thinking steps needed in building explanatory texts. According to [39] emphasizes the importance of a supportive writing environment, where students are encouraged to experiment with their ideas in explanatory texts without fear of being wrong.

According to [40] genre-based learning is particularly effective in teaching explanatory texts because students are taught explicitly about the structure, language, and purpose of appropriate communication. According to [41] emphasizes that writing is an active learning process, so encouraging students to practice writing explanatory texts often while reflecting will gradually improve their skills. Thus, various strategies such as explicit learning, text models, scaffolding, writing exercises, and supportive environments are the key to improving students' ability to write explanatory texts.

3.5 Challenges in the Development of Explanatory Text Writing

In the development of explanatory text writing, there are various challenges identified by experts. According to [42] stating that many students have difficulty organizing ideas logically, even though the cause-and-effect structure in explanatory texts is very demanding of regularity of thought. According to [43] Adding that writing is a complex cognitive process that often overwhelms students when they have to simultaneously plan, develop, and revise their explanatory texts. According to [44] Another big challenge is the tendency of students to just "write down what they know" rather than building the text on a clear communication goal, which is very important in explanatory texts.

According to Mustaqim (2013) Explains that without the support (scaffolding) of teachers or peers, students often have difficulty internalizing the right explanatory structure. According to [45] It also highlights a lack of understanding of the features of

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academic language, such as the use of causal conjunctions and passive verbs, which hinders clarity in explanatory texts. According to [46] mentioning that the limited time in writing practice in school does not have enough opportunities to revise and improve their writing, which is especially important for explanatory texts.

According to [47] argues that inconsistent genre-based teaching makes it difficult for students to understand the form and purpose of explanatory texts in depth. According to [48] another challenge is the lack of students' intrinsic motivation to write, so they tend to produce explanatory texts that are superficial and lack of depth. According to [49] also emphasizes that the pressure to write quickly and correctly can hinder the development of exploratory ideas that are actually important in explanatory writing. According to [6] stating that writing is an activity that requires deep reflection; However, in the rushed practice of education, students are rarely given the space to calmly think, connect, and revise.

3.6 Discussion

Explanatory texts are a very important type of text in the world of literacy because they function to explain the process of the occurrence of a phenomenon, both natural and social, logically and systematically. According to Usman (2013) states that explanatory texts are scientific and objective, aiming to provide an understanding of how and why an event occurs. Emphasizing the importance of structure in explanatory texts to make it easier for readers to understand the stages of an event. Thus, explanatory texts play a vital role in delivering scientific information to the wider community. The relationship between explanatory texts and the Discovery Learning learning model is very close, as revealed by Arief (2022) which emphasizes the importance of students discovering concepts and principles for themselves in learning. Discovery Learning encourages critical and analytical thinking skills, the main competencies in understanding explanatory texts. This discovery-based learning helps students build an understanding based on real experiences, which makes explanatory texts easier to understand because they are closely related to the realities of everyday life.

Explanatory texts are strongly related to the development of higher-level thinking skills. According to Amrina & Suryani (2019) The ability to analyze, evaluate, and create that is included in high-level thinking is highly honed through the activity of understanding explanatory texts. Analytical and evaluative skills at a high cognitive level. In addition, explanatory text-based learning encourages students to think reflectively and rationally, which is the essence of critical thinking. In improving the ability to write explanatory texts, various effective strategies have been proposed by experts. Teaching explicit writing strategies is essential, including the planning, organizing, and revision stages. Students need to be taught cognitive processes in writing such as drafting an outline and evaluating texts. The use of scaffolding in helping students understand the complex structure of explanatory texts, while the genre-based approach allows students to explicitly understand the characteristics of explanatory texts.

However, the development of explanatory text writing skills cannot be separated from various challenges. According to Brounen et al. (2013) found that students often had difficulty organizing ideas logically, an essential skill in explanatory texts. The

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cognitive process in writing often overwhelms students. Without scaffolding support and an understanding of academic language, students' ability to write explanatory texts becomes limited. In addition, motivational factors and learning conditions also affect the effectiveness of explanatory text writing. Highlighting the low intrinsic motivation of students as one of the causes of shallow writing results. Inconsistent genre-based teaching worsens students' understanding of the form and purpose of explanatory texts. According to As'ari (2014) The pressure to write quickly and correctly and the lack of time for reflection cause students to not have the opportunity to develop ideas exploratively, even though reflection is the key to producing quality explanatory texts.

Overall, this study confirms that explanatory texts not only function as a means of information, but also as a tool to develop critical thinking skills and high-level thinking in students. The integration of Discovery Learning, strengthening writing strategies, and providing the right scaffolding are the keys to optimizing students' ability to understand and write explanatory texts. Support for student motivation and adequate time for reflection are also important factors to overcome challenges in the development of explanatory literacy.

4 Conclusion

Based on the results of the study, it can be concluded that the implementation of the Discovery Learning learning model has proven to be effective in improving skills in explanatory text writing because it encourages students to discover important concepts on their own through the process of active exploration. Explicit writing teaching strategies, such as the use of scaffolding and genre-based approaches, have also been proven to improve students' ability to produce coherent and scientific explanatory texts. However, challenges remain, such as low intrinsic motivation of students, lack of mastery of academic language, and limited time for reflection in the learning process. These factors need to be anticipated through adaptive and innovative learning approaches. In order to improve the quality of students' explanatory literacy, synergy is needed between choosing the right learning model, strengthening effective writing strategies, providing adequate support (scaffolding), and efforts to increase student motivation and reflection in learning activities. This research provides a solid basis for the development of more effective explanatory text-based learning models in the future. The Discovery Learning model in learning explanatory text writing at the junior high school level has proven to be effective in developing students' Higher Order Thinking Skills (HOTS). Through the stages of concept discovery, information analysis, and structured problem-solving, students are trained to construct their own understanding of the phenomenon that is the object of the explanatory text. The use of Discovery Learning encourages students to develop critical, analytical, creative, and reflective thinking skills, which are reflected in their ability to write logical, systematic, and causal-relationship-based explanatory texts.

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