

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents several main points: theoretical description, theoretical framework, and review of related study. Theoretical description discusses the theory of the variables coherently. Theoretical frameworks explain why and how these theories are used in research. The last point is a review of previous research, which is a review of studies conducted by previous researchers that are closely related to the research to be carried out.

A. Theoretical Description

In this section, the researcher explains several theories related to this research. The theory is divided into the following sections: 1) Theory related to Higher Order Thinking Skills in Bloom Taxonomy, Higher Order Thinking Skills in Bloom Taxonomy revised edition: knowledge domain and cognitive process domain, and Higher Order Skills Thinking Comprehension (HOTS). 2) CEFR. 3) reading comprehension. The explanations are as follows.

1. Higher-order Thinking Skills

a. Higher Order Thinking Skills in Bloom Taxonomy

Thinking skills are usually classified or grouped according to the type/learning objectives. This grouping is called taxonomy. Taxonomies in education are used to classify learning objectives; some call them instructional, performance, and learning goals. One of the most frequently used taxonomies in education is Bloom's Taxonomy, introduced in 1956 by Benjamin Samuel Bloom, an educational psychologist, in collaboration with Max Englehart, Edward Furst, Walter Hill, and David Krathwohl.¹ Bloom introduced his taxonomy in his book entitled "*Taxonomy of Educational Objectives: The Classification of Educational Goals*".²

¹ Ghanizadeh, Al-Hoorie, and Jahedizadeh, *Higher Order Thinking Skills in the Language Classroom: A Concise Guide*. (Switzerland: Springer Nature Switzerland AG, 2020), 3.

² Bloom, "Taxonomy of Educational Objectives The Classification of Educational Goals. Handbook 1: Cognitive Domain." (Ann Arbor: Michigan: Longmans, 1956)

In Bloom's taxonomy concept, learning objectives are classified into three general classification domains or domains, namely the Cognitive domain (related to intellectual aspects, such as knowledge and thinking skills), the Affective domain (related to feelings/emotional aspects, such as attitudes and interests), and the psychomotor domain (which is oriented to the physical aspect or motor skills).³ The cognitive domain is the most widely used and familiar in the world of education, which is one of the basic frameworks used in categorizing educational goals, compiling exam questions, and compiling curriculum. In addition, the ability to think is included as part of the cognitive domain.

In the original version of Bloom Taxonomy concept, it has only one dimension with six classification levels ranging from C1 to C6, which are knowledge (C1), understanding (C2), application (C3), analysis (C4), synthesis (C5), and evaluation (C6).⁴ From this sequence, it can be seen that the classification level starts from the simple, moving to a more complex level. That implies that one cannot master a higher level before mastering a lower level.⁵ The ability to think in the cognitive domain is divided into lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS). The three lowest cognitive levels are knowledge, understanding, and application, considered lower-order thinking skills. Meanwhile, the next three cognitive levels are considered higher-order thinking skills.⁶

³ Sofyan, "Implementasi Hots Pada Kurikulum 2013." *Jurnal Inventa*, Vol. 3, no. 1, (2019), 4. <https://doi.org/10.36456/inventa.3.1.a1803>.

⁴ Darmawan and Sujoko, "Revisi Taksonomi Pembelajaran Benjamin S. Bloom." *Satya Widya*, Vol. 29, no. 1, (2013), 31. <https://doi.org/10.24246/j.sw.2013.v29.i1.p30-39>.

⁵ Keshta and Seif, "Evaluating the Higher Order Thinking Skills in Reading of English for Palestine Grade Eight." *Asian Journal of Education and e-Learning*, Vol. 01, no. 1, (2013): 52. <https://ajournalonline.com/index.php/AJEEL/article/view/52>.

⁶ Suparman, *Bagaimana Meningkatkan Kemampuan Berpikir Tingkat Tinggi (HOTS) Peserta Didik*. (Bandarlampung: Pusaka Media, 2020), 29.

Bloom's Taxonomy Classification in education has been used for almost half a century to prepare test questions, curricula, and other educational purposes worldwide. Bloom's taxonomy has become something important and has had a broad influence for a long time. That is because the Bloom taxonomy framework makes it easier for teachers to implement, understand, and organize educational objectives. However, this taxonomy underwent several changes from a revision one of Bloom's students made in 2001.

b. Higher Order Thinking Skills in Bloom's Taxonomy revised edition

Lorin Anderson, one of Bloom's students, and David Krathwohl (one of Bloom's original collaborators) improved Bloom's Taxonomy from the old edition.⁷ Anderson published the results of this taxonomic revision in a book entitled "*A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*" in 2001. But basically, the point remains the same: the classification of thinking skills.⁸ These changes include changing the name of the classification category from noun to verb, changing the order of the category of synthesis to the sixth and evaluating to the fifth, changing the name of the category "synthesis" to "creating", and creating a level of knowledge matrix; the level of knowledge in the original version of Bloom's taxonomy is converted into a separate dimension (knowledge dimension).⁹ Details Bloom's Taxonomy changes can be seen as follows;¹⁰

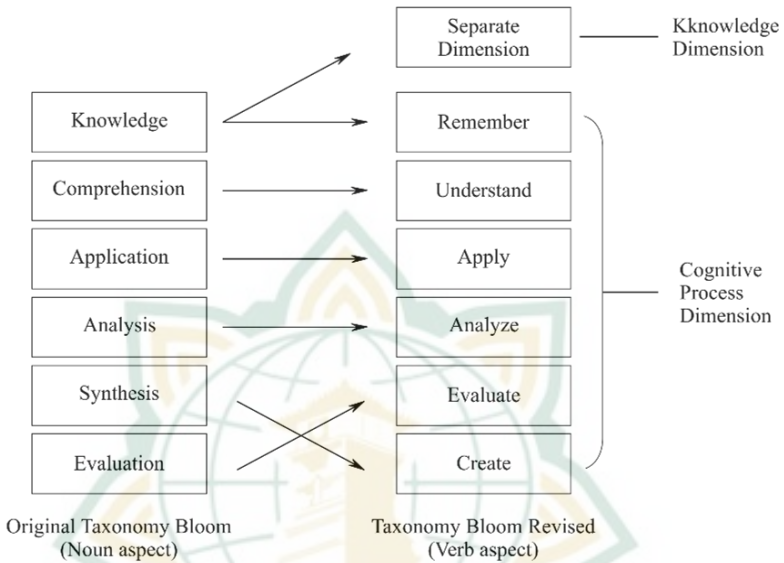
⁷ Ghanizadeh, Al-Hoorie, and Jahedizadeh, *Higher Order Thinking Skills in the Language Classroom: A Concise Guide*. (Switzerland: Springer Nature Switzerland AG, 2020), 6.

⁸ Suparman, *Bagaimana Meningkatkan Kemampuan Berpikir Tingkat Tinggi (HOTS) Peserta Didik*. (Bandarlampung: Pusaka Media, 2020), 31.

⁹ Ghanizadeh, Al-Hoorie, and Jahedizadeh, *Higher Order Thinking Skills in the Language Classroom: A Concise Guide*. (Switzerland: Springer Nature Switzerland AG, 2020), 6.

¹⁰ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 268.

Figure 2.1. Structure Changes from The Original of Bloom’s Taxonomy to Bloom’s Taxonomy Revised Edition



From some of these changes, it can be seen that the differences between the two versions of Bloom’s taxonomy are; 1) The names of the six classification categories in the original version of Bloom’s Taxonomy use nouns; *knowledge, comprehension, application, analysis, synthesis, dan evaluation*. Meanwhile, the revised edition of the taxonomy uses the verb; *remember, understand, apply, analyze, evaluate, and create*. This change was made to conform to educational goals indicating that someone can do something (verb) with something (noun). 2) The position of the fifth level in the original version of the taxonomy is synthesis, and the fifth is evaluation. Meanwhile, in the taxonomy revision, the fifth level is evaluation, and the sixth is synthesis. Then change the word synthesis to create.¹¹ 3) The knowledge dimension turns into a separate dimension. That is because it is assumed that each category in the

¹¹ Suparman, *Bagaimana Meningkatkan Kemampuan Berpikir Tingkat Tinggi (HOTS) Peserta Didik*. (Bandarlampung: Pusaka Media, 2020), 32.

taxonomic classification requires knowledge. 4) The original version of Bloom’s Taxonomy only has one cognitive dimension. In contrast, Anderson and Krathwohl’s Taxonomy is revised into two dimensions, namely the knowledge dimension and the cognitive process dimension. The knowledge dimension includes factual, conceptual, procedural, and metacognitive knowledge. Meanwhile, in the cognitive process dimension, there are six classification levels. The two dimensions (cognitive process dimensions and knowledge dimensions) based on the revised version of Bloom’s Taxonomy conducted by Anderson & Krathwohl will be explained as follows:

1) Knowledge Dimension

In the knowledge dimension classify four categories of knowledge expected to be obtained by someone ranging from concrete to abstract, namely factual, conceptual, procedural, and metacognitive knowledge. The first three categories in Anderson and Krathwohl’s taxonomy include all the categories of knowledge in the original version. But replaces some of the original type and subtype names into more general categories. While the fourth category, metacognitive knowledge, and its subtypes, have just been added to the revised version of the taxonomic Bloom.¹² The knowledge dimension taxonomy can be seen in the following table;

Table 2.1. Knowledge Dimensions: Major Types and Subtypes

| | | | | |
|---------------------------|---|---|-----------------------------|--|
| <i>Concrete knowledge</i> | | → | <i>Abstract knowledge</i> | |
| <i>Factual</i> | <i>Conceptual</i> | <i>Procedural</i> | <i>Metacognitive</i> | |
| Knowledge of terminology | Knowledge of classifications and categories | Knowledge of subject-specific skills and algorithms | Strategic knowledge | |

¹² Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom’s Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 45.

| | | | |
|--|---|--|---|
| Knowledge of specific details and elements | Knowledge of principles and generalizations | Knowledge of subject-specific techniques and methods | Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge |
| | Knowledge of theories, models, and structures | Knowledge of criteria for determining when to use appropriate procedures | Self-knowledge |

The definition of the knowledge dimension is as follows;

a) Factual Knowledge

Factual knowledge is the basic component of knowledge that a person needs to know to study a discipline or solve related problems. These components are usually symbols associated with concrete references that convey important information. Factual knowledge is formed at a relatively low level of abstraction.¹³ There are two subtypes of factual knowledge, namely:

- i. Knowledge of terminology. This knowledge includes verbal and non-verbal names and symbols. For example, words, signs, numbers, and pictures.
- ii. Knowledge of specific detail parts and elements. This knowledge includes information about events, places, people, dates, sources of information, and the like.

¹³ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 45-47.

b) Conceptual Knowledge

Conceptual knowledge includes categories, classifications, and correlations between elements, which are more complex and structured. This knowledge includes schemas, mental models, or implicit/explicit theories in various cognitive psychological models. Conceptual knowledge is divided into three subtypes¹⁴:

- i. Knowledge of classification and categories. This knowledge includes specific categories, classes, divisions, and settings in different subjects;
- ii. Knowledge of principles and generalizations. This knowledge includes knowledge of certain abstractions that summarize the results of observations of a phenomenon. Classifications and categories form principles and generalizations. This knowledge is dominated by a scientific discipline used to study phenomena or solve problems.
- iii. Knowledge of theory, models, and structures. This knowledge includes principles or bases and generalizations that are interconnected between two and produce clarity on a complex phenomenon.¹⁵

c) Procedural Knowledge

Procedural knowledge refers to “knowledge of how” to do something, about what skills to apply. It also refers to methods, very specific skills, algorithms, and techniques, all known as procedures.¹⁶ Procedural knowledge includes three subtypes:

¹⁴ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 48.

¹⁵ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 49-51

¹⁶ Wilson, “Anderson and Krathwohl Bloom's Taxonomy Revised Understanding the New Version of Bloom's Taxonomy.”

- i. Knowledge of specific skills and algorithms. Sometimes the procedure is followed by a definite order; other times, a decision must be made as to which step to take next.
- ii. Knowledge of techniques and methods in a particular field. This knowledge includes knowledge generally from agreements/provisions in scientific disciplines, not the results of observations or experiments, or direct discoveries. This knowledge shows how scientists in their fields think and solve problems.
- iii. Knowledge of the criteria for determining when to use an appropriate procedure. This knowledge includes; when a strategy, method, technique, or method must be used.¹⁷

d) Metacognitive Knowledge

Metacognitive knowledge is knowledge about self-understanding and awareness. This knowledge is seen as the highest level of knowledge in the knowledge dimension. It is often called “*a process of thinking about thinking*” or knowledge about cognition processes and strategies for applying knowledge to improve learning outcomes. Metacognitive knowledge includes three subtypes:

- i. Strategy knowledge. Knowledge of general strategies for learning and thinking in solving problems.
- ii. Knowledge of cognitive tasks, including contextual and conditional knowledge. This knowledge reflects general strategies and accumulates knowledge about cognitive tasks.

¹⁷ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 52.

- iii. Self-knowledge. Knowledge about one's abilities and weaknesses concerning cognition and learning.¹⁸

2) Cognitive Process Dimension

Based on Bloom's Taxonomy which has been revised, the order of six categories in the cognitive process dimension is remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6). Anderson places the ability to remember, understand, and apply lower-order thinking skills (LOTS). While the rest, namely analyzing, evaluating, and creating, are included in higher-order thinking skills (HOTS).¹⁹ The explanation of each category in the cognitive process dimension is as follows:

Remember means recalling relevant knowledge from long-term memory. Remembering is the lowest-level cognitive process. **Understand** is defined as constructing meaning or understanding, which includes oral, written, and graphic communication based on prior knowledge. **Apply** means applying or using a procedure in a given situation. That includes using a procedure or way to solve a problem. **Analyze** is breaking material into small parts and determining how the parts relate to one another with an overall structure or purpose. **Evaluate** means making judgments or decisions based on existing criteria or standards. **Create** is to combine elements to form a coherent whole and to create an original product.²⁰

¹⁸ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 55-59.

¹⁹ Septianingsih and Wahyuni, "Analisis Kemampuan Berpikir Tingkat Tinggi Menurut Teori Anderson Dan Krahtwohl Pada Siswa Kelas VII SMPN 25 Padang." *Jurnal Equation: Teori dan Penelitian Pendidikan Matematika*, Vol. 5, no.1, (2022), 1.

²⁰ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 30.

The cognitive process dimension represents the level of complexity from low-order thinking skills to higher-order thinking skills. Each of the six categories of cognitive processes is associated with two or more specific cognitive processes, a total of 19. Anderson and Krathwohl identified 19 specific cognitive processes, then explained the scope of the six categories as follows;²¹

Table 2.2. The Cognitive Processes dimension — categories & cognitive processes and alternative names

| Categories & cognitive process | Alternative names | Definitions |
|--------------------------------|---|--|
| REMEMBER | | |
| Recognizing | Identifying | Placing knowledge in long-term memory that is appropriate to that knowledge. |
| Recalling | Retrieving | Retrieving relevant knowledge from long-term memory. |
| UNDERSTAND | | |
| Interpreting | Clarifying Paraphrasing representing translating | Change one form of an image into another form. |
| Exemplifying | Illustrating instantiating | Find examples or illustrations of concepts or principles. |
| Classifying | Categorizing subsuming | Defines something in a category |
| Summarizing | Abstracting generalizing | Abstracting the general theme or main points |

²¹ Anderson and Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. (New York: Addison Wesley Longman Inc, 2001), 67-68

| | | |
|-----------------|---|--|
| Inferring | Concluding extrapolating interpolating predicting | Make logical conclusions from the information received. |
| Comparing | Contrasting mapping matching | Defines the relationship between two ideas, two objects, and such. |
| Explaining | Constructing models | Create a causal model in a system. |
| APPLY | | |
| Executing | Carrying out | Applying a procedure to a familiar task. |
| Implementing | Using | Applying a procedure to an unfamiliar task. |
| ANALYZE | | |
| Differentiating | Discriminating Distinguishing focusing selecting | Distinguish relevant subject matter from irrelevant parts that are important from the unimportant. |
| Organizing | Finding coherence integrating outlining parsing structuring | Determine how the elements work or function in a structure. |
| Attributing | Deconstructing | Determine the point of view, bias, values , or intent behind the subject matter. |
| EVALUATE | | |
| Checking | Coordinating, detecting, | Finding inconsistencies or errors in a process or product |

| | | |
|---------------|------------------------|---|
| | monitoring, testing | and discovering the effectiveness of the procedure being practiced |
| Critiquing | Judging | Finding inconsistencies between a product and external criteria and finding the correctness of a procedure to solve the problem |
| CREATE | | |
| Generating | Hypothesizing | Making hypotheses based on criteria |
| Planning | Designing | Plan procedures to complete a task |
| Producing | Constructing | Creating a product |

So, distinguishing between the specific cognitive processes of the six categories with specific cognitive processes lies in the form of a gerund that ends in “ing” in specific cognitive processes. In this way, recognizing and recalling are related to memory; interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining are related to understanding; executing and implementing with Apply; differentiating, organizing, and attributing are included in Analyze; etc.

The combination/relationship between the knowledge and cognitive process dimensions can be seen in the illustration with a three-dimensional graph, as shown in the following figure.

Figure 2.2. 3-Dimensional Model of Bloom’s Taxonomy Revised Edition by Anderson and Krathwohl



In the picture above, there are colored blocks that indicate the level of proficiency. These blocks are composed of a combination of the dimensions of cognitive processes and the dimensions of knowledge. From the 3-dimensional model image of the revised taxonomy bloom above, it can be concluded that the HOTS category is not limited to one particular dimension but rather a combination of cognitive process dimensions, starting from C4 (Analysis), C5 (Evaluation) and C6 (Creating) with the highest level of knowledge dimensions (conceptual, procedural and metacognitive).

The lowest level of thinking in the 3-dimensional taxonomy model lies in factual knowledge blocks in the remember dimension (found in the List blocks; primary and secondary colors), while the highest level of thinking lies in metacognitive knowledge in the create dimension (Create; an innovative learning portfolio). The lower-order thinking skills (LOTS) category is between the knowledge dimension columns (factual, conceptual, procedural, metacognitive) and cognitive process dimensions C1, C2, and C3. In addition, if the

learning indicators are included in the cognitive process dimensions C4, C5, and C6, however, in the knowledge dimension, it is at the level of factual knowledge, so these indicators are not categorized as HOTS. That is because the dimension of factual knowledge is at the LOTS level. Meanwhile, the higher-order thinking skills (HOTS) category is found between the cognitive process dimensions C4, C5, and C6 with conceptual, procedural, and metacognitive knowledge dimensions.

c. Recognizing Higher-Order Thinking Skills

Many experts have put forward the definition of higher-order thinking skills, one of which was put forward by Brookhart. He argued that higher-order thinking skills are divided into three categories based on the objectives of learning, namely those that define higher-order thinking in terms of *transfer*, define in terms of *critical thinking*, and define in terms of *problem-solving*. Higher Order Thinking Skills as *transfer* are defined as applying knowledge and skills developed during learning into new contexts. HOTS as a *transfer* includes the skills of analyzing, evaluating, and creating. Higher Order Thinking Skill as *critical thinking*, is defined as giving a wise evaluation and criticizing something for acceptable reasons. Higher Order Thinking Skills as *problem-solving* is identifying problems, solving problems in real life, and creating new strategies as solutions.²²

On the other hand, Zulfikar Alimuddin and Nikmah Hariati define Higher Order Thinking Skills, namely the ability to think logically, reflectively, and complexly, which not only knows, remembers, and understands but also is analytic, evaluative, and creative.²³ In line with the definition put forward by Lauren B. Resnick, higher-order thinking skills are complex thought processes that involve explaining

²² Susan M. Brookhart, *How to Assess Higher-Order Thinking Skills in Your Classroom*. (United States of Amerika: ASCD, 2010), 5.

²³ Alimuddin and Hariati, "HIGHER ORDER THINKING SKILLS (HOTS) UNTUK SOCIAL SCIENCES." (Kalimantan Selatan: HAFECS Press, 2019), 4.

materials, drawing inferences, constructing expressions, analyzing, and building relationships, with the most basic mental activities.²⁴ The definitions of higher-order thinking skills stated above show that higher-order thinking skills are a person's ability to think critically, creatively, and complexly in analyzing and solving a problem. Higher-order thinking skills aim to improve one's thinking skills at a higher level and improve one's overall performance by integrating new content into one's existing mental representations.²⁵ So, from having higher-order thinking skills, people are better at constructing explanations, thinking critically when assimilating information, thinking creatively when using knowledge to solve problems, engaging in relevant discussions, learn to make decisions quickly and accurately in complex situations.

In addition, regarding higher-order thinking skills and the revised edition of Bloom's taxonomy, the cognitive process dimensions of analyzing, evaluating, and creating (C4, C5, and C6) cannot be directly categorized into HOTS. That is because, in the revised edition of Bloom's taxonomy with a 3-dimensional model, higher-order thinking skills refer not only to the dimensions of cognitive processes but also to the dimensions of knowledge. So, even though an indicator shows the ability to analyze, evaluate and create; however, the knowledge dimension is included in the factual knowledge category, so the three cognitive dimensions are still categorized as lower-order thinking skills.

2. Common European Framework of Reference (CEFR)

The Common European Framework of Reference for Languages (CEFR) is a general framework for learning, teaching, and assessing foreign languages. The CEFR was published as a book by the Council of Europe in Strasbourg

²⁴ Resnick, *Education and Learning to Think*. (Washington DC: National Academy Press, 1987), 45.

²⁵ Brookhart, *How to Assess Higher-Order Thinking Skills in Your Classroom*. (United States of Amerika: ASCD, 2010), 3.

in 2001.²⁶ CEFR is an internationally recognized assessment standard to describe language proficiency in various language skills; reading, writing, listening, and speaking are used across Europe. Then the CEFR is widely used worldwide and translated and implemented in 40 languages. The CEFR provides a common, consistent, and comprehensive foundation for elaborating curriculum guidelines, language syllabuses, examination materials, textbook design, and assessment of foreign language skills. CEFR aims to explain comprehensively what language learners must learn to use language to communicate. In addition, it explains what knowledge and skills must be developed to act effectively.²⁷

CEFR has two axes. **First**, the categories' horizontal axis describes activities and aspects of competence. The horizontal axis includes skill areas, including; reception, interaction, production, and mediation. Skill areas generally consist of listening, reading, writing, oral interaction, and oral production.²⁸ **Second**, the vertical axis. The axis represents progress in proficiency in that category. The vertical axis of the CEFR shows the development of communicative language competence through levels.²⁹ To facilitate course delivery and to reflect progress, CEFR presents six levels of foreign language proficiency which are grouped into three broad categories, *Basic User*; A1 (beginner) and A2 (elementary), *Independent User*; B1 (Intermediate) and B2 (Upper Intermediate), *Proficient*

²⁶ Council of Europe, "Common European Framework of Reference for Languages: Learning, Teaching, Assessment Companion Volume with New Descriptors." (2018), 23.

²⁷ Europe, "Common European Framework Of Reference For Languages : Learning, Teaching , Assessment.", (Strasbourg: Cambridge University Press, 1st edition, 2001), 1.

²⁸ Tono, "Coming Full Circle —From CEFR to CEFR-J and Back." *CEFR Journal - Research and Practice*, Vol. 1, (2019), 5.

²⁹ University of Cambridge ESOL Examinations, "Using the CEFR: Principles of Good Practice." (2011), 8. <http://www.cambridgeenglish.org/images/126011-using-cefr-principles-of-good-practice.pdf>

User; C1 (Advanced) and C2 (Proficient), and can be subdivided according to the needs of the local context.³⁰

The CEFR represents six levels of language proficiency, comprising several scales, including reading proficiency levels. Each level describes the language competency qualifications. CEFR views language learners as members of society who want to perform tasks in specific environments, situations, and areas of activity. CEFR also indicates reading levels using technically measurable text elements, so it takes a somewhat restrictive approach. Related to reading in the CEFR, reading categories are a mix of reading purposes and specific genres with specific features. There is a fundamental difference both reading for orientation and reading for information or arguments in terms of the purpose of reading. The first is sometimes called search reading, and there are mainly two forms: “skimming” (quickly reading the text diagonally and assessing relevance) and “scanning” (quickly searching the text for specific information). The latter is a way of reading artifacts such as bus and train schedules, but sometimes searching for something specific in long process texts.³¹

Afterward, there is a fundamental difference both Reading for information/argument and Reading as a leisure activity. First, some texts are read specially. For example, reading instructions are special formats for reading information. Second, it may include fiction and non-fiction. That includes biographies, blogs, magazines, and newspapers, and in some cases, texts read by others only for work or study purposes according to their interests. Reading a correspondence is also different. That is provided first as the scale for each category begins with interpersonal language use. Reading as a leisure activity was added in 2017 which was named last. The CEFR scale qualification for overall reading comprehension of written texts consists

³⁰ Council of Europe, “Common European Framework of Reference for Languages: Learning, Teaching, Assessment Companion Volume with New Descriptors.” (2018), 34.

³¹ Council of Europe, “Common European Framework of Reference for Languages: Learning, Teaching, Assessment Companion Volume with New Descriptors.” (2018), 60.

of six proficiencies ranging from very basic reading skills (A1) to proficiency in a written language like a native speaker (C2), as referred to in the following table;

Table 2.3. Comprehension Level Scale: Descriptions for Overall Reading Comprehension

| | | |
|-------------------------|-----------|--|
| Pre-A1 | | Students can use familiar vocabulary to identify familiar words with pictures, such as pictured menus in fast food restaurants and picture books. |
| Basic User | A1 | Students can understand very short and simple texts one phrase at a time, picking up familiar names, words, and basic phrases and rereading them as needed. |
| | A2 | Students can understand short, simple texts about familiar facts of a particular nature, composed of frequently used every day or technical terms. Students can understand short, simple texts containing the most common vocabulary, including some common international vocabulary. |
| Independent User | B1 | Students can read with satisfactory understanding simple, factual texts on topics related to their field and interests. |
| | B2 | Students can read independently, adjust style and speed to different texts and purposes, and make targeted use of appropriate reference material. Has a wide vocabulary for active reading but may have difficulty with less frequent idioms. |
| Proficient User | C1 | Students can comprehend long, complex texts in detail, whether related to their field of study or not, provided they can read difficult sections again. Students can understand a wide variety of texts, including literary works, newspaper and magazine articles, and scientific and professional publications, |

| | | |
|--|----|--|
| | | provided they can reread them and access the references tool. |
| | C2 | Students can understand virtually any written language, including abstract, structurally complex, or highly colloquial literary and non-literary texts. Students can understand many long, complex texts, appreciating stylistic nuances and implicit and explicit meanings. |

From the table above, it can be seen that, at this level, categorizing language learners who are at the Pre–A1 basic proficiency level, which is a “milestone” halfway to A1, a set of skills in which the learner has not acquired general abilities, but instead relies on word choice and formulated sentences. A means including beginner learners, where A1 means basic beginner learners and A2 means high-level beginner learners. Language learners at proficiency level B are intermediate learners, where B1 means basic intermediate and B2 means high intermediate level. Language learners at the C level of proficiency mean they are advanced learners, where C1 means advanced basic-level learners and C2 means advanced high-level learners. In addition, there are many scales for different situations, such as presenting in public or reading correspondence. Each scale relates to specific contexts, elements, aspects, and processes that are differentiated within the model.

3. Reading Comprehension

Understanding reading itself is very complex. Reading means understanding a piece of writing, whether spoken orally or only in the heart. However, the simplified definition above does not represent the complexity of the meaning of “reading”. It does not reflect the interaction of factors that go into the act of reading. Experts also define reading with different definitions. Some define reading as a process of representing a meaning available in written form.

Reading is a very important skill to be learned and mastered by language learners, in addition to writing,

listening, and speaking skills. Reading is also a way for someone to get information and knowledge about something they need through writing.³² However, according to Nunan, reading is the smoothness of a process that the reader passes in combining some of the information contained in the text with the background knowledge he has to know or construct the meaning of the text.³³ When reading, the reader's background knowledge already has an important role. Because reading activities are not just identifying words from written symbols but must understand every series of sentences that are read.³⁴ Reading also requires a complex thought process because interpreting meaning must involve most of the intellectual actions of the reader, such as pronunciation and understanding to receive ideas or information conveyed in written form.³⁵

From the definition of reading above, it can be understood that reading is an activity or process when the reader understands an article and, constructs the meaning of a text, integrates information or messages in writing with the knowledge or experience that the reader has previously. By reading, someone indirectly collects word for word in linking the intent and direction of his reading so that, in the end, the reader can conclude something with his reasoning.

Meanwhile, understanding means constructing meaning by connecting reasonable ideas and drawing conclusions from a text. Reading is very closely related to understanding. Reading is understanding.³⁶ Understanding written text means capturing the information contained in a

³² Nurdiana and Amelia, "Interpretive Reading." (Pekanbaru: Kreasi Edukasi, 2017), 1.

³³ Nunan, *Practical English Language Teaching, First Edition*. (New York: McGraw-Hill Companies Inc, 2003), 68.

³⁴ Bojovic, *Reading Skills and Reading Comprehension in English for Specific Purposes*. The International Language Conference on The Importance of Learning Professional Foreign Languages for Communication between Cultures, (2010), 1.

³⁵ Nurdiana and Amelia, "Interpretive Reading." (Pekanbaru: Kreasi Edukasi, 2017), 2.

³⁶ Nurdiana and Amelia, "Interpretive Reading." (Pekanbaru: Kreasi Edukasi, 2017), 7.

text efficiently.³⁷ Understanding can occur when the reader can represent the message of the writing and cannot succeed without identifying the words and taking meaning from the writing.³⁸ Whether or not the reader is easy to understand the text depends on the reader himself, the reading activity, and the reading text. From the explanation above, it can be summed up that reading comprehension is a process and activity to understand the contents of a reading text, which includes drawing conclusions and capturing and understanding information by relating it to the reader's previous experiences. Reading comprehension is the ability of the brain to capture meaning, understand and study social phenomena by reading a text. In addition, readers will also catch ideas or messages from written texts.

As a good reader, it is very important not only to identify the words but also to understand the contents of the text that has been read to be a good reader. The ultimate goal of reading is to understand what is being read. In other words, understanding is a strong reason to read. If the reader reads a reading text but does not understand what is being read, then the reader is not reading. Therefore, it can be said that reading comprehension is the result of reading itself. Construct meaning that makes sense and is accurate by relating what students read to what they already know and considering all the information they know. Reading comprehension can be called comprehension when we have completed a text or reading and understand the author's message or purpose.

Reading comprehension in questions aims to test students' ability to understand, analyze and conclude English texts. The model of reading comprehension questions tested in the exam questions based on the CEFR has several patterns, including reading correspondence, reading for orientation, reading for information and arguments, reading instructions, and reading as a leisure activity. Explanation of each genre is as follows;

³⁷ Grellet, "Developing Reading Skills A Practical Guide to Reading Comprehension Exercises." (New York: Cambridge University Press, (1981), 3.

³⁸ Perfetti, Landi, and Oakhill, "The Aquisition of Reading Comprehension Skill." (2008), 228-229.

- a. **Reading correspondence** is reading and understanding personal and formal communications via email, letters, discussion forums, blogs, and others. The key concepts operationalized in the correspondence reading scale include; Message length and complexity/simplicity; specificity of information, whether the text follows a routine format; the extent of the use of language, standard/everyday/idiomatic language; the extent to which the topic of the text relates to everyday life/interests/subject matter.
- b. **Reading for orientation** is searching the reading, which involves ‘skimming’ (reading quickly to judge relevance) and ‘scanning’ (looking quickly through the text to find specific information). Key concepts working at scale include; Text type (from announcements, flyers to articles and books); preferring concrete information such as time and price from a text that is a visual artifact over a prosaic text with a useful layout; identifying important information; search for prose text based on relevance.
- c. **Reading for information and argument** is in-depth reading that requires careful consideration of texts that seem relevant for a particular purpose. It is often associated with studies and professional life. Key concepts that work at scale include text types, from simple illustrated instructional materials to complex reports and articles. Text topics range from familiar everyday topics of personal interest to those outside the expertise; depth of understanding, from discovering ideas based on content to understanding things and their consequences.
- d. **Reading instruction** is a special form of reading information. Key concepts that work at scale include: Teaching topics range from simple routine notices and bans on simple instructions to detailed conditions and complex instructions involving unfamiliar things that may be beyond the expertise. Degree of contextualization and familiarity; long sentences ranging from a few words in the text to complex long instructions.
- e. **Reading as a leisure** includes fiction and non-fiction, including creative texts, various forms of literature,

magazine and newspaper articles, blogs, and biographies, depending on one's interests. Important concepts that work at scale include; length, text variations, and illustrations. Text types consist of simple descriptions of people and places and many narrative text types. Various contemporary and classical literature genres. Everyday topics; (such as hobbies, sports, recreation, animals). From concrete situations to abstract and literary topics. Type of language; from simple to complex. Legibility; from guessing pictures to reading very independently and appreciating the diversity of texts. Depth of understanding; from understanding in overview or principle to understanding the implicit or explicit meaning.³⁹

B. Theoretical Framework

The subject of this study was an English exam for grades 10, 11, and 12 senior high school students published by an Islamic education organization in Jepara in 2022. The exam questions were written based on the latest curriculum in Indonesia, namely Curriculum 2013. Meanwhile, according to several experts, one of the most important aspects of developing human resources who are ready to face the challenges of the times requires 21st-century skills, one of which is improving thinking skills. Scott stated that developing these 21st-century skills (advanced thinking skills, deeper learning outcomes, complex thinking, and communication skills) requires support from the early stages of formal education.⁴⁰ In developing thinking skills, many experts classify them into two types, namely low-order thinking skills and high-order thinking skills. Higher Order Thinking Skill (HOTS) is an important aspect of language teaching, especially English as a second/foreign language. Therefore, to evaluate the questions to be tested, an analysis is needed to help improve the questions given in the future.

³⁹ Council of Europe, "Common European Framework of Reference for Languages: Learning, Teaching, Assessment Companion Volume with New Descriptors." (2018), 60-65.

⁴⁰ Scott, "Education Research and Foresight What Kind of Learning." (Unesco, 2015), 2.

For this reason, the researcher analyzed the English exam questions issued by an Islamic educational organization in Jepara with the availability of HOTS in the reading comprehension of the exam questions. The researcher analyzed the English test questions using content analysis research in a descriptive qualitative research design. This study uses Bloom's taxonomy which has been revised (3-dimensional model), as a work reference to analyze the data. Bloom's taxonomy has been trusted as a framework for compiling test/textbook/curriculum items and categorizing educational goals. Based on what was stated in the research by Nazlia Omar et al., Bloom's Taxonomy is considered an "acceptable guide for constructing appropriate test items for different cognitive levels".⁴¹ Bloom's Taxonomy and its revised version have been widely used to prepare questions, evaluate students' cognitive abilities, evaluate textbooks, and determine cognitive levels in test items. This research uses the cognitive process and knowledge domains from Bloom's revised taxonomy. The revised version of Bloom's taxonomy has been used in research conducted by Samira Baghaei, Mohammad Sadegh Bagheri, and Mortaza Yamini to compare the IELTS and TOEFL listening and reading tests.⁴²

In addition, it is very important to further study and analyze how the standards set in the English exam questions are compared to the CEFR so that it can identify the level of exam questions based on the CEFR level. One of the studies that used the CEFR level to measure reading ability was the research conducted by Raquel Da Silva Lemos and Elysa Hartati.⁴³ In this study, the researcher limited her research to reading comprehension test questions which would encourage higher

⁴¹ Omar et al., "Automated Analysis of Exam Questions According to Bloom's Taxonomy." *Procedia - Social and Behavioral Sciences* 59, (2012), 297. <https://doi.org/10.1016/j.sbspro.2012.09.278>.

⁴² Baghaei, Bagheri, and Yamini, "Analysis of IELTS and TOEFL Reading and Listening Tests in Terms of Revised Bloom's Taxonomy." *Cogent Education*, (2020). <https://doi.org/10.1080/2331186X.2020.1720939>

⁴³ Da Silva Lemos and Elysa Hartati, "Revealing Pre-Service Teachers' Reading Skills by Utilizing CEFR in Their Self-Assessment." *Journal of English Teaching Adi Buana*, Vol. 06 no. 1, (2021).

thinking skills. That is because reading is an important skill compared to other skills.

C. Review of Previous Studies

Research on the topic of higher-order thinking skills, especially in English, has been carried out by many previous researchers, including the following;

First, research on higher-order thinking skills in textbooks was conducted by Rezita Ayu Febriyani, Wisma Yunita, and Indah Darmayanti. The aim is to investigate the composition of higher-order thinking skills in the instructional questions posed in the textbook “English SMA/MA/SMK/MAK Class 12 Revised Edition 2018, published by the Ministry of Education and Culture”. He also examines the dominant cognitive dimension in the textbook. The quantitative descriptive research method was used in carrying out the research. The results of his research show that the composition of the HOT skills questions in the book is lower than the LOT skills questions, and the most dominant cognitive dimension is the ability to remember (C1) by 41%.⁴⁴ The difference between previous research and this research lies in using methods and research objects. Previous studies use descriptive quantitative research methods with textbook research objects, while this research uses qualitative descriptive methods with English exam questions as research objects. Furthermore, in previous research generally analyzed the four language skills (reading, speaking, writing, listening, and grammar and vocabulary), while in this study, we only focused on reading comprehension.

Second, research related to higher-order thinking skills and exam questions by Tomy Kartika Putra and Debiga Fikky Abdullah. They try to identify the use of thinking skills (especially at the higher level) presented in the national exam questions and discover the HOTS categories that often appear in the exam questions.⁴⁵ They analyzed their research based on the

⁴⁴ Febriyani, “An Analysis on Higher Order Thinking Skill (HOTS) in Compulsory English Textbook for the Twelfth Grade of Indonesian Senior High Schools.” *English Education Journal (EEJ)*, Vol. 10, no. 1, (2019).

⁴⁵ Putra and Abdullah, “HIGHER-ORDER THINKING SKILL (HOTS) QUESTIONS IN ENGLISH NATIONAL.” *Jurnal Bahasa Lingua Scientia*, Vol. 11, No. 1, (2019).

revised Bloom Taxonomy and used quantitative methods through content analysis. The results of his research show that the number of high-order thinking skills in the National Examination is inadequate. Only 25.23% are classified as high-order thinking skills with the Analyze category. The difference between the two lies in the method and research object. The method used in the previous research was quantitative through content analysis, while this research is qualitative research with content analysis as the type of research. At the same time, the object of research in the previous study used two packages of English national exam questions, which examined all the questions in the two question packages. In this study, the English exam questions for high school seniors issued by The Islamic Educational Organization in Jepara were used as research objects and only focused on questions in the reading section. Then, this study analyzed it based on the revised edition of Bloom's taxonomy with a 3-Dimensional model.

Third, research by Ahmad Ruhin Hidayat. He used an English reading textbook for grade 5 elementary schools in Malaysia to examine the types and use of higher-order thinking skills most frequently found in the text. Descriptive qualitative method using the interactive model tool from Miles and Huberman 1994 to analyze data in carrying out his research. The results of his research show that the type of high-level skills in the practice of reading essays from the textbook "English Year 5" can analyze (C4) of 34.5%, the ability to evaluate (C5) is 18.2%, the skill to create (C6) is only found 5.5%. In addition, there are 41.8% do not qualify as having higher-order thinking skills.⁴⁶ There is a significant difference between previous research and this research regarding analyzing data. In terms of the research object, differences were also found in the previous study using Reading textbooks, while this study used English exam questions in the reading comprehension section.

Fourth, Awad Sulaiman researched higher-order thinking skills to evaluate the availability of higher-order thinking skills

⁴⁶ Hidayat, "The Analysis of Higher Order Thinking Skill Implementation in English Reading Textbook." *Journal of Research on Applied Linguistics Language and Language Teaching*, Vol. 2, no. 1, (2019).

in the reading exercises in the English for Palestine textbooks for grade 8, as well as to analyze the extent of English reading exercises in the student book (SB) and workbook (WB) covering higher order thinking skills. To conduct his research, he adopted a descriptive analysis method with two tools to collect the required data; content analysis cards and structured interviews. The results show that only 58% of the findings from the analysis of the book “English for Palestine grade eight” are considered criteria for evaluating reading comprehension exercises. Meanwhile, the distribution of higher-order thinking skills in the available SB and WB is as follows; analysis skills obtained 51.92% (SB has 58.44% and WB has 33.33%), synthesis skills get 41.35% (SB has 32.47% while WB has 66.67%), evaluation skills only get 6.73% found in SB reading exercises.⁴⁷ This research, with previous research, has several differences that can be found, including; The research subjects used by previous researchers were textbooks and reading practice books, while this research was an English exam for high school seniors issued by The Islamic Educational Organization in Jepara in 2022/2023. The data collection differed from the previous study using analysis cards and structured interviews. However, this study uses documentation techniques and table checklists to collect data.

Fifth, research was conducted by Samira Baghaei, Mohammad Sadegh Bagheri and Mortaza Yamini. They conducted a study to compare listening and reading tests in IELTS and TOEFL questions based on revised taxonomic blooms. In their research, they used quantitative-qualitative content analysis methods. His research results show that higher-order thinking skills are more prominent in the TOEFL listening test than in IELTS. The IELTS reading test ranges from three categories of low-level thinking, while the TOEFL covers low-level and high-level thinking categories.⁴⁸

⁴⁷ Keshta and Seif, “Evaluating the Higher Order Thinking Skills in Reading of English for Palestine Grade Eight.” *Asian Journal of Education and e-Learning*, Vol. 01, no. 1, (2013).

⁴⁸ Baghaei, Bagheri, and Yamini, “Analysis of IELTS and TOEFL Reading and Listening Tests in Terms of Revised Bloom ’ s Taxonomy.” *Cogent Education*, (2020). <https://doi.org/10.1080/2331186X.2020.1720939>

From this research, it can be seen that there are different methods and research subjects used between the two. The quantitative-qualitative content analysis methods were used in the previous research and listening test and reading IELTS and TOEFL as a research subjects. In contrast, descriptive qualitative methods are used in this research, with the research subject English exam questions issued by the Islamic Educational Organization in Jepara. In addition, there are differences in Bloom's taxonomic model used; a two-dimensional model was used in previous studies, while a three-dimensional model was used in this study.

So, when viewed carefully, related to the above studies with this research confirms the existence of some differences and similarities. The main similarity in conducting research is reading questions to analyze thinking skills. On the other hand, the main difference that can be found lies in the research subject. Previous studies have focused on examining textbooks, national exam question packages, and the TOEFL/IELTS test. As a comparison, this study used the English exam questions for senior high schools issued by the Islamic Educational Organization in Jepara. In addition, this research differs from previous studies in terms of research design. Several previous studies used quantitative research and a combination of quantitative and qualitative research. On the other hand, this research uses a descriptive qualitative method with content analysis research as the type of research.