

CHAPTER I

INTRODUCTION

1.1 Background of the Research

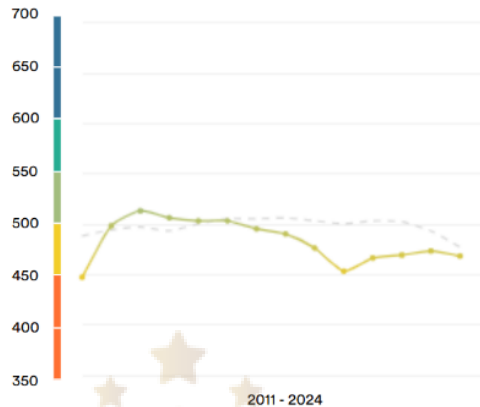
In the current digital era, comprehensive literacy has become increasingly essential, as individuals must navigate both traditional and digital forms of information. Literacy serves as a foundational skill necessary to understand concepts across all areas of study and as education, literature studies accompany educational practices in all settings (Alwasilah, 2014). Despite the critical role of literature in personal and educational development, Indonesia continues to struggle with low literacy levels, which demand serious concern and strategic intervention. According to the English Proficiency Index published by English First (EF) in November 2024, Indonesia ranked 80th out of 116 countries and 12th in Asia. Indonesia received a score of 468, which is slightly below the global average of 477.



Figure 1. 1 Indonesia's EF English Proficiency Index (EPI) ranking in 2024 (EF, 2024).

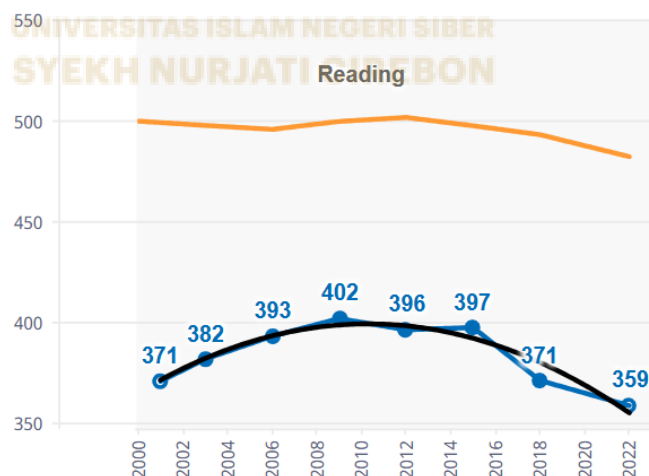
Chart 1. 1 Trend of Indonesia's EF EPI score from 2011 to 2024 (EF, 2024).

Trend EF EPI



Indonesia's EPI ranking improved for two consecutive years in 2012 and 2013. However, the score has continued to decline up to the year 2024. In the 2022 Programme for International Student Assessment (PISA), Indonesia was placed 69th out of 80 participating countries. Furthermore, data from the Programme for International Student Assessment (PISA) 2022 show that the reading skills of 15-year-old Indonesian students still appear to be unsatisfactory.

Chart 1. 2 Indonesia's Reading Score Trend in the Programme for International Student Assessment (PISA), 2000–2022 (OECD, 2022).



Indonesia has participated in PISA since 2001, and since then, its reading performance reached its peak in 2009 with an increase of 31 points. However, by 2022, it had declined back to the 2001 level, with a reading score of only 359

(OECD, 2022). This ranking highlights serious challenges in using reading as a means to foster and broaden knowledge and skills in various fields. Reading is a fundamental language skill closely linked to nearly all learning activities as an essential aspect of literacy (Diem & Abdullah, 2020). Additionally, data from UNESCO reveal that Indonesia's reading interest is alarmingly low, with a reading index of only 0.001%, indicating that only 1 out of every 1,000 Indonesians reads regularly and seriously. Indonesia's literacy challenges point to an immediate need for literacy programs that are more innovative, inclusive, and tailored to the specific context.

The problems mentioned above occur due to the limited availability of digital technology resources and the dominance of traditional teaching methods in Indonesian classrooms. According to Indriyani and Sudimantara (2023), "Indonesia always uses a traditional approach, the curriculum in Indonesia is always changing, but the concepts are still vague. Moreover, there is an effort to abandon conventional concepts that cannot yet be realized so that teachers are unable to use and utilize technology" (p. 40). Learning in the 21st century enables students to learn independently and automatically. Teachers act as facilitators who guide and direct students throughout the learning process. As also stated by Lian and Pineda (2014) in their discussion of rhizomatic learning, personal learning networks that are adaptable and created by the learners themselves are used to meet both perceived and actual needs. Based on the problems above, it can be concluded that there is a need to develop a digital platform for reading materials. This platform should be accessible, free of charge, and able to support students' autonomous learning as well as self-assessment of their literacy levels.

As stated by Mr. Lala in a live podcast on Ania Lian's YouTube channel titled *English Language Teaching and Learning*, at minute 14:07, he emphasized that we need to break away from the highly traditional approach in English Language Teaching (ELT) and literacy in general. This is important because, in the future, low literacy levels will become a major issue for large countries, including Indonesia (Lian A. B., 2022).

The development of an innovative and creative digital literacy platform can help address low literacy rates and the decline in English proficiency. Digital literacy is a crucial component of the 21st century learning framework, especially since we live in a technology and media driven era characterized by access to diverse information, rapid advancements in technological tools, and the ability to interact and contribute individually on an unprecedented scale (Helyanti, 2022). According to Lian (2023), technology has become an integral part of daily life, influencing how language is taught and learned, and compelling educators to revise their instructional methods. This technological access empowers learners, enabling them to take greater control of their learning and promoting a stronger sense of self-directed learning. Similarly, Eryansyah et al. (2019) argue that students learning English as a foreign language need to strengthen their digital literacy skills to meet the evolving competencies required in the 21st century (p. 455).

A newly introduced education policy in Indonesia, known as *Merdeka Belajar* or the *Merdeka Curriculum*, has recently been implemented. This curriculum represents a revised model of educational planning officially endorsed by the Minister of Education and Culture (Pratikno, Hermawan, & Arifin, 2022). The *Merdeka Curriculum* is a progression from previous curricular frameworks and is characterized by several key principles: 1) A holistic approach that aims to develop students comprehensively, including their academic knowledge, emotional, social, and cognitive skills. 2) A competency-based framework that prioritizes building students' skills and abilities over teaching fixed content. 3) Curriculum perspectives and personalization mean that school curricula are designed by taking into account the context such as the school's mission, culture, local environment, as well as the individual needs of the students (Ariestina & Haryanto, 2022).

Holistic education is a new movement in the curriculum in Indonesia. According to UNESCO, a holistic learning approach aims to fully stimulate all aspects of the learner's personality (emotions, intelligence, body, and imagination) to promote more comprehensive and effective learning (UNESCO, 2022). This holistic approach helps create a more effective learning environment where technology and emotional skills work together to support the overall development

of children. Thus, we can ensure that technology is not only used as a tool but also as a means to enhance students' emotional and cognitive engagement.

Although the Merdeka curriculum has been refined using a holistic learning system, in reality, the Merdeka curriculum still feels unclear. This aligns with the statement by Mr. Lala in the fourth podcast on the YouTube channel Ania Lian titled *Curricula: Political and Pedagogic Expectations and Reality* at minute 1:54:23, where he said that the government asks teachers to teach English using a new paradigm, but there is no explanation of what that paradigm actually is (Lian A. B., 2022). Furthermore, in the sixth podcast at minute 44:10, Mr. Lala added that the concept of learner-centered learning is still vague because there has never been any discussion about feedback or the real system of how students can actually have a better learning experience (Lian A. B., 2022).

Transforming education means going beyond reforms that merely improve our current education systems and practices. Transformation is not just a better version of existing systems but results in education systems that are different from what we know today (UNESCO, 2022). Educators must be prepared to push themselves to make significant changes in various ways. The learning process itself is one of the most influential factors affecting students' academic achievement (Puspita, 2021). The role of pedagogical research in organizing student learning is to provide students with access to activities and forms of support that help them generate questions to identify their learning needs relevant to their target language interactions, and to find answers to those questions (Lian, A. B., 2008). Based on this statement, we need to develop the curriculum and implement transformative learning using a new paradigm. We must shift to a non-traditional approach to address this learning crisis by focusing on student-centered learning, multisensory learning, multimodal learning, rhizomatic learning, and resource-based learning.

Despite the many challenges posed by limited resources and other factors, the development of digital technology has transformational potential in enhancing cognitive abilities such as abstract reasoning. Abstract reasoning is the ability to understand non-concrete concepts and connect ideas and relationships between them to support the learning process. This skill is crucial because it promotes deeper

understanding, analytical thinking, and the ability to relate seemingly unrelated concepts for navigating social and scientific complexities. Abstract reasoning is generally considered a form of higher-order thinking or cognition. Overall, it involves the manipulation of mental representations such as symbols, ideas, and relationships to solve problems that are new or not directly related to prior experiences. In psychological and educational contexts, abstract reasoning is often associated with fluid intelligence (Latif et al., 2024, p. 43).

According to Selpia and Setyarini (2020), higher-order thinking skills (HOTS) are a major focus in 21st-century education. The implementation of HOTS aligns with the goals of 21st-century education, including curriculum development that aims to help students sharpen their abstract reasoning skills. Therefore, mastering abstract reasoning not only enhances teaching quality but also has a positive impact on students' learning outcomes (Nugroho, 2023).

The 2022 PISA analysis indicates that using digital devices for recreational purposes impacts students' creative thinking performance in different ways. In Indonesia, 36% of students spend more than one hour daily on digital activities while at school (OECD average: 35%). With children today being more familiar with gadgets, integrating technology into educational media proves to be an effective strategy. This idea is supported by Najib et al. (2019), who emphasize that well-developed and properly used educational media can significantly enhance the teaching and learning process. In the Indonesian education context, digital illustrated storybook is one form of media that can support learning.

Moreover, in this modern era, many aspects of our daily routines have changed due to the widespread use of technology and the internet. We often use technology to support learning activities. The expectations that guide how we live our daily lives, including learning, have changed along with the advent of digital technology. This “new learning” paradigm was not created by anyone. It is not a learning theory, but rather a learning culture that has developed as a result of the dialogic capabilities brought by technology (Lian A. B., 2014). Data shows that internet users in Indonesia increased by 2.1 million between 2021 and 2022, reaching a total of 204.7 million internet users as of January 2022 (Kemp, 2022).

This indicates that people's social lives are highly dependent on the internet or technology.

According to Black, Kell, Lian, & Lie (2017), technology can assist such exploratory reflection, enabling the development and integration of learning environments with information-rich databases, collaborative possibilities, and creative tools to engage students' multisensory interpretive systems as well as support information searching and cross-linking in nearly infinite combinations. Furthermore, in the eighth podcast, Prof. Andrew stated that we have become accustomed to various approaches and techniques for using technology both inside and outside the classroom because technology can easily and effectively take us beyond the classroom (Lian A. B., 2022). Thus, technology-based learning supports autonomous learning because technology makes learning more engaging and accessible anytime and anywhere.

Technology-based help systems should provide support structures that guide users to extensive resources and especially in today's do-it-yourself world allow students to explore solutions to their problems. These systems should also offer links to other comprehensive resources and support systems that can guide students on a beneficial serendipitous discovery journey (Lian A. P., 2011). A rhizomatic approach can also be applied by integrating technology. According to Lian A. P. (2004), the rhizomatic structure is not chaotic; rather it is a self-regulating system that responds to learners' needs as identified by existing mechanisms whether human or otherwise to fulfill those needs. The potential of technology has given rise to a type of learning known as "just in time" in society and elsewhere meaning "just for me" and "just enough." Learning occurs and has been occurring when it is needed just in time utilizing the most up-to-date available information in the required quality just enough to address a particular problem with resources or information customized to each student's needs (Lian and Pineda, 2014).

Moreover, technology can also support precision language learning. The essential characteristic of precision language education is the desire to access information that is as detailed and accurate as possible about learner characteristics and performance to initiate the most effective interventions supporting the student's

learning efforts. Such interventions may take various forms, including face-to-face or online consultations with peers, friends, or experts (including teachers), the use of specialized computer programs, or other types of technological and human support (Lian & Sangarun, 2017). Given that education today increasingly integrates technology into teaching and learning processes, it is necessary to transform traditional learning approaches into digital-based learning.

Digital illustrated storybook has emerged as an innovative educational medium capable of integrating technology to support the development of abstract reasoning skills in primary school students. This storybook is particularly important in primary education as they combine text and visuals to create a learning experience that enhances literacy, engagement, and cognitive skills. Learning through storybook should be conducted continuously to help students better understand the narratives (Hendratno et al., 2022). Therefore, digital illustrated storybook is a relevant solution for 21st century learning, addressing the need for technological integration while improving the quality of education in Indonesia.

Many studies have explored various aspects of designing learning media digital, though not specifically aimed at improving abstract reasoning skills in early learners. For example, studies have examined the effectiveness of digital storytelling (Pujiani et al., 2022), 21st-century language learning in Indonesia from a CALL perspective (Sudimantara, 2023), analysis of interactive storybooks and literacy (Hendratno et al., 2022), digital storybooks that enhance students' self-efficacy (Al Kamil et al., 2023), the development of CEFR-based picture books (Finanda, 2024), as well as the perspectives and experiences of Indonesian pre-service English teachers in developing digital learning resources (Sudimantara, 2023), and the use of CEFR-based digital storytelling resources (Jayanti & Sudimantara, 2023).

Many studies have explored the effectiveness of digital storytelling and digital learning resources, but few have specifically focused on enhancing abstract reasoning skills in early learners. For instance, Pujiani et al. (2022) examined the effectiveness of digital storytelling, but did not address abstract reasoning skills directly. As emphasized by Prado (2019) in his study on the progression of

reasoning skills in early learners, abstract reasoning plays a vital role in young children's cognitive development and problem-solving abilities. Addressing this gap can lead to more targeted educational interventions that foster these skills from an early age. Previous studies have often focused on general cognitive or language skills without specifically targeting abstract reasoning. This limits the applicability of their findings to the development of abstract reasoning skills in early learners.

Therefore, the researcher has identified several issues across various curricula and seeks to address them by creating innovations and developing a new paradigm in language learning to boost abstract reasoning skills. This study aims to examine whether digital illustrated storybook designed to boost abstract reasoning skills in early learners. By addressing these gaps, the research emphasizes the importance of fostering abstract reasoning skills from an early age and contributes to the development of digital storybook to improve the quality of education in Indonesia.

The researcher also believes that conducting this analysis at the primary school level is very important, as English has been removed from the curriculum in some primary schools. Illustrations in the storybook can capture students' attention and motivate them to learn English. These illustrations can also make students more enthusiastic and prevent boredom while reading. Thus, such illustrations can be used to enhance students' literacy levels while also improving their English language competencies.

1.2 Identification of the Phenomena

According to the background of the research regarding *Designing a Digital Illustrated English Storybook to Boost Abstract Reasoning Skills in Early Learners: A Case Study in an Indonesian Primary School*, several important issues and phenomena have been identified.

- a. Indonesia is facing a learning crisis and significant learning loss.
- b. Teacher-centeredness.
- c. Inconsistent implementation of the Merdeka Curriculum.
- d. Student engagement and motivation in reading activities are generally low.

- e. There is a lack of structured programs to effectively integrate digital devices into the learning process.
- f. Digital literacy is not well integrated into early learners.
- g. Need for multisensory and multimodal learning experiences.
- h. Access to high-quality digital educational media is limited, especially in rural areas.
- i. There is insufficient evidence on the long-term impact of technology integration on student engagement and learning outcomes.
- j. Learning materials and media are often not engaging or enjoyable, which reduces students' interest and motivation to learn.

Based on the phenomena above, the development of *Designing a Digital Illustrated English Storybook* needs to be observed to ensure they meet educational goals and effectively boost abstract reasoning skills in early learners. Teacher training and continuous use of these storybooks are essential for maximizing their benefits in the classroom.

Besides, the students' understanding is essential to facilitate the *Designing a Digital Illustrated English Storybook* development and learning process in the classroom. Insufficient research on the effectiveness of continuous use of digital storybooks in enhancing students' understanding and retention of content (Hendratno et al., 2022). Therefore, students' understanding of the development of the *Digital Illustrated English Storybook* needs to be identified and explored further. By addressing these issues, we can ensure that the digital storybook is effectively integrated into the learning process, thereby boosting abstract reasoning skills in early learners

1.3 Delimitation and Focus of the Research

The bounds that the authors have purposely imposed are known as delimitations. They are concerned with the definitions that the researchers choose to designate as the boundaries or limits of their work in order to prevent the study's goals and objectives from becoming impracticable to achieve. Delimitations may be considered to be under the researcher's control in this approach (Coker, 2022, p. 141).

The focus of this research is to develop literacy resources for primary school students. With digital literacy resources in the form of a storybook, it is expected to describe the extent to which a *Digital Illustrated English Storybook* can boost students' abstract reasoning skills. This study will focus on the design and development process of a *Digital Illustrated English storybook* that incorporates elements of Cirebon culture, as well as examine the impact of this digital storybook on student engagement and the development of abstract reasoning skills. As previously mentioned, the English proficiency index in Indonesia is still relatively low.

In this study, there are five main research objectives as follows:

1. Identifying the learning crisis and low student engagement in Indonesia.
2. Helping students learn based on literacy level.
3. Reducing teacher-centeredness by promoting student-centered learning.
4. Supporting consistent implementation of the Merdeka Curriculum.
5. Developing structured programs to integrate digital literacy in early learners.
6. Creating multisensory and multimodal learning experiences to boost motivation.
7. Evaluating the long-term impact of digital learning media on student engagement and learning outcomes.

1.4 Research Questions

Based on the research phenomenon, the researcher formulates the research questions as follows:

1. What are the creative processes involved in the research and development (R&D) of characterizing digital illustrated storybook?
2. How did the teacher and students perceive the use of digital illustrated storybook in the classroom?

1.5 Aims of the Research

Aims of research has an important position in conducting research. The functions of objectives are (1) to become acquainted with a phenomenon or to

obtain new insights about it (exploratory or formulative research questions), (2) To accurately describe the qualities of a specific individual, circumstance, or group (descriptive study), (3) To discover the frequency with which something occurs or is related to another (Sahu & Singh, 2021).

Related to the theory above, the researcher has the aims of this research, which are described as follows:

1. To describe the creative processes involved in the research and development of the digital illustrated English storybook and to identify its characteristics.
2. To investigate teachers' and students' perceptions of the use of digital illustrated English storybooks to boost abstract reasoning skills in the classroom.

1.6 Significances of the Research

This research is expected to give significant advantages both theoretically and practically. The results of the *Digital Illustrated Storybook* development can be used in the English teaching and learning process. Specifically, the benefits of this research are as follows:

1.6.1 Theoretically

The researcher assumes that this study can be useful for readers in discovering a new perspective on digital learning media for primary school students. This research will provide a new medium for learning English, particularly to improve students' literacy through the use of a digitally illustrated storybook that can boost abstract reasoning skills in early learners. In addition, this study can serve as an alternative source and a guide for future research.

1.6.2 Practically

The practical significance of this research encompasses various individuals and groups within the education sector. Specifically, the results of this study are expected to provide meaningful benefits for students, English teachers, and future researchers. This research can help teachers choose an alternative medium (digital storybook) for English learning that can be

accessed anytime and anywhere. Furthermore, this medium will assist learners in studying English while boosting their abstract reasoning skills to achieve their individual goals.

1.7 Theoretical Foundation

This section presents the basic theories of this research. Theories serve as the foundation for the concepts explained in this study. The points discussed are supported by other researchers. This section consists of several subheadings that explain different but related topics. Presenting the content under subheadings will make the writing clearer and more organized. Therefore, the theories regarding the design of a *Designing Digital Illustrated English Storybook to Boost Abstract Reasoning Skills in Early Learners* will serve as essential literature for this research.

1.7.1 The Human Nature of Learning

Learning of pedagogy, or how humans learn, is a fundamental aspect of education. Understanding how individuals acquire, process, and apply information significantly determines the success of teaching and learning processes. This involves cognitive, emotional, social, and neurological aspects.

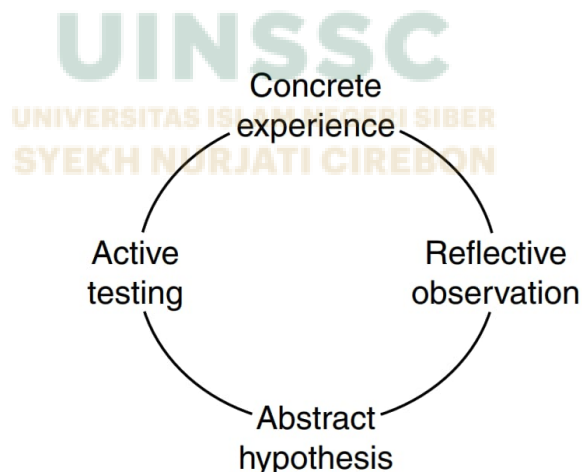


Figure 1. 2 Kolb's Experiential Learning Cycle.

According to Kolb (1984), learning is an active process that takes place through direct experience and reflection on that experience. As noted by Cranton (2001), experiential learning in digital contexts can be facilitated

through well-designed activities that guide learners through the four interconnected stages of Kolb's learning cycle: concrete experience, reflective observation, abstract hypothesis, and active testing (p. 168).

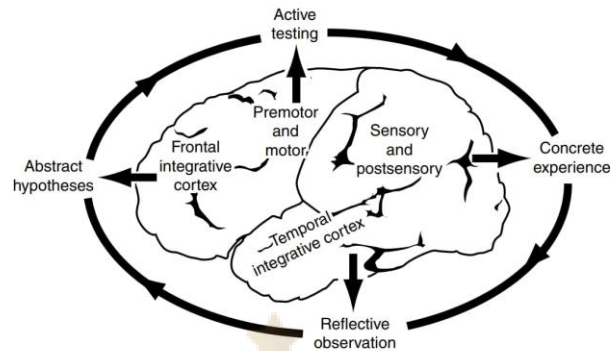


Figure 1. 3 Kolb's Learning Cycle and Brain Structures.

According to Kolb (1984), learning is defined as *"the process whereby knowledge is created through the transformation of experience"* (p. 20). In this view, knowledge arises from the interplay between grasping and transforming experiences. Kolb's experiential learning theory offers a comprehensive framework for understanding how individuals acquire knowledge through direct engagement with real-life experiences, highlighting the crucial roles of active participation, reflective thinking, and practical application in the learning process (Kolb & Kolb, 2003). Furthermore, this model is not confined to traditional face-to-face settings; it can also be effectively adapted to online learning environments.

The brain is an organ that plays a crucial role in human functioning. Each part of the brain has its own specific functions. For instance, there is a division of labor between the left and right hemispheres in processing information. The left hemisphere tends to be logical and linguistic, while the right hemisphere is more creative, emotional, abstract, and closely related to the ability to visualize things spatially. The narrative that has developed over time suggests that this difference explains why people often seem to differ in how they perceive and respond to the world.

In the 21st century, there is substantial evidence regarding how humans learn language, including the roles of the left and right brain hemispheres. The human brain does not directly capture reality. Instead, people perceive elements such as sound or sight only after their brains have processed information from various sensory inputs (Helyanti & Bumela, Ikhawati, 2022).

In the development of learning, efforts to optimize brain performance, particularly students' brains, in thinking, analyzing, and creating must be considered. In fact, current educational systems tend to direct students to primarily engage the left hemisphere (Nurasiah, 2016). In English language learning, traditional teaching methods that focus solely on vocabulary mastery and grammar are no longer considered appropriate because they only stimulate the left brain. As a result, monolithic pedagogical approaches relying on a single component such as grammar or other linguistic descriptions are no longer aligned with the spirit of the 21st century, which emphasizes multidimensionality (Sudimantara, 2021).

In reality, when someone learns a language, both the left and the right hemispheres are involved. The right hemisphere is also a significant contributor to logic and language (McGilchrist, 2012). When we look at the brain, the first thing we notice is that it remains profoundly divided, even after millions of years of evolution (McGilchrist, 2012). The brain is at least divided into two hemispheres, the left and the right both of which contribute to logic and language. With advances in research, it has become increasingly clear that both hemispheres contribute to language abilities and visual-spatial imagery. Both are involved in emotional and rational processes, which are actually closely interconnected (McGilchrist, 2012).

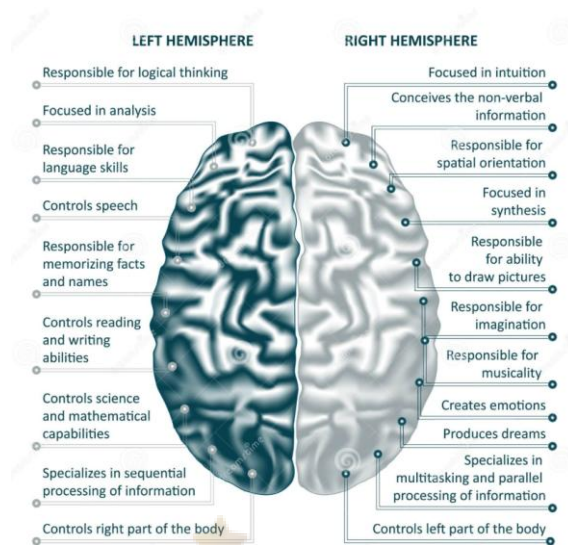


Figure 1. 4 Functions of the Left and Right Hemispheres.

According to McGilchrist (2019), the left hemisphere is rational and linguistic, while the right hemisphere is feminine and gentle, emotional, creative, vague, and inclined toward visualization or artistic representation. Gradually, it becomes apparent that both hemispheres equally contribute to language and visual-spatial imagery. This distinction continues down to the neck or whatever part corresponds to the neck in brain anatomy. The two hemispheres differ in size, shape, and weight (the right hemisphere is larger and heavier in all social mammals).

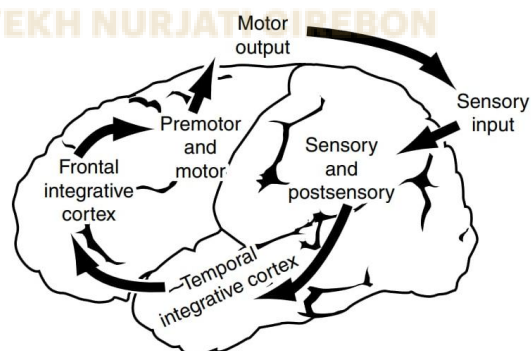


Figure 1. 5 Brain Structure and Learning Processes.

Figure 1.5 shows the left side view of the cerebral cortex. The cerebral cortex carries out three main functions which are sensing integrating and moving. These functions are associated with specific areas of the cortex. The

sensing function involves receiving information from the external environment. Integration means combining different signals to create a complete understanding of what is being perceived. Then, the motor function refers to the body's ability to carry out actions based on the processed information.

1.7.2 The Multisensory and Multimodal Learning

Humans do not directly perceive reality through their senses; perceptions such as sight and hearing occur only after the information has been processed through various multisensory connections (Damasio, 2014; Peterson, 2017). As cited in research by Lian, A. B (2020), humans possess multisensory abilities and process information in a multisensory manner. This shows that every human being, including students, processes information through multiple senses. The multimodal or multisensory approach also provides opportunities for learners who struggle in one aspect to learn through other aspects that are their strengths. For example, children who have difficulty learning through auditory means are given the chance to learn through more effective modalities, such as visual and kinesthetic ones (Helyanti, 2022).

According to Richards (2001), an approach is a theory that explains the nature of language and language acquisition. The source of language teaching techniques and principles originates from a single methodology encompassing both linguistic theory and language acquisition processes. In this context, the multisensory approach refers to a learning process involving two or more senses simultaneously (Kelly, Rains, and Durham, 2008). The multimodal method, also known as VAKT (Visual, Auditory, Kinesthetic, and Tactile), is believed to increase students' interest and retention of learning materials (Baines, 2008). This approach suggests that language comprehension is more effective when visual, auditory, motor, and tactile learning styles are combined, making it highly recommended for teachers who work with students with diverse learning strengths (Moustafa, 1999).

In English language learning, the multisensory approach emphasizes the importance of learning support based on learning principles rather than mere instruction (A-B Lian, 2017). This approach is designed for all age groups, not only students with learning difficulties. Dewi (2020) states that everyone can benefit from the multimodal method, which is also effective in providing learning experiences and sensory integration for early childhood (Moustafa, 1999).

Teachers applying the multimodal approach integrate visual, auditory, kinesthetic, and tactile components into learning. Due to this diversity, according to Reid (2005), children can have a unique language experience, which enhances their ability to learn and remember better compared to relying solely on books or dictionaries. This approach also gives opportunities to students who face difficulties with one modality to learn through others that better match their strengths, such as children who struggle with auditory learning being more effective when learning through visual or kinesthetic modalities.

From a biological perspective on how humans process information, evidence shows that learning is a multisensory experience (Lotto, 2014, as cited in Lian A.B., Bodnarchuk, & Napiza, 2017). Using multisensory learning techniques, students can build reciprocal relationships between sensory input and thinking processes, interact with the material more intensively, and retain what they have learned for longer periods (Celik & Karatepe, 2018).

This aligns with the new pedagogy developed by Sudimantara (2021), which identifies “multisensorial load reduction strategies” that activate non-verbal language components such as rhythm, intonation, movement, emotion, and aesthetics. These components are first processed in the right hemisphere of the brain, serving as the foundation for grammatical processing in the left hemisphere (Helyanti, 2022). Thus, multisensory learning activates both the right and left hemispheres during learning activities.

Multisensory instruction pathways can be categorized into four main types: auditory, visual, tactile, and kinesthetic (Julaiha, 2022). For example, visual learners prefer to use their eyes in learning. They become more active and enjoy learning activities by using sight to learn and remember information. Visual learners utilize what they know best, such as colors, shapes, and pictures. They create visualizations and employ visual thinking to reinforce their memory of the material.

Several advantages of multisensory learning have also been revealed by researchers. For instance, if this approach is used to address students' needs and becomes an integral part of the teaching and learning process in English classes, multisensory activities can engage the senses of academically low-performing students (Romero, 2020).

1.7.3 The Power of Story Thinking

Another equally important aspect is how the human brain processes information within a story, as this is closely related to how students understand and process texts during reading activities. The human brain naturally prefers stories; it processes information presented in narrative form more easily and stores it in long-term memory (Curtis 2016). Information conveyed through stories tends to be easier to understand and remember compared to presentations in the form of facts or raw data. The benefits of using stories in learning are diverse, especially for students. For a long time, humans have used stories as a medium to convey experiences, knowledge, and cultural values. We think, remember, and interpret experiences in the form of stories, and we often adapt or filter facts to fit the narratives we construct (Alviani 2018). It is no surprise that many experts believe that much of what we understand and remember is formed in narrative form (Fletcher 2021).

According to Alwasilah (2014), literature is a specific form of experience represented through text and adhering to certain standards, creating an emotional and cognitive connection between the reader and the text. In this context, language education should not only focus on linguistic

mastery but also aim to enhance students' critical thinking skills. Critical thinking means being able to analyze hidden meanings and understand the essence of messages conveyed through various forms of language and presentation styles. Furthermore, Fletcher (2022) state that narrative cognition is the main driver of the human brain's ability to create original actions, such as technological development, scientific discovery, artistic storytelling, and problem-solving.

In the context of English language learning, learners can utilize stories not only as a source of entertainment but also to improve information retention. Stories also have the power to evoke emotions, which play a crucial role in the learning process. Curtis (2016) emphasizes that emotions and cognition cannot be separated, as emotions are one form of cognition. When someone reads or listens to a story, their brain releases three main neurotransmitters: dopamine, which increases motivation and deep learning; cortisol, which enhances focus; and oxytocin, which strengthens emotional bonds with characters in the story. In the language learning process, the human brain uses the same neural networks to process sensory information, store memories, predict events, and build meaning from language (Curtis 2016). The human brain is a cause-and-effect simulation machine that relies on sensory systems to understand the world. Therefore, the use of stories in learning is highly compatible with how the brain works. When the brain receives factual information, only two parts of the brain are active the language processing and comprehension areas. However, when listening to a story, additional areas of the brain become active, such as the emotion and visualization centers, leading to the release of oxytocin, a hormone that strengthens empathy and emotional connections (Panksepp 1998; Helyanti 2022).

Using emotionally engaging stories also triggers the release of dopamine, which helps strengthen memory and makes listeners feel as though they are experiencing the events in the story firsthand. This is why stories are so effective in enhancing students' memory and understanding of lesson

material. Stories do not only activate parts of the brain related to language but also those responsible for sensory, motor, and emotional functions, making the learning experience more comprehensive.

In more modern teaching practices, story-based approaches have been integrated with digital technology. Jayanti and Sudimantara (2023) argue that "the use of digital storytelling resources for critical listening focuses on making learning fun with stories rather than relying on memorization of grammar and vocabulary and also to rebuild the confidence of middle school students in learning English by emphasizing critical listening" (p. 108). This shows that digital storytelling is not just a source of entertainment but a pedagogical strategy that can boost students' confidence while developing their critical thinking skills through listening activities.

Through the implementation of storythinking an approach that emphasizes thinking and understanding the world through narrative structure education can be designed to be more meaningful relevant and humane. Storythinking invites learners to experience, reflect, and create meaning through the narrative structure that mirrors how the brain naturally organizes information. In other words, a narrative-based approach aligns with the natural way the human brain understands and stores information, making it a highly effective tool in the learning process.

1.7.4 Reading for Emotion

Reading for Emotion is an innovative learning tool that focuses on the development of emotional intelligence through literature. This approach encourages students to deeply engage with texts, allowing them to experience, identify, and reflect on a wide range of emotions. As noted by Sudimantara (2021), interacting with emotionally rich literature helps students develop empathy by placing themselves in the perspectives of fictional characters, while also enhancing their emotional awareness and cognitive growth.

According to Fletcher (2021), stories are generally associated with specific events and typically come with predetermined beginnings and endings. Moreover, the stories we learn in school are usually structured with

a “beginning, middle, and end.” However, texts are not merely conveyed to fit that traditional structure. A more detailed generic structure of stories was proposed by Lian A.B. (2017), consisting of: setting the focus, disturbance, dialogue, development, resolution, and moral.

Table 1.1 Reading for Emotion Stages by Ania Lian (Sudimantara, 2021).

Focus	In the Reading for Emotion model, the focus highlights the main idea of a text, commonly found at the beginning of canonical text structures, though its placement may vary.
Disturbance	The transition from focus to disturbance introduces a complication, an event that triggers an emotional shift that can be unexpected and not necessarily negative, adding depth to the text.
Dialogue	This section explores multiple perspectives on the disturbance.
Development	This stage describes the results of the disturbance.
Resolution	This describes the way in which the problem was addressed and resolved.
Moral	A message from the contrast between focus and disturbance.

This structure is the basis of the Reading for Emotion model developed by Lian A.B. (2017, 2021) to foster students’ critical engagement by examining the emotional structure of texts as the driving force behind grammatical choices, rather than the other way around (Sudimantara, 2021). The model was designed to support students' comprehension and production of texts (Lian A.B., 2020). Reading for Emotion also reveals that the most natural source of knowledge lies within the individual (Puspita, 2022).

Lian (2017) emphasizes the importance of incorporating emotional elements into reading activities. By focusing on the emotional content of stories, educators can create deeper and more impactful learning experiences. Lian’s research suggests that when students connect emotionally with the

material, they are more likely to retain information and gain a deeper understanding of the text. This emotional connection can also foster a love of reading and enhance overall literacy skills.

Recent studies by Sudimantara and Lian have explored the practical implementation of Reading for Emotions in the classroom. They found that using digital storybooks and various multimedia resources can enhance students' emotional engagement. These tools offer a more interactive and dynamic reading experience, which is especially beneficial for young learners. The integration of technology into reading activities also supports the development of digital literacy skills, which are vital in today's digital era.

Furthermore, Sudimantara (2021) and Lian (2017) emphasize the role of teachers in facilitating emotion-based reading activities. Educators need to be trained to recognize and respond to students' emotional needs. By creating a supportive and empathetic classroom environment, teachers can help students manage their emotional responses to literature. This approach not only enhances emotional intelligence but also promotes a positive and inclusive learning atmosphere.

In addition, teachers are encouraged to provide multimodal learning materials such as audio, video, text, and movement to stimulate students' sensory experiences, known as multisensory learning. These materials also support the use of interconnected learning resources, a concept known as rhizomatic learning. The exploratory component of the Reading for Emotion method is inherently critical and creative, and it brings students back into the context of analysis without neglecting the social foundation of their lived experiences (Lian, A.B., 2017).

Some pedagogical approaches view learning as a dynamic and continuous process, involving the creation of connections and exploration of multiple, non-linear pathways much like nomads traveling without fixed beginnings or ends. Within this framework, rhizomatic learning emerges as a pedagogy that places relationships at the core of the learning experience,

highlighting the importance of interconnectedness in knowledge construction (Koutropoulos, 2023).

1.7.5 Aesthetics Principles

A new pedagogical approach integrating the concepts of emotion and aesthetics has been introduced to support agentive learning in academic writing. Developed through doctoral research at an Australian university, this method has proven effective in helping students transform their learning practices. The "Reading for Emotion" tool, based on A.-B. Lian's (2017) work, and the "Aesthetics" tool, inspired by the neurological theories of Ramachandran and Hirstein (1999), guide students in exploring sentence intonation, structural complexity, paragraph coherence, and rhythm (Bumela, 2021).

These tools help learners recognize how well-crafted writing aligns with aesthetic principles such as peak shift, grouping, isolation, contrast, symmetry, balance, perceptual problem-solving, and metaphor. Alongside the Verbotonal approach, these tools promote the development of academic English through multisensory engagement, bypassing a strict reliance on grammar or rigid writing formulas. Drawing from neuroscience and corrective phonetics, the approach allows students to assess and refine their writing using diverse semiotic systems often overlooked in traditional linguistics-based instruction. Early findings indicate that this innovative framework encourages deeper, more personal engagement with writing.

Together with his colleague William Hirstein, Ramachandran proposed that aesthetic experience is not merely a subjective feeling but can be explained through specific principles or "laws" that govern how art affects the brain and elicits emotional responses. This suggests that aesthetics has a biological basis, closely linked to neuronal activity in the brain. In addition, several aesthetic principles remain relevant when viewing academic writing as an artistic form. These include perceptual problem solving, isolation, contrast, rejection of coincidences, metaphor, symmetry, and a sense of order

(Bumela, 2020). There are the eight aspects of aesthetics by Ramachandran and Hirstein (1999):

Table 1.2 Aesthetics Principles (Ramachandran and Hirstein, 1999).

Peak Shift	The brain responds more strongly to exaggerated or amplified versions of a stimulus than to the original.
Grouping	The brain naturally groups visual elements that are similar or related to form coherent objects. Grouping activates emotional centers in the brain (limbic system), giving a pleasing sensation when patterns are recognized.
Contrast	Contrast help in distinguishing figure from background, aiding object recognition.
Isolation	Focusing on a single visual dimension (e.g., form, color, or line) without distractions enhances aesthetic impact. This principle explains why minimalist art or savant drawings (e.g., by autistic individuals) can be visually compelling.
Symmetry	Symmetrical forms are generally perceived as more attractive because symmetry is associated with health, fertility, and stability in nature.
Perceptual Problem Solving	When the brain successfully interprets a complex image, it experiences a sense of satisfaction ("aha moment"). This process activates emotional brain areas, making such art more engaging and memorable.
Generic Viewpoint	The brain prefers interpretations of images that work from many angles rather than from a unique viewpoint.
Metaphor	Metaphors in art allow us to see connections between seemingly unrelated things. These visual analogies engage higher-level cognitive processes and emotional responses.

Table 1.3 RfE and The Neurological Theory of Aesthetic Experience (Sudimantara, 2024).

Peak Shift and Emotional Intensification	Exaggeration of features to create a stronger emotional or perceptual impact.
Grouping and Emotional Coherence	Organizing separate parts into a unified whole for easier perception.
Contrast and Emotional Clarity	Highlighting important elements by emphasizing differences and discarding redundancies.
Isolation	Focusing attention on a single element to enhance its effect.
Symmetry and Emotional Harmony	Using proportion and harmony to create pleasing and stable visuals.
Perceptual Problem Solving	Engagement with visuals that challenge interpretation and provoke thought.
Generic Viewpoint	Preference for familiar perspectives that are easily recognizable.
Metaphor and Emotional Mapping	Connecting abstract ideas to sensory experiences to deepen emotional understanding.

In the context of reading, this leads to the concept of aesthetic reading as a rich experience where individuals engage with texts for emotional fulfillment. Reading is no longer merely a mental activity; it becomes an enjoyable journey that allows readers to connect deeply with the emotions, stories, and characters presented in the text. Through the application of aesthetic principles such as, grouping, peak shift, contrast, isolation, symmetry, balance, perceptual problem-solving, generic viewpoint and

metaphor, students are trained to recognize that good writing possesses artistic qualities, much like a work of art.

1.7.6 Abstract Reasoning Skills

Abstract reasoning is the cognitive ability to analyze information, recognize patterns, and solve problems that go beyond concrete or literal understanding. It enables individuals to think logically and creatively when interpreting complex or intangible concepts, making it an essential skill in various domains, including science, mathematics, and daily life. Recent studies underscore the significance of abstract reasoning in cognitive development, particularly its influence on critical thinking (Akyürek, 2024).

Research has explored the development of abstract reasoning in diverse contexts. Akyürek et al. (2024) examined the effectiveness of test-time training in enhancing abstract reasoning in language models, revealing that dynamic parameter updates during inference significantly improve model performance on complex reasoning tasks. Emphasized the multidimensional nature of abstract reasoning and highlighted the importance of sensorimotor experience and social interaction in shaping abstract thought processes.

In the Indonesian education system, particularly under the Independent Curriculum, the integration of reasoning skills and emotional reading comprehension remains underdeveloped. Pre-service and in-service teachers in Indonesia and Australia lack the abstract reasoning skills needed to understand the connection between their teaching practices and the new curricular objectives (Lian, 2024).

Digital thinking is fundamentally rooted in abstraction, forming the basis for understanding complex ideas. Digital technologies function as mediums that make abstract concepts more accessible, fostering active interaction with them. Essentially, digital thinking involves the use of technology to automate abstract human reasoning and convert it into tangible, applicable results (Kumar, Zindani, & Davim, 2020).

Students frequently engage in unstructured reading approaches and lack exposure to strategies that foster emotional engagement with texts. Moreover,

reading comprehension as a means to train empathy and critical reasoning is insufficiently addressed, leading to ineffective reading outcomes. According to Dr. Ania (2024), several key components define abstract reasoning within the Reading for Emotion model:

- a) Understanding Consequences: This involves predicting outcomes of specific actions or decisions, which is fundamental for effective decision-making.
- b) Generalizing Learning to New Situations: Learners apply acquired knowledge across unfamiliar contexts, demonstrating adaptability and cognitive flexibility.
- c) Understanding Cause and Effect: Recognizing how actions produce outcomes supports deeper comprehension and predictive thinking.
- d) Identifying Similarities and Differences: Comparing events or ideas fosters analytical thinking and pattern recognition.
- e) Working with Concepts: Grasping and applying abstract ideas, such as infinity in mathematics or risk in business, is central to advanced problem-solving.
- f) Interpreting and Applying Frameworks: This includes using structured models like SWOT analysis to understand complex scenarios and make informed decisions.

1.7.7 The Common European Framework of Reference (CEFR)

The Common European Framework of Reference for Languages (CEFR) is an international standard used to describe an individual's language proficiency. To address the diverse needs of language teaching and assessment, the Common Framework of Reference (CFR) was developed as a global scale of standardized language descriptors. One of the most recognized adaptations of this framework is the CEFR, which was first published in 2001.

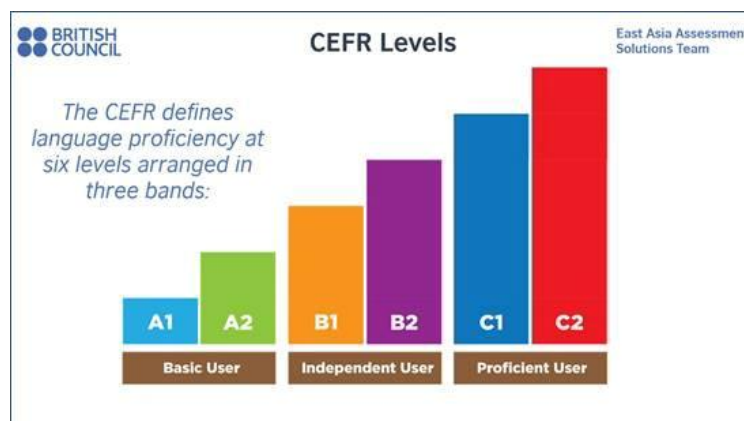


Figure 1. 6 CEFR Levels (British Council, 2022).

The CEFR is designed to promote critical reflection on various components of language education, including curricula, syllabuses, textbooks, and evaluation systems (British Council, UKALTA, EALTA, & ALTE, 2022). It categorizes language proficiency into six levels: A1 (beginner), A2 (elementary), B1 (intermediate), B2 (upper-intermediate), C1 (advanced), and C2 (proficient). This standardized scale allows educators, learners, and testing institutions in different contexts to assess and compare language abilities quickly and consistently.

CEFR outlines a language use model known as the ‘action-oriented approach’. This model views language use, which includes language learning, as a set of actions performed by individuals who act both personally and socially to develop a variety of competences, especially communicative ones. These individuals apply their competences flexibly across different contexts, conditions, and constraints to engage in language activities. Such activities involve processing language to produce or understand texts related to specific themes and domains, using strategies deemed most suitable to accomplish given tasks. The continuous monitoring of these actions by participants results in the strengthening or adjustment of their competences. The framework further introduces a socio-cognitive perspective that emphasizes the cognitive mechanisms involved in language acquisition and use, as well as the influence of social context on how language is learned and employed

(Council of Europe, 2001, as cited in Cambridge ESOL, 2011). The model is illustrated in Figure 1.7 below.

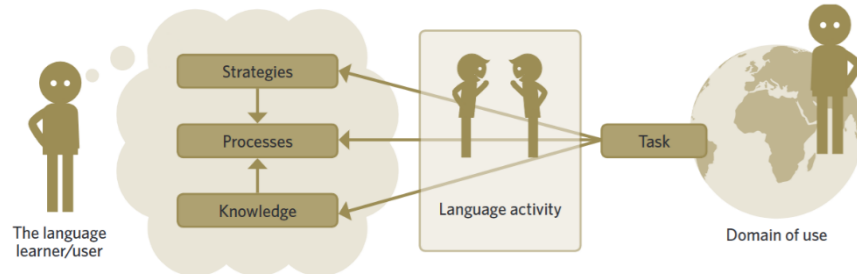


Figure 1. 7 A Representation of The CEFR's Model of Language use and Learning (Council of Europe, 2001, as cited in Cambridge ESOL, 2011).

Using this framework, CEFR helps determine the appropriate difficulty level of learning materials based on students' abilities at each educational stage. It provides a clear structure for aligning instructional content, assessments, and learning outcomes according to language proficiency levels. The CEFR is often represented in a descriptive table that outlines what learners can typically do at each level across four key language skills: listening, reading, speaking, and writing. For example, learners at level A1 can understand and use familiar everyday expressions, while those at level C2 can understand almost everything they hear or read and express themselves spontaneously and precisely, even in complex situations. Similar to other frameworks, the CEFR encompasses two primary dimensions: a vertical dimension and a horizontal dimension. The vertical dimension illustrates the progression through various proficiency levels. This progression is represented in Figure 1.8 below.

Proficient User	C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.
	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
Independent User	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes & ambitions and briefly give reasons and explanations for opinions and plans.
Basic User	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

Figure 1. 8 Common Reference Levels: global scale from Chapter 3 of the CEFR (Council of Europe, 2001, as cited in Cambridge ESOL, 2011).

In Indonesia, the adoption of CEFR has been instrumental in aligning English language teaching with international standards (OECD, 2023). The framework has been integrated into the curricula of many schools and universities, providing a clear structure for language instruction and assessment. According to OECD (2022), this adoption has improved the overall quality of English education in the country and enhanced mutual understanding between educators, students, and employers regarding language proficiency levels.

The results of CEFR implementation in Indonesia have been promising. Data from OECD (2023) shows that students following CEFR aligned curricula tend to perform better in standardized English tests. This improvement is particularly notable in reading and writing skills, where students have shown significant progress. The structured approach offered by

CEFR enables learners to build a more comprehensive understanding of the language, empowering them to use it effectively in a variety of real-life contexts.

1.7.8 The Organisation for Economic Co-operation and Development (OECD) Learning Compass 2030



Figure 1. 9 The OECD Learning Compass (OECD, 2019).

The OECD Learning Compass 2030 is an evolving educational framework that presents an aspirational vision for the future of learning. Rooted in the broader goals of education, it aims to guide individuals and societies toward a shared future focused on individual and collective well-being. This vision emphasizes the importance of equipping students not just with academic knowledge, but also with the competencies they will need to thrive in a rapidly changing world.

At the heart of the framework is a focus on student agency, well-being, and a broad set of competencies that include knowledge, skills, attitudes, and values. These competencies are globally informed but designed to be

adaptable to local contexts, ensuring relevance and applicability in diverse educational settings. The metaphor of a “learning compass” underscores the need for students to develop the capacity to navigate unfamiliar situations independently. Rather than relying solely on fixed directions from educators, students are encouraged to find their own meaningful and responsible paths forward.

Importantly, the OECD Learning Compass 2030 is not intended to serve as a prescriptive assessment or curriculum framework. Instead, it acknowledges the intrinsic value of learning in all its forms and contexts, both inside and outside of the classroom. According to the OECD (2019), the compass promotes a broad and inclusive understanding of learning, recognizing that education extends beyond formal instruction to include a wide range of experiences and environments.

A central concept within this framework is student agency, defined as the capacity and willingness of students to positively shape their own lives and the world around them. This involves setting personal goals, engaging in thoughtful reflection, and taking responsible action to bring about meaningful change. Educational systems that cultivate student agency go beyond traditional instruction and assessment, embracing a model of co-construction, where students and teachers become collaborative partners in the learning process.

This collaboration, known as co-agency, highlights the shared responsibility of teachers, students, parents, and the broader community in supporting learners. In such systems, students develop a stronger sense of purpose and ownership over their education. The teaching and learning process becomes a dynamic partnership aimed at achieving common goals and empowering students to take charge of their futures (OECD, 2019).

1.7.9 English Proficiency Index (EPI)

The English Proficiency Index (EPI) aims to rank countries based on the English language proficiency levels of adults who have taken the EF (English First) test. The EF English Proficiency Index (EF EPI) is the world's

largest ranking of countries/regions by adult English skills. Published annually, the EF EPI is an important international benchmark for adult English proficiency. The EF EPI reports identify the most common pitfalls and highlight the most effective strategies for improving English proficiency.

Table 1.4 Indonesia EPI Results (EF, 2024).

Year	Rank	Country
2011	34	44
2012	27	54
2013	25	60
2014	28	63
2015	32	70
2016	32	72
2017	39	80
2018	51	100
2019	61	100
2020	74	100
2021	80	112
2022	81	111
2023	79	116
2024	80	118

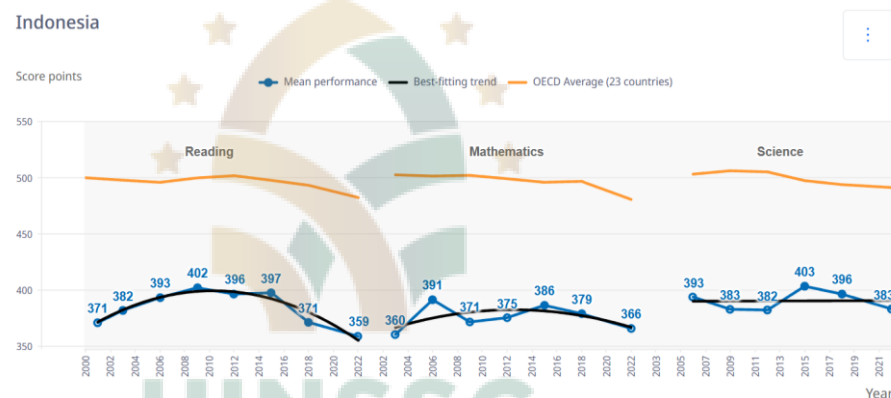
Table 1.4 indicates that Indonesia's English Proficiency Index has remained at a low level over the past decade, with a significant decline of 46 points from 2012 to 2024. This downward trend highlights a serious literacy crisis in the country.

1.7.10 Program for International Student Assessment (PISA)

The Programme for International Student Assessment (PISA), administered by the Organisation for Economic Co-operation and Development (OECD), is a triennial international survey that measures the competencies of 15-year-old students in reading, mathematics, and science. In the 2022 cycle, PISA also evaluated students' creative thinking skills,

emphasizing their ability to generate original and diverse ideas, as well as to evaluate and refine the ideas of others to produce innovative outcomes. The assessment featured tasks across four domains: written communication, visual expression, social problem-solving, and scientific problem-solving. According to data the 2022 results from the Programme for International Student Assessment (PISA) 2022 results, Indonesia ranked 69th out of 80 participating countries. Indonesian students achieved an average score of 359 in reading, 366 in mathematics, and 383 in science.

Chart 1. 3 Indonesia's PISA 2022 Results in Reading, Math, and Science (OECD, 2023).



The average performance in mathematics, reading, and science declined in the 2022 PISA assessment compared to 2018. Overall, the 2022 outcomes ranked among the lowest ever recorded by PISA across all three subjects, reaching levels similar to those seen in 2003 for reading and mathematics, and 2006 for science. Although earlier assessments had shown improvements, these gains were reversed by the downward trends beginning in 2015.

Between 2018 and 2022, the performance gap in mathematics between the top-performing 10% of students and the lowest-performing 10% narrowed, primarily due to a decline in scores among high achievers, while scores among lower achievers remained relatively unchanged. In reading and science, however, this performance gap showed little to no change.

When compared to 2012, the share of students falling below the basic proficiency benchmark (Level 2) rose by 5 percentage points in mathematics

and by 19 percentage points in reading, while science scores did not experience a significant shift.

1.7.11 Transformative Pedagogy

Transformative pedagogy is an educational approach aimed at fostering critical awareness, social justice, and personal development among learners. It challenges conventional teaching methods by promoting reflection, self-examination, and a sense of social responsibility and advocacy. According to Mezirow (1997), transformative learning occurs when individuals reshape their perspectives through critical reflection, resulting in more inclusive and socially aware viewpoints.

Building on this, Farren (2019) highlights key elements of transformative pedagogy that support independent language teaching and learning. These elements include emerging literacies, such as intercultural literacy, and attributes that help language educators develop a comprehensive professional identity as practitioners, researchers, and leaders. This approach represents a shift in the way knowledge is delivered, particularly in literacy education, aligning with the growing use of digital literacy tools and the demands of 21st-century education, which emphasize student autonomy. Consequently, pedagogy has evolved to become more flexible and complex, both in Indonesia and around the world. Transformative pedagogy also involves rethinking the educational system by focusing on creative and meaningful teaching methods, often incorporating the arts. This makes learning more serious yet enjoyable.

1.7.12 Differentiated Learning

Education is essential for humans because, through education, individuals can develop their potential. In addition, education indirectly enables people to interact with others as social beings (Khaidir & Suud, 2020). Education takes place from elementary school to university. The elementary education level is one form of formal education that serves to enlighten the nation by developing students' innate abilities. It also serves as

the foundation for forming individuals at the next levels of education (Mamurov, 2020).

Currently, the curriculum implemented in Indonesia is the Independent Curriculum, which is characterized by differentiated learning (Handayani et al., 2022; Dariyani et al., 2022). The purpose of differentiated learning is to adapt classroom instruction to meet the individual needs of each student. These adaptations specifically take into account students' learning profiles, interests, and readiness to achieve higher learning outcomes. This aligns with Marlina et al. (2019), who state that differentiated learning involves adjustments based on students' interests, learning preferences, and readiness levels to create an effective learning environment that enhances student achievement. Differentiated learning is not the same as individualized instruction, but rather a strategy that embraces diverse potentials and learning needs through independent learning approaches.

Differentiated learning also reflects a 21st-century perspective on teaching and learning. Although not a new concept in the education field, it continues to evolve. In a broader context, differentiated learning especially in motor learning is associated with dynamic systems theory, which highlights the importance of variability in learning processes (Schöllhorn, 2012).

In supporting differentiated learning, digital learning resources play a vital role by enabling students to take ownership of their learning and address their individual needs. Differentiated instruction tailors teaching methods to accommodate diverse talents and learning styles (Morgan, 2014). More than that, each student faces unique challenges in learning. Similar to how the medical field sees a disease as unique to the individual (Lian & Sangarun, 2017), education must also recognize the uniqueness of each learner. Since the brain does not directly perceive the world but interprets it, it's natural that students experience different kinds of learning difficulties (Lian A.B., 2018).

Therefore, differentiated instruction requires teachers to proactively address students' specific needs in daily teaching by monitoring progress, recognizing individual challenges, and adjusting their teaching strategies

accordingly (Masters, 2010, as cited in Mills et al., 2014). This means offering varied instructional methods, materials, and activities tailored to each learner. Teachers must recognize the diversity of knowledge, skills, interests, and backgrounds that students bring into the classroom, and respond in ways that value these differences and engage students meaningfully (Mills et al., 2014).

This approach empowers teachers to create inclusive classrooms where all students have opportunities to succeed. Nonetheless, many educators still rely heavily on guidance from policymakers and may expect top-down instructions (Lian A.B., 2022). According to Howard Gardner's theory of multiple intelligences, differentiated instruction enables students to learn in ways that align with their strongest intelligences (Kapusnick & Hauslein, 2001, as cited in Morgan, 2014). When teachers allow students to solve problems using their preferred intelligences, they offer scaffolding that significantly enhances student success (Morgan, 2014).

Moreover, this instructional model emphasizes multisensory learning, a hallmark of non-traditional pedagogy. By encouraging students to use their dominant senses in learning, multisensory methods deepen understanding and retention. To support this effectively, digital resources must be employed to deliver personalized materials and interactive activities. As students come with different knowledge levels and learn through different intelligences, differentiated learning becomes an effective means of meeting these needs.

Because students construct language and understanding in their own ways, learning activities must also be varied and student-centered. This promotes active participation and engagement in the learning process. At its core, learning is driven by feedback its function, timing, and impact to learner-centered approaches (Lian A.B., 2022).

1.7.13 Digital Literacy in 21st Century Learning

Autonomous learning is a key component of 21st-century education, characterized by a student-centered approach. In this model, learners take charge of their educational journey by identifying their preferences and priorities, selecting the most suitable techniques, and monitoring their own

progress (Zulaihah & Harida, 2017; Afdillah, D. N., 2021). According to Smith (2023), autonomous learning is a process where students actively set learning goals, choose appropriate resources, and evaluate their achievements.

Autonomous learners develop personalized learning patterns, while teachers shift their role to facilitators who foster creativity and innovation in instructional practices. This method demands innovative tools that allow students to study independently and effectively. One such tool is *Reading for Emotion*, introduced by A.-B. Lian (2017; 2020), which encourages critical and reflective thinking without relying on traditional grammar-based instruction. This approach utilizes explanatory learning, in which students explore and interpret texts through the analysis and comparison of emotional perspectives.

In parallel with autonomous learning, digital literacy plays a crucial role in 21st century education. The American Library Association (2013) defines digital literacy as the ability to use information and communication technologies (ICTs) to find, evaluate, create, and communicate information—requiring both cognitive and technical competencies. It includes the capacity to navigate digital media, use tools responsibly and creatively, and engage in informed communication.

For English as a Foreign Language (EFL) teachers and learners, being digitally literate means possessing three core competencies:

- a) Information Literacy (IL): The ability to ethically and effectively select, analyze, and use information for gaining and sharing knowledge.
- b) ICT Skills: The capacity to access, manage, integrate, evaluate, and create content using digital tools and networks.
- c) Media Literacy (ML): The ability to access, analyze, evaluate, and communicate messages across various media formats (Chu et al., 2017).

In today's digital age, technological proficiency is essential. The widespread availability of digital media has made EFL instruction more accessible, especially for tech-savvy educators. Since many students are

already digital natives, it becomes even more critical for EFL teachers to assess their students' existing digital literacy levels before implementing ICT programs. Understanding students' capabilities and potential barriers ensures more effective integration of digital tools (Eryansyah et al., 2019).

21st Century Learning is a dynamic educational approach that emphasizes the knowledge, skills, and attitudes necessary for learners to succeed in a rapidly evolving world. According to Scott (2015), this includes the "4C" critical thinking, creativity, collaboration, and communication along with digital literacy and adaptability to technological and informational shifts.

The Partnership for 21st Century Learning (P21) provides a framework that identifies key areas in which students must be proficient: technology, media, information, learning and innovation, and life and career skills (P21, 2015). This framework underscores the essential competencies that students need not only to excel academically, but also to thrive in their personal and professional lives.

1.7.14 Traditional Learning vs. E-Learning

E-learning is a form of interactive education that leverages communication and information technologies within a digital ecosystem, enabling course delivery via electronic networks. It allows learners to access educational content beyond the boundaries of a physical classroom (Al-atabi & Al-noori, 2020). In contrast, traditional language instruction follows a conventional model that views language primarily as a system of grammatical rules and vocabulary, which students learn through memorization, translation, repetitive drills, and grammar exercises (Boumová, 2008). Despite advancements in educational technology, some educators continue to rely solely on these traditional methods without incorporating modern, innovative teaching practices (Raja, 2018).

Here are the differences between traditional learning and e-learning process (Tawafak, et al., 2019):

Traditional Learning Process	E-Learning Process
Face to Face attendance	Use of Multimedia as communication type
Lecturer are follows up all participants	Use of online technology
Lecturer are real in the class	Sharing knowledge between peer-students and with lecturers
Time distributing shortly between big numbers of learners	Time free in addition to location and when they connected
Lecturer focus on acquisition of “Knowing”	Lecturer focus of skills and acquisition of “doing”

Figure 1. 10 The Differences Between Traditional Learning and E-learning Process (Tawafak et al., 2019).

THE STUDENT'S ROLE AND STUDENT MOTIVATION		
<i>Element</i>	<i>Traditional classroom learning</i>	<i>E-learning environment</i>
THE STUDENT'S ROLE	<ul style="list-style-type: none"> • Passive listening to the teacher's lecture • Writing and presenting papers (individual or as a part of the team) • Self-directed work outside the classroom • Actively involved in practice work • Writing papers under teacher's supervision • Time-limited consultations 	<ul style="list-style-type: none"> • Possibility of active involvement during and after lecture • Influencing the creation of educational content • Communicating with the teacher and other students regardless of time and place • Actively creating the learning community based on the subject, institution or on global level • Active use of automated formative knowledge assessment • Active learning, critical thinking development, idea sharing, contextual learning • Self-directed work with the possibility of receiving feedback regardless of time and place • Influencing the educational process (continuous online evaluation)
STUDENT MOTIVATION – ENCOURAGING SELF-EFFICACY AND SELF-DIRECTED LEARNING	<ul style="list-style-type: none"> • Applying motivational models in conditions limited by time and place • Motivation depends on subject characteristics and teacher's perception 	<ul style="list-style-type: none"> • Possibility of applying different motivational models, separate for intrinsically and extrinsically motivated students • Extrinsically motivated: positive feedback, rewards, recognition, collaborative learning, learning within community, etc. • Intrinsically motivated students: selection of contextual educational content, activities, etc. • Additional motivating factors are: choice of e-learning technology, visual design of the educational materials, quantity of interaction in the environment, etc.

Figure 1. 11 The Difference Between E-learning and Traditional Learning Approach (Babić, 2011).

In addition, another study highlighted the distinction between e-learning and traditional learning, noting that one limitation of conventional classrooms is their fixed time and place for instruction a challenge that e-learning technology aims to overcome (Babić, 2011).

EDUCATIONAL CONTENT	
<i>Traditional classroom learning</i>	<i>E-learning environment</i>
<ul style="list-style-type: none"> • Textual, audio (tape recorder, radio) and video (TV, VHS) format • The same for all students • Limited access regarding time and place • Teacher chooses the content 	<ul style="list-style-type: none"> • Multimedia format (using different program tools) • Adapted to different learning styles • Possibility of multiple use in different educational contexts • Unlimited access regarding time and place • Possibility of simulating real life and business situations

Figure 1. 12 Educational Content (Babić, 2011).

Furthermore, while students in traditional classrooms typically receive information passively, those in virtual learning environments have the opportunity to actively influence and shape the educational content (Babić, 2011).

In education, teachers are expected to create learning environments that support and enhance students' learning processes. Modern educational technology allows for the development of innovative environments that can be tailored to various learning styles. Both traditional and online learning methods produce positive outcomes, but in different ways, so they are often combined in practice (Babić, 2011).

1.7.15 Digital Book and Illustrated Storybook

The rapid advancement of information and communication technologies around the world today requires teachers to master technology and digital media for teaching. According to Lian (2017), the world is undergoing a major change caused by a technological revolution largely driven by the Internet. This change affects everyone regardless of social class and provides tools that allow people to express their freedom of will, thought, and expression, sometimes at a cost. This transformation is permanent. Similarly, Rustamjon and Shahboz (2022) explain that the use of the Internet has renewed the English learning process both inside and outside the classroom, whether guided by teachers or done independently.

Technology has become an effective and important educational tool to improve teaching and learning processes. If used properly, it can motivate learning, enhance creativity and productivity, and achieve desired outcomes even beyond the classroom (Sheik & Isong, 2020). Furthermore, Bumela (2020) argues that considering the role of advanced technology in promoting personalized language learning is essential to designing more efficient educational approaches. Therefore, printed books should be replaced by digital books or electronic books (e-books) to make learning more effective and efficient. E-books are now popular because they are smaller in size compared to physical books and have search features that allow readers to quickly find words.

Digital storybooks have become a popular learning resource for young children because of their interactive and engaging features that help children develop literacy skills. These storybooks often include multimedia elements such as animations, sound effects, and interactive components that enhance the reading experience and support language development (Fibriasari et al., 2021). Nicholas and Paatsch (2023) emphasize that digital storybooks encourage shared reading experiences between parents and children, benefiting children's language, emotional, social, and cognitive growth. In addition, Wong and Neuman (2019) found that digital storybooks support early literacy development among preschoolers from low-income families just as well as traditional books.

Moreover, Utomo (2018) explains that text and illustrations are important parts of illustrated storybooks because they provide readers with information through stories and pictures. Students can learn about society's past and present, geography, nature, plants, and animals through illustrated storybooks. These books help students relate their personal experiences as they grow. Research by Helyanti (2022) shows that listening to stories triggers the release of oxytocin in the brain, a bonding hormone that makes us care deeply about the characters. Producing oxytocin also releases empathy, which is the highest form of critical thinking. Therefore, illustrated

storybooks can stimulate children not only to develop a strong desire to read and learn about the world, but also to improve their critical thinking, elevating lower-order thinking skills into higher-order thinking skills.

1.8 Previous Research

Previous research results serve as a foundation from which the researcher presents some previous studies related to this research. By examining these studies, the researcher gains deeper insight into the topic, understands challenges faced in earlier efforts, and recognizes important aspects that enhance the interpretation of findings and their educational applications (Tahan, 2022). Therefore, reviewing related prior research helps the researcher to identify relevant topics and further develop the study.

The first previous study is written by Rahiem (2021) entitled *Storytelling in Early Childhood Education: Time to Go Digital*. This study aimed to explore the integration of digital storytelling in early childhood education. It was a qualitative study with a phenomenological design. The research highlighted the significant benefits of digital storytelling, such as enhancing communication skills, fostering collaboration, and promoting emergent literacy practices. However, it also pointed out the limited focus on the long-term impact of digital storytelling on children's cognitive development and abstract reasoning skills. This study provides valuable insights into how digital tools can be effectively used in early childhood classrooms to support young learners.

The second previous study is written by Tri Pujiani et al. (2023) entitled *The Effectiveness of E-storybook in Improving Young Learners' Vocabulary Mastery*. This research aimed to investigate the impact of e-storybooks on young learners' vocabulary acquisition. The study was designed as experimental research and involved participants from various regions in Indonesia and Hungary. The findings indicated that the use of e-storybooks significantly improved young learners' vocabulary mastery. The e-storybooks were distributed to young learners through their parents, and the media and materials were validated by experts. Interviews with teachers and parents provided additional feedback. The study concluded that e-storybooks are an effective tool for enhancing vocabulary mastery among young

learners. However, the research primarily focused on vocabulary acquisition and did not extensively explore other cognitive skills such as abstract reasoning.

The third previous study is *Integrating AI and Neuroscience in L2 Literacy Education: Advancing Emotional Literacy and Social Equity through ChatGPT and the Reading for Emotional Model*, written by Ania Lian (2024). This study highlights the potential of these technologies to enhance emotional literacy and promote social equity. The Reading for Emotion model developed by Lian (2023) emphasizes the importance of emotional and cognitive engagement in language learning, utilizing AI tools like ChatGPT to analyze and respond to emotional content in texts, thereby enriching learners' comprehension and expression. Research in affective computing within computer-assisted language learning supports the use of emotionally intelligent systems to increase learner motivation and personalize learning experiences.

The fourth previous study was conducted by Sudimantara (2021) entitled *Transformative Learning and Student Agency in Academic Writing in Undergraduate English Language Teacher Education Degree Programs in Indonesia*. This study aimed to offer an alternative approach to the pedagogy of academic writing currently practiced in Indonesia. The research results showed that the new pedagogy for academic writing had a highly positive impact on the academic writing abilities of EFL learners.

The fifth study was conducted by Bumela (2020) entitled *Designing 21st Century Language Learning Scenario in Indonesia: A Perspective from Computer-Assisted Language Learning*. This study aimed to investigate how key elements of the course syllabus are integrated into a learner-centered pedagogy of academic writing at the English Language Teacher Education department in Indonesia to meet the demands of 21st-century learning. The findings revealed the main areas of innovation in Academic Writing courses, including: (1) the adoption of new cross-disciplinary learning theories, (2) the establishment of accessible technological learning infrastructures, and (3) the introduction of new roles for lecturers/teachers in technology-enhanced language learning.

The sixth study was conducted by Helyanti (2022) entitled *Developing Digital Literacy Resources for Middle School Students: A Highlight on Literacy Level*. The purpose of this research was to develop appropriate digital literacy resources tailored to students' literacy levels. The results indicated that the digital literacy resources developed are applicable within the current curriculum context.

The last study was conducted by Utomo (2018) entitled *Developing Illustrated Storybooks to Improve Beginning Reading Skills and Learning Motivation*. This study aimed to develop appropriately illustrated storybooks to enhance students' early reading skills and motivation and to determine the effectiveness of illustrated storybook media for beginning reading skills and learning motivation among first-grade elementary students. The findings showed that the collection of illustrated storybook media met practicality criteria based on evaluations by material and media experts and received very positive responses from both students and teachers. The illustrated storybook media proved effective in boosting students' motivation and early reading skills.

According to previous research, there are various discussions about digital storybooks. Studies on reading and its related fields are also diverse. This research involves *Designing a Digital Illustrated English Storybook to Boost Abstract Reasoning Skills in Early Learners*, with a specific focus on a case study at a primary school in Indonesia. The study explores how digital storybook can be utilized to boost cognitive development and abstract reasoning in early learners, as well as provide valuable insights for educators and curriculum developers.

1.9 Frame of Thought

In this research, the researcher intends to design a digital illustrated English storybook to boost abstract reasoning skills in early learners. Figure 1.13 show the frame of thought of this research.

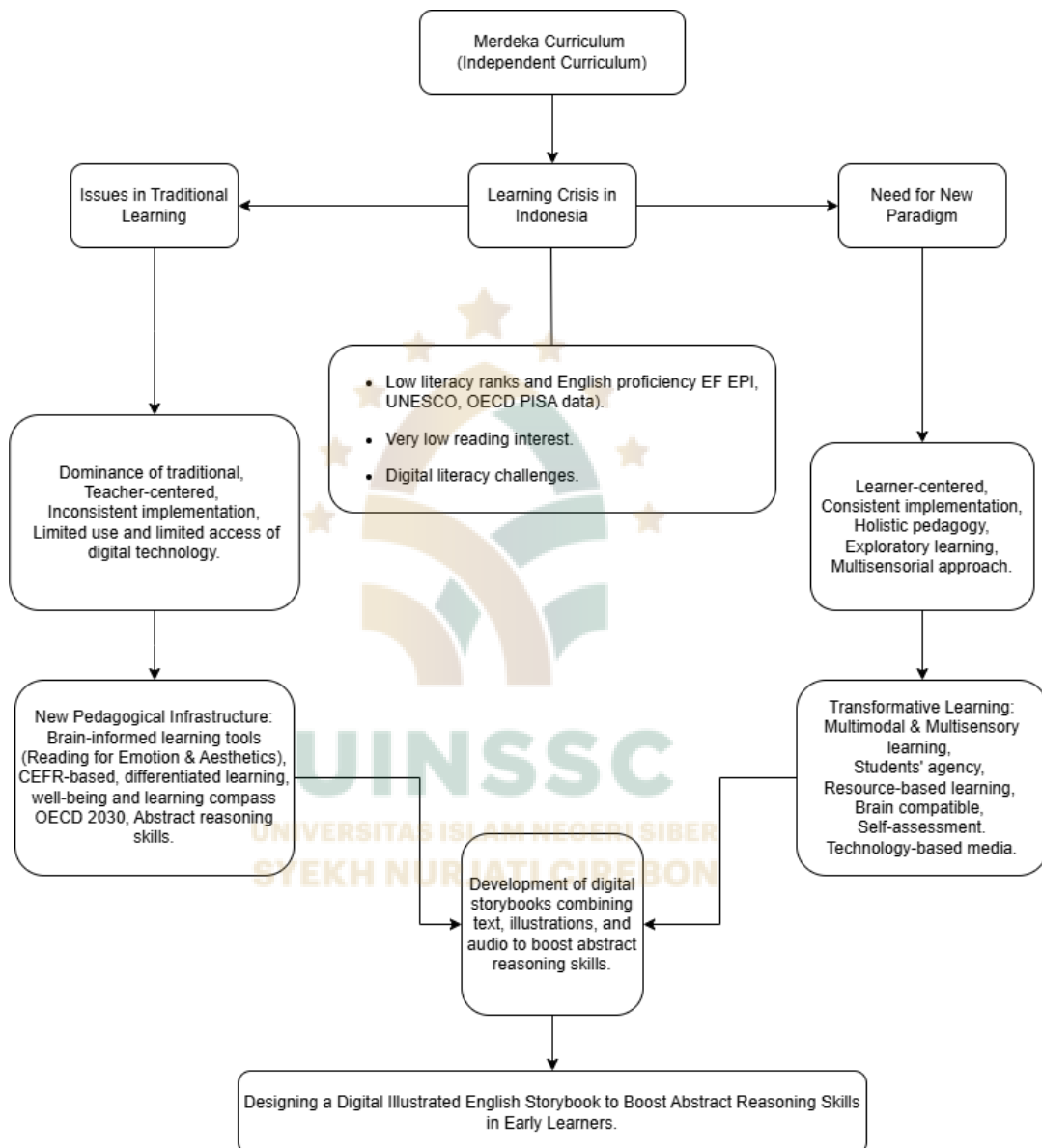


Figure 1. 13 Frame of Thought

1.10 Research Method

Research methodology refers to the study of the processes involved in conducting scientific research. It provides a systematic approach to addressing research problems through logical methods. Understanding methodology helps to grasp both the research outcomes and the techniques used to achieve them (Patel & Patel, 2019). The research methodology is divided into the following stages, which are as follows: the research design and research steps, data sources and types, methods, data collection and instruments, data techniques for data analysis, and the overall research timeline.

1.10.1 Research Design and Steps of The Research

This study is a qualitative research project employing a Research and Development (R&D). Qualitative research design is flexible and evolves in accordance with data obtained in the field (Alwasilah, 2002). Research and Development (R&D) refers to a systematic and creative process aimed at expanding existing knowledge, encompassing aspects of humanity, culture, and society, as well as exploring new applications of available knowledge. According to the OECD (2018), R&D activities must fulfill five main criteria: novelty, creativity, uncertainty, systematic approach, and transferability or reproducibility.

Furthermore, this research adopts a case study approach, as defined by Creswell in Habib (2021), who stated that a case study is a method used to examine a phenomenon in depth by collecting detailed information through various data collection strategies. This aligns with the R&D process in this study, as it investigates a specific case: the development of a culturally rooted digital storybook prototype for elementary students in Cirebon. By using a case study framework, the researcher is able to explore the development process and user responses in depth, ensuring the richness and relevance of the data.

In addition, this research is grounded in a postmodernist perspective, employing rhizomatic theory. As Lyotard (1984) argued, postmodernism values the diversity and fragmentation of knowledge, rejecting singular grand

narratives. The rhizome theory by Deleuze and Guattari (1987) complements this stance by proposing a non-linear, interconnected, and evolving model of knowledge. These perspectives support the flexible and multifaceted nature of R&D and case study research, allowing the researcher to follow multiple lines of inquiry and produce a nuanced understanding of the subject. The steps of this research are divided into two main phases as follows:

a) Research Phase:

The research phase involves several steps. First, the researcher collected notes and stories compiled during travels in the Cirebon area. Next, the researcher gathered websites and applications that offer illustrated storybooks. Following this, the researcher selected websites that are easy to use to support the development of digital literacy and evaluated the advantages and disadvantages of the features on those websites. After that, the researcher analyzed the stories based on the Reading for Emotion stages as well as structural and aesthetic principles.

b) Development Phase:

In the development phase, the researcher first created stories based on key components defining abstract reasoning ability and the process of teaching ChatGPT using the Reading for Emotion model and Aesthetics. These stories were then classified according to CEFR levels from A1 to C2, complete with readability indices using a website. Next, the researcher created illustrations for all the stories. The final step was developing a website as a product prototype

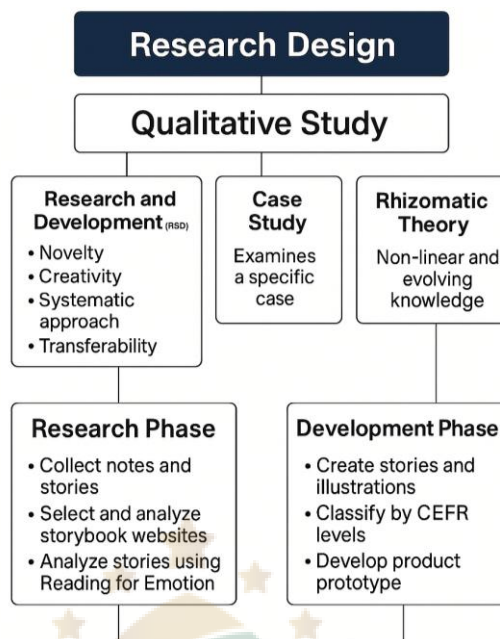


Figure 1. 14 Research Design Flowchart.

1.10.2 Sources and Types of Data

The researcher collected various journals, papers, podcasts, and books related to this recent study, which were gathered at the beginning of the research process. In addition, data sources also focused on an English teacher and third-grade elementary school students in Cirebon through interviews conducted after the product in this study was completed to understand their opinions regarding the usefulness of the product. Data from the students was also collected through questionnaires distributed to students in one class.

The type of data from the internet consists of story texts sourced from the Let's Read website and application. The data from the English teacher includes syllabus documents and interview recordings. The data from students consists of interview recordings and Google Forms. Interviews were conducted with one English teacher and two students who had used the website to gather their opinions about the usefulness of the product as their digital storybook. The questionnaire respondents totaled 14 students who completed the questionnaire after the learning activities were finished.

1.10.3 Data Collection Techniques

In this study, the researcher uses four main methods to collect data: literature review, document analysis, interview, and online questionnaire.

a) Literature Review

A literature review is an examination of scholarly articles, books, and other relevant sources on a particular issue or topic. The purpose of this method is to provide a description, summary, and critical evaluation of existing literature (Ramdhani, Ramdhani, & Amin, 2014). The literature review is conducted by the researcher to gain a deep understanding of previous research relevant to the topic and to establish a solid theoretical foundation for this study. Data is collected by reading and analyzing documents, books, and other sources that are relevant to the focus of the study.

b) Document Analysis

Document analysis is a data collection method that involves examining and interpreting written documents to obtain information relevant to the research objectives. According to Bowen (2009), document analysis allows researchers to understand the context, content, and meaning of various types of documents such as reports, notes, archives, or other written materials, which can strengthen data obtained from other methods. This method is often used in qualitative research as a rich source of secondary data and supports the validity of findings.

Therefore, the researcher conducted documentation with the syllabus as the object of documentation. The syllabus was taken from a primary school in Cirebon. The results of the syllabus data are presented in chapter 2 as evidence of how learning is conducted in the school area.

c) Interview

The interview was chosen as the data collection method because the researcher needed to communicate directly with the teachers and students who were the subjects of this study in order to collect concrete data. According to Nazir (2005), an interview is the process of gathering

information for research purposes through face-to-face question-and-answer sessions between the interviewer and the respondent using an interview guide. Interviews can also be conducted in person, via digital media, or by telephone (Easwaramoorthy & Zarinpoush, 2006). This method is used to understand how teachers and students feel about digital storybooks.

In this study, the researcher conducted face-to-face interviews with a primary school teacher in Cirebon to gain insights into the use of digitally illustrated storybooks to boost abstract reasoning skills after the learning process. Additionally, the author conducted face-to-face interviews with students to collect information on how students' interest in reading influences the interactivity of lesson plans. The complete data collection instrument will be described in the appendix.

d) Online Questionnaire

The questionnaire is a survey tool consisting of a series of questions or statements used to gather responses from respondents. The use of online questionnaires offers advantages in terms of cost efficiency, speed of data collection and analysis, and ease of access to respondents (Hooley, Wellens, & Marriott, 2012). The researcher distributed an online questionnaire to a third-grade elementary school class after the implementation of the digitally illustrated storybook product in the classroom. This questionnaire consists of 20 questions and uses the same questions as those in the interview with the students. The questions are provided in both English and Indonesian.

1.10.4 Data Analysis Techniques

This section explains the data analysis techniques. The data in this study is analyzed using four analysis techniques. These analysis techniques are as follows:

First, the literature review is conducted by the researcher to gain a deep understanding of previous research relevant to the topic and to establish a solid theoretical foundation for this study. Data is collected by reading and

analyzing documents, books, and other sources relevant to the focus of the study.

Second, document analysis. The data from documentation, with the syllabus as the object of documentation, is analyzed using document analysis. The contents of the syllabus, such as learning activities, learning resources, and assessments, are analyzed as one of the reasons for creating the product.

Third, interview analysis using word cloud and thematic analysis. The data is analyzed using thematic analysis and the creation of word clouds. Thematic analysis is a method for identifying themes within a data set. The process of thematic analysis involves reading a series of texts, marking them with various potential themes, reviewing the texts and themes, and organizing and comparing them until a coherent set of themes emerges that reflects the essential meaning of the data (Thelwall, 2022). Since the interview data consists of audio recordings, it is transcribed using semi-transcription. Semi-transcription is a type of transcription that does not provide a complete account of the interviewee's words (Edmonds & Kennedy, 2017, p. 323 as cited in Nashruddin, 2020). It only presents the main points of the respondents' answers in the interview. The purpose is to make the respondents' answers easier to understand (Nashruddin, 2020). Next, the data is translated into English. The researcher then creates several themes related to the interview content and categorizes the data accordingly. These findings are presented in the results section in more readable paragraph form. The use of word clouds aims to identify the focus of the teacher's responses. The words most frequently used by the teacher will appear larger, allowing the researcher to identify the most discussed topics. Additionally, one popular technique for visualizing the output of topic modeling is using word clouds, where the most probable words for each topic are shown in larger font sizes. Blei states that word clouds can be helpful for providing a quick and intuitive overview of the topics present in a body of text data (Blei, 2012).

Fourth, questionnaire analysis. The data from the questionnaire is analyzed using thematic analysis. The questionnaire data is translated into

English. The responses are categorized into three groups: positive and negative. The answers classified under the positive theme are summarized for each question to provide an overview of the main responses. This process also applies to responses categorized as neutral and negative.

1.10.5 Research Timeline

Table 1.5 Research Timeline.

No.	Activities	Time Allocations				
		November 2024	December 2024	January 2025	February- March 2025	April- May 2025
1.	Submission of Research Proposal					
2.	Design and Development of Storybook					
3.	Research permission					
4.	Pilot Testing					
5.	Collecting Data					
	Analyzing Data					
6.	Finishing Thesis Writing					