CHAPTER I

INTRODUCTION

This chapter is an introduction of this study which sets the stage for the research that follows. This chapter provides research problems outlined by the researcher, the context of the study, research questions, aims of the research, and significance of the research. This chapter aims to provide a clear and concise overview of the study and to establish the rationale and purpose of the research

1.1 Background of The Research

Indonesia became one of the countries that left behind in international ranking especially in education fields. Based on the data from the international English Proficiency Index conducted by English First (EF) a global education firm with an emphasis on academics, language, cultural exchange, and educational travel. With a score of 473, which is deemed low competency based on the EF Standard English Test, Indonesia ranks 79th out of 113 nations and 14th in Asia on the English competency Index in the English First (EF) 2023 report (Tan, 2023). This is an objectively scored, standardized exam that places test takers' language proficiency into one of six categories determined by the Common European Framework of Reference (CEFR).

Figure 1.1 Global Ranking of English Proficiency Index 2023

Source: EF, EPI 2023 Database

Very high proficiency		High proficiency		Moderate proficiency		Low Proficiency		Very low proficiency	
1	Netherlands (647)	13	Poland (598)	31	Honduras (544)	64	Pakistan (497)	92	Palestine (445)
2	Singapore (631)	14	Finland (597)	32	Georgia (541)	65	Lebanon (496)	93	Uzbekistan (442)
3	Austria (616)	15	Romania (596)	33	Belarus (539)	66	Turkey (493)	94	Cameroon (438)
4	Denmark (615)	16	Bulgaria (589)	34	Ghana (537)	67	Sri Lanka (491)	94	Senegal (438)
5	Norway (614)	17	Hungary (588)	35	Spain (535)	67	Tanzania (491)	96	Jordan (431)
6	Sweden (609)	18	Slovakia (587)	35	Italy (535)	69	Ethiopia (490)	97	Sudan (430)
7	Belgium (608)	19	Kenya (584)	35	Moldova (535)	70	Brazil (487)	98	Cambodia (421)
8	Portugal (607)	20	Philippines (578)	38	Costa Rica (534)	71	U.A.E. (486)	98	Haiti (421)
9	South Africa (605)	21	Lithuania (576)	39	Albania (533)	71	Panama (486)	100	Oman (418)
10	Germany (604)	22	Luxembourg (575)	39	Uruguay (533)	73	Mongolia (482)	101	Angola (416)
11	Croatia (603)	23	Estonia (570)	41	Bolivia (532)	73	Qatar (482)	101	Thailand (416)
12	Greece (602)	24	Serbia (569)	41	Russia (532)	75	Colombia (480)	101	Benin (416)
		25	Malaysia (568)	43	Cuba (531)	76	Morocco (478)	104	Kazakhstan (415)
		26	Czech Republic (565)	43	France (531)	77	Algeria (475)	105	Somalia (411)
		27	Nigeria (562)	45	Ukraine (530)	78	Madagascar (474)	106	Iraq (410)
		28	Argentina (560)	45	Paraguay (530)	79	Indonesia (473)	107	Côte d'Ivoire (409)

Figure 1.1 shows that Indonesia is in the 79th English Proficiency Index. Indonesia is categorized as a country with low English proficiency in the global ranking of countries and regions in 2023.

Table 1.1 Cluster of EF EPI Score

Source: EF, EPI 2023 Database

CEFR	EF EPI Score	EF EPI Band
C2	700-800	Very high
C1	600-699	Very high
B2	550-599	High
	500-549	Moderate
B1	450-499	Low
	400-449	Very low
A2	300-399	Very low
A1	200-299	Very low
Pre-A1	1-199	Very low

Table 1.1 shows that the English Proficiency Index has six clusters where the categorization is seen from the English language test scores. The table above shows that a score of 1-449 is in the very low category, an English score of 450-499 is in the low category, a score of 500-549 is in the Moderate category, an English score of 550-599 is in the High category, a score of 600-800 is in the very high category.

Table 1.2. Indonesia's EPI Level Recapitulation 2011-2023

Year	EPI Rank	EPI Score	Number of Participating Countries	EPI Band
2011	34	447	44	Low
2012	27	498	54	Low
2013	25	513	60	Moderate
2014	28	506	63	Moderate
2015	32	503	63	Moderate
2016	32	505	70	Moderate
2017	39	495	72	Low
2018	51	490	80	Low
2019	61	476	100	Low
2020	74	453	100	Low
2021	80	466	100	Low
2022	81	469	112	Low
2023	79	473	113	Low

The other international assessment conducted by the Organization for Economic Cooperation & Development (OECD), Program for International Student Assessment (PISA), which evaluates students' knowledge and proficiency in science, arithmetic, and reading at the age of 15. These assessments look at students' critical thinking, problem-solving, and communication skills. This offers insight into the extent to which educational systems are readying students for success in the real world and beyond. Through worldwide comparison of results, policy makers and educators in Indonesia can gain knowledge about the policies and practices of other nations (OECD, 2022).

Figure 1.2 Indonesia's trends performance in mathematics, reading and science (PISA)
Source: PISA Databased (OECD, 2022)
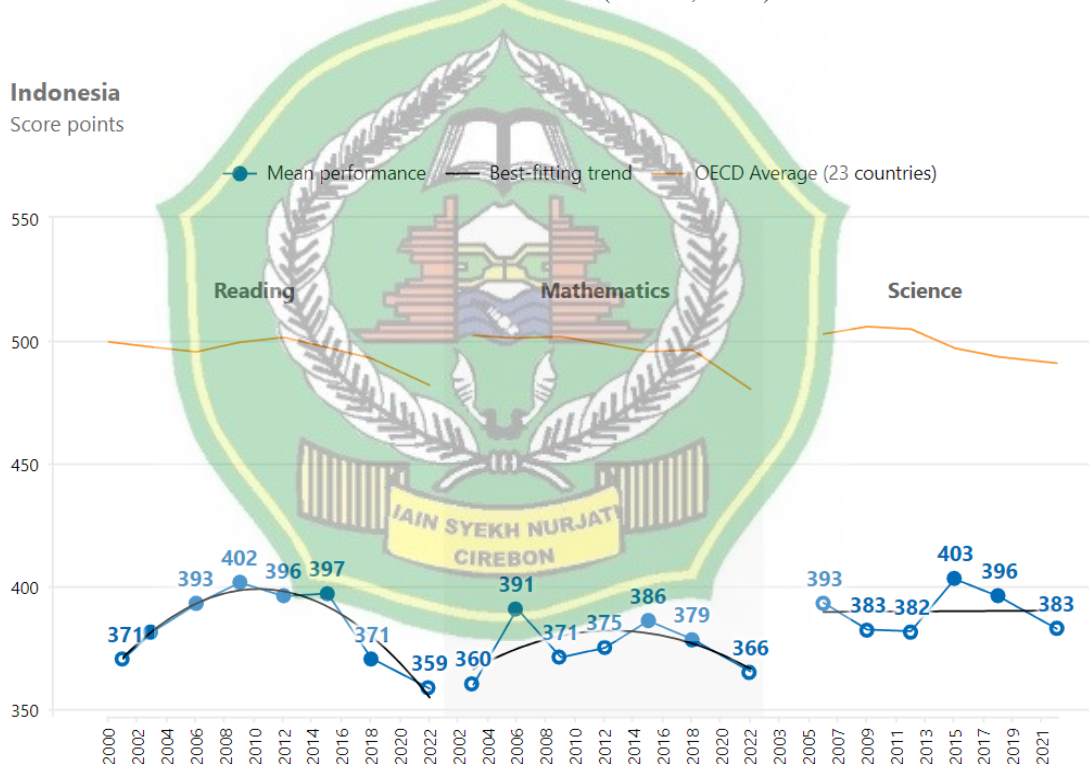
Indonesia has a low literacy rate, as seen by its ranking of 60th out of 61 reading-interest countries in research The World's Most Literate Nations by Miller & McKenna (2016). Students need to learn literacy as a prerequisite prior to them being able to access other types of knowledge. Since literacy serves as the primary basis for comprehending all of the knowledge we acquire. To understand any topic of study, literacy is a prerequisite (Alwasilah, 2014, Helyanti, 2022).

Educators contend that Indonesia repeatedly encounters these problems as a result of the continued use of traditional methods of instruction and learning. The English language curriculum in Indonesian schools has to be revised because the way it is now taught and learned has not been effective. Lian et al. (2023) assert that in order to ensure equitable English learning for all, innovative methods are required. According to Sudimantara (2021), we can no longer comprehend a single phenomenon by using the so-called classical science that focuses on a single variable. In Indonesia, the teaching of English as a second language has primarily relied on pedagogic grammar and descriptive linguistics, where language acquisition is reduced to mastering grammar or linguistic formulas without taking into account other, more basic language learning components.

Moreover, traditional teaching and learning does not promote essential skills for students, abstract thinking which trains students to care for their environment. Meanwhile, traditional teaching and learning still relies on textbooks that were written years ago instead of digital sources that can be accessed by students. Furthermore, not enough resources and materials, crowded classrooms, teachers that lack sufficient training or fluency in the language, and policies that prevent teachers from using innovative approaches to teach English are all common causes of low English proficiency among students (Sudimantara, 2021).

Other than the implementation of traditional learning, there are also challenges of 21st century learning that increasingly urges Indonesia to carry out new pedagogical approaches, especially in English teaching and learning. According to Lian & Sussex (2018), the increased use of English brings to light certain contemporary issues. The degree of English language competency varies greatly throughout Asia. While they acknowledge the value of English as a universal language for commerce, education, and worldwide communication, they also point out that differences in language proficiency can make it difficult for people to communicate and study together effectively. Furthermore, according to Lian and Sussex (2018), the issue has been made more complex by the development of the internet and other technological advancements, which have led to the emergence of a self-managing, frequently do-it-yourself society that engages in "just-in-time" rather than "just-in-case" activity. Furthermore, there are academic sectors that have priorities for 21st-century learning that must be met.

Other than the challenges, Indonesia has vision and priorities that need to be achieved in 21st century learning. According to Lian et al., (2017), provide a comprehensive framework for addressing and assessing changes and advancements in education both locally and worldwide. These developments include identity, language, and culture; wellbeing, sustainability, and globalization; and digital futures and new learning. This is in line with the two UNESCO-mandated aims, the digital society and the green economy, which every nation must accomplish by 2030. obstacles in achieving Human Development and Technological Mastery, one of the Visions for Indonesia Emas 2045. These factors need the development of innovative teaching and learning strategies that go beyond the traditional curriculum and classroom (Lian & Sussex, 2018). Therefore, in order to face the challenges and achieve the vision, Indonesia must transform to a new learning approach that is compatible with students as human beings.

There are several previous studies in the same area that are divided into 2 clusters. First cluster is, the researches which use the existing text from the internet for their research such as Gilbert, (2017), Manulu (2019) and Kesson, H. (2020), these research investigate the students' perception of digital reading, yet in these research did not provide or discuss about pedagogical approaches for better understanding and reading skills.

Meanwhile, pedagogical approach has an important role in teaching and learning activity. The academic approach which focuses on memorizing, grammar-based learning and content-based learning are outdated. Indonesia is urged to shift from outdated traditional learning with academic approach into non-traditional learning with intellectual approach that focuses on essential skills such as critical thinking, problem-solving, sense- making and meaning-making. As indicated by Sudimantara (2021), the currently mandated approaches to literacy in Indonesia once again focus more on skills and content than the students' life experiences and contexts. Learning in the 21st century makes students able to learn automatically and independently. Since the goal of teaching is to help students do self-discovery not transferring knowledge. The role of the educator is to facilitate learning for the students by offering guidance and direction. According to Lian & Pineda (2014), self-adjusting personal learning networks created by the learners themselves are used to meet both perceived and real needs in their discussion of rhizomatic learning.

The second cluster is where the researchers their own develop digital reading resources such as Helyanti (2022), Puspita (2022), and Sari (2023), in these research, the researchers did not only discuss about technology but also pedagogical approach for the better students' skills. Then, the position of this research is in the second cluster which not only focuses on technological innovation as a tool but also the pedagogical approach, in this case multisensory approach.

This research examines pedagogical issues, challenges, and future directions for learning in 21st century Indonesia, with a focus on promoting transformative learning in the educational system. Bumela (2020) argues that Indonesian language learning needs an overhaul, incorporating new teaching methods that align better with how humans naturally learn. Lian & Sussex (2018) support this notion by proposing a flexible framework for language learning and teaching. This framework emphasizes challenging students' existing understanding of the world and personalized learning experiences. It prioritizes the learner, encouraging students to develop independent learning strategies and tackle challenges on their own terms.

The National Science Foundation (NSF) recognized the transformative potential of technology in education, viewing cyber learning as an advanced learning approach for the 21st century. According to Roschelle (2015), cyber learning is a movement that emphasizes the power of technology to create new and effective learning experiences based on how people learn. Similarly, the University of Washington (2022) defines cyber learning as the use of new technologies to create innovative learning opportunities that were previously impractical. However, for cyber learning to be successful, it requires several key pillars. These include: (1) Applying scientific knowledge about how people learn, (2) Utilizing emerging technologies, (3) Designing activities that promote transformative learning, (4) Engaging teachers and educators, (5) Assessing deeper learning outcomes (6) Emphasizing continuous improvement.

Combining the Merdeka curriculum with new pedagogy which is compatible with human nature of learning, Indonesia can create a transformative learning that prepares students for the challenges of the 21st century. Since the Merkeda Curriculum also places more emphasis on exploratory learning, which emphasizes inquiry learning and discovery learning. In order to encourage students to engage

and learn actively in the classroom, teachers can use different digital teaching strategies, such as exploration, discussions, experiments, and feedback(Son, 2019, Ellen, 2023).

Cyberlearning is a potential pedagogy, since it is built on both learning neuroscience and technological innovation, Indonesia needs pedagogical approaches that leverage learning neuroscience, particularly the power of stories. Research by Zak (2013) and Fletcher (2021) explain the close connection between stories and brain function. Stories can influence emotions, modify behavior, and enhance critical thinking. Understanding the "mechanics" of impactful stories allows educators to design learning experiences that foster creativity, resilience, empathy, and problem-solving skills. Essentially, stories can rewire the brain, not just chemically, but also by promoting connection and understanding through shared emotions.

According to psychologist Peterson (2017), who specializes in using stories as a medium for human development, connection, and transformation, cortisol helps with attention and memory formation, dopamine regulates emotional reactions, and oxytocin is linked to empathy and a sense of connection with the tale. Rodriguez (2017) provides evidence for the idea that cortisol is released throughout the story-telling process when something demands attention from humans. Then there is dopamine, which is created to support a complex learning mechanism that gives people pleasure when they follow emotionally laden storyline events. Then there's oxytocin, a hormone that has been shown to foster sympathetic behavior and may just be the magic bullet of storytelling. According to Peterson (2017), oxytocin is linked to empathy and a sense of connection with the narrative, cortisol aids in attention and memory formation, and dopamine helps control emotional reactions. Humans can therefore respond to a situation in the most appropriate way if they are able to empathize with other people. Situations like these should therefore serve as the foundation for decision-making, meaning-making, and sense-making because our minds form and examine our own truths and beliefs through stories.

The human brain favors processing data in narrative form. Fletcher (2021) believes that the human brain is capable of telling stories, which are narratives that elicit strong feelings in people. Learning a language is essentially a process of creating personal meaning based on the learner's interpretation of the linguistic signal. Narrative intelligence is therefore a crucial component of human cognition, particularly in sense-making and interpersonal communication. Humans use a lifetime of pertinent experiences to make sense of stories and determine the best course of action in real-world situations (Li, et al., 2012).

Besides pedagogical approaches, Indonesia need technology innovation in order to facilitate effective cyberlearning. According to Lian (2017), as technology has advanced, there has been a significant shift in the ways that people interact with one another and produce, recognize, express, and apply information. As a result, educational technology advancements offer learning materials that cater to individual needs—in this case, proficiency in English. Therefore the researcher initiates the research title "CEFR-Based Digital Learning Resources: The Local Wisdom Values of Folklore from Cirebon to Support Cyberlearning."

1.2. Identification of The Issue

Currently, Indonesia is facing a learning loss, the emergency situation when Indonesian students are in a crisis of love learning. The crisis is proven by the low level of international ranking, such as the low level of English Proficiency Index, literacy level, and so on. Then people believe this crisis is the impact of the use of outdated pedagogy, where the traditional learning is still implemented over and over. When students do not perform well in English, it is often because of problems such as not having enough resources or good materials, overcrowded classes, teachers who need better training or English skills, and restrictions that limit teachers from teaching English in different ways (Sudimantara, 2021).

The traditional learning that is teacher-centered and more focused on memorization and grammar-based learning, is no longer compatible with global challenges in 21st century learning. Sudimantara (2021), states that we can no longer rely on the so-called traditional science with the focus of one single variable in order to understand a single phenomenon. Whereas Indonesia needs a new pedagogical approach that is compatible with the nature of human learning mechanisms and focus on scientific insights about how people learn then become

lifelong learners. Indonesia needs to rethink language learning and teaching needs to include new pedagogical approaches compatible with the nature of human learning mechanisms (Bumela, 2020).

This pedagogical issue is interesting to be investigate, therefore the researcher choose to do research on digital learning resources that are support students' exploration in learning and provides multimodal material (story-based learning) which is folklores that full of local wisdom values of folklore and the visualization of each characters in story through multisensory which pedagogy involves the visualization, touch, movement and hearing to gain comprehensive understanding (Nahdiyah & Sudimantara, 2022). By activating sensory cortex, motor cortex as well as frontal cortex human brain can release chemicals such as cortisol which works on formulating attention and memory, oxytocin which works on formulating empathy and connected feeling and dopamine which works on regulating emotions (Baur, 2021). Then, with Reading for Emotion as a learning tool that activates brain compatibility and CEFR that provides students differentiated learning experiences (Lian, A.B., 2018).

1.3. Limitation and Focus of The Research

In this research, researchers focus more on developing digital reading resources, because literacy is the main foundation in understanding every knowledge, especially English learning. Therefore, researchers believe with digital reading resources students are able to develop not only their literacy skills but also their English level. Since Indonesian English proficiency index is constantly in the low position, in this research, the researcher focuses on:

1) Helping students to learn with differentiated learning based on their literacy level and their English level;
2) Helping in maximazing studens' multisensory aspects;
3) Helping students to build their meaning making, perception, empathy and deep understanding through story-based materials which are folklore that are full of local wisdom values.

1.4. Research Questions

1) What creative processes are used in the development of digital reading resources?
2) How is the use of digital reading resources integrated with Cirebonese Folklore in English language learning?
3) How do students perceive the use of digital reading resources in English language learning?
4) How does an English teacher perceive the use of digital reading resources in English language learning?

1.5. Aims of the Research

1) To investigate the creative processes of digital reading resources development.
2) To investigate the use of digital reading resources in English language learning.
3) To investigate students' perception of the use of digital reading resources in English language learning.
4) To investigate the English teacher's perception of the use of digital reading resources in English language learning.

1.6. Significances of the Research

1) Theoretically

In theory, the significance of this research is can be a reference or a new insight about new perspectives of the new innovation of English language learning and teaching, especially in the digital reading resources to help students on experiencing exploratory learning and give students opportunity to differentiated learning based on their literacy level CEFR principle of catering diversity of students' English proficiency levels aligns with differentiated learning (Sadhasivam etal., 2021).

2) Practically

In practice, this research can be applied as a digital reading resource which is compatible with multimodal learning in English language teaching and learning activities in the classroom in order to facilitate and support cyberlearning. Digital reading resources which integrated with traditional stories which contain local wisdoms values of folklore and reading for emotion so that can evoke students emotions and promote emphatic behavior. The center of human cognition andcommunication is in form of stories through influencing the chemistryof human brain like cortisol aids attention and memory, dopamine, controls emotions, oxytocine causes emphaty and human (Fletcher, 2021).

1.7. Theoretical Foundation

1.7.1 The Human Nature of Learning

The learning process must be experienced by every human being in their life, both in the context of educational environment and also in society. All human beings are born as natural learners (Smilkstein, 2003, 2011, in Zhao 2018). The human brain is designed to be able to learn from birth. Information gathered through hearing or sight is processed by the human brain (Azizah, 2023). The human brain is an extremely complex organ that plays an important role in the functioning human body. Smilkstein (2003, 2011) states that the human brain's fundamental learning process, innate logic, innate problem-solving ability, and natural pattern-seeking abilities make it a potent natural learning organ. These are natural resources that when educators integrate it into curriculum and pedagogy help students to learn.

Figure 1.3 The Brain Function: Left and Right Hemisphere

Source: Peterson, J.B., (2017).
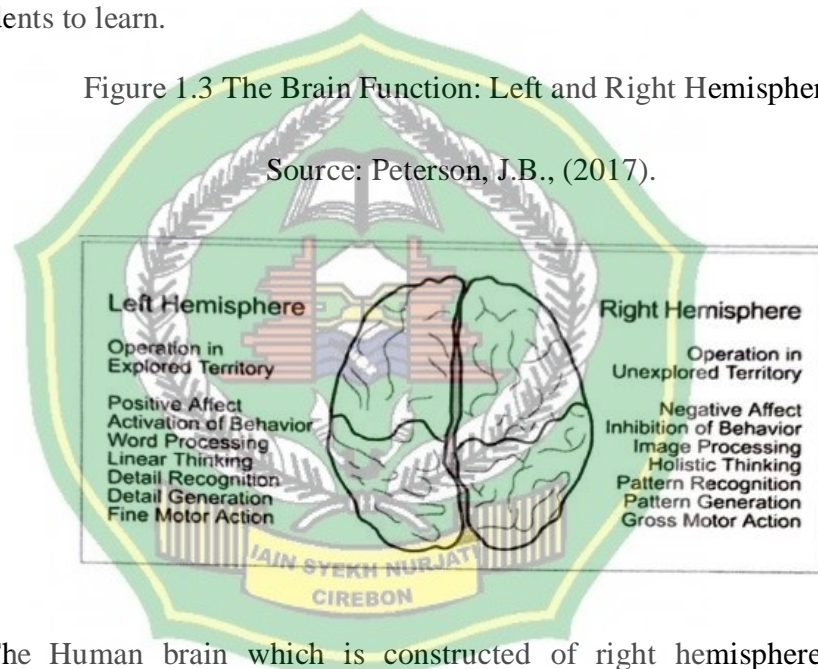
The Human brain which is constructed of right hemispheres and left hemispheres have certain functions. There are interaction and cooperation between the two hemispheres in the lateralization of cerebral functions, and each hemisphere has distinct functions of its own. The phrase "brain lateralization" describes how the left or right hemispheres regulate a certain function to a comparatively higher extent. It has been determined that analytical, linear, rule-based processing (e.g., language rules) requires the left hemisphere. However, it has been discovered that the right hemisphere plays a significant role in holistic, nonlinear, or parallel processing in addition to processing visual and spatial information (Mildner, 2008).

Language, math, arithmetic, detail inspection, reasoning, temporal and sequential analysis, and serial sensory input processing are all specific functions of the left hemisphere. Emotions, intuition, identifying faces and emotional facial expressions, artistic accomplishments, focus, identifying songs and other musical skills, visuospatial analysis, and parallel processing of sensory data are thought to be areas of specialization for the right hemisphere. The right hemisphere is emotive, creative, and cryptic, whereas the left hemisphere is logical and language-based (Gilchrist, 2019). This statement is supported by a study about left and right hemisphere of brain function by Peterson, (2017).

Within the same framework, language-related functions are specialized in the left hemisphere, whereas visuospatial functions are specialized in the right. Because it is supposedly specialized for holistic information processing, the left hemisphere is said to be more analytical and specialized for detailed functions when it comes to data processing, while the right hemisphere offers a more entire picture of the world. Learning from experience is given priority by the right hemisphere. It makes sense that information processing is viewed as more professional in those who choose "new stimuli" that are "treated" by the right hemisphere while routine or comfortable stimuli are processed by the left hemisphere (McGilchrist, 2019).

According to Peterson in Sudimantara (2021) there are five stages in the natural learning process of humans. When people encounter something that they already know, their right brain has the unique ability to record their immediate reaction. The first thing that happens when people encounter something unfamiliar or unusual is freezing. The brain's first reaction is to freeze, at which point it starts to speculate what the alien substance is about. The brain will investigate "foreign things" in greater detail during this stage of imagination, allowing it to differentiate the knowledge obtained from the earlier exploration stage. Finally, the human brain is capable of mastering and comprehending these "foreign things." As a result, the steps of freezing, imagining, exploring, distinguishing, and mastering are all part of the natural human learning process.

The study by Smilkstein (2003, 2011) about the natural human learning process supports this claim. Stage 1 of natural learning is motivated by responding to environmental stimuli; Stage 2 is practice, which involves trial and error; and stage 3 is skillfulness/creativity, which involves doing things one's own way, stage 4 is refinement/further progress, when one keeps evolving and becoming unique from others. Mastery is the final level.

The natural learning stage reveals that there appears to be a more diffuse organization of the right hemisphere than the left. In order to get learning activities, Peterson (2017) states that students must be involved in the right hemisphere. This will initiate a series of processes that include hypothesis construction, pattern development, evaluation of those patterns, and, ultimately, the formation and mastery of essential patterns. Thus, the final pattern is sent to the left hemisphere for usage when it is ready (Sudimantara, 2021). Because of this protracted process, the right hemisphere is responsible for long-term memory, and some sensory or motor impairments arising from localized lesions to the right hemisphere do not always worsen homotopic portions of the left hemisphere.

1.7.2. The Concept of Cyberlearning

The National Science Foundation (NSF) believed that Cyberlearning is an advanced learning in the 21st century era. In the book, building on this definition of the term, the Cyberlearning: Transforming Education program Fostering Learning in the Networked World: The Cyberlearning Opportunity and Challenge calls for cyberlearning research that will marry framework of how human learn and advance technologies with human learning theory in order to "cultivate a citizenry" better equipped to address contemporary societal needs. (Borgman, et al., 2008). Cyberlearning is a movement that focuses on how people learn in order to fulfill the revolutionary potential of learning technology (Roschelle, 2015). The phrase "cyberlearning" refers to an increasing national interest in controlling how technology and education interact, particularly when it comes to networking (Montfort, & Brown, 2015). Based on those definitions, the researcher can conclude that Cyberlearning is a learning transformation which marries what is understood about human learning combined with developments in technologies to create a citizenry better equipped to meet the demands of the modern society. The focus of Cyberlearning is in alignment with the necessity of a new pedagogical approach, as Bumela (2020), Indonesia must reconsider language teaching and learning incorporate new pedagogical strategies that are in line with the nature of human learning mechanisms. Smilkstein (2003, 2011) asserts that the human brain's intrinsic learning process, innate logic, innate problem-solving ability, and natural pattern-seeking abilities make it a potent natural learning organ.

Additionally, the Merdeka Curriculum stresses inquiry-based and discovery-based learning through an increased focus on exploratory learning. For those who are scientifically literate, inquiry-based learning is a vital and well-educated teaching approach (Kızılaslan et al., 2012). Therefore, combining the Merdeka curriculum with a new pedagogy which Cyberlearning, Indonesia can create a more dynamic educational system that prepares students for the challenges of the 21st century.

Cyberlearning also aligns with the framework for implementing teaching and learning English language that proposed by, by Lian, (2018), It put a particular emphasis on testing students' "operational histories," or ingrained ways of processing stimuli derived from their experiences in the outside world. The framework is specifically learner-centered, individualized, individual, and adaptive. Its goal is to assist students in cultivating the attitudes and methods necessary to address learning challenges independently and creatively. Based on the University of Washington (2022), Cyberlearning is the application of modern technology to develop innovative, successful learning opportunities that were previously unattainable or impractical. But for cyberlearning to function properly, it needs to meet certain requirements. These include: (1) Using scientific understanding of how people learn; (2) Making use of emerging technologies; (3) Creating transformative learning activities; (4) Involving educators and other practitioners; (5) Measuring deeper learning outcomes; and (6) Stressing continuous improvement.

1.7.3. The OECD Learning Framework

In transforming pedagogy, a conceptual learning framework is needed by educators to design the learning activities in order to achieve transformative goals. The Organization for Economic Cooperation and Development (OECD) issued a learning framework called "learning compass" which was adopted to emphasize the need for students to navigate on their own through unfamiliar context (OECD, 2019). In the learning compass there are crucial elements that should be the main concern in the education world. The elements that are contained in the learning compass are achieving well-being in 2023.

Figure 1.4. OECD Learning Compass 2030

OECD learning compass aims to achieve student agency, transformative competencies and co-agency. The student agency is a foundation for developing the competencies that students need to shape the future. Then, the term transformative competences refers to the types of knowledge, skills, attitude and values that students need to change society and shape a better future. Whereas the term co-agency or collaborative agency recognizes that students, parents, teachers and the community should work together to help students process which will later become a common goal to achieve sustainable development goals. (OECD, 2019). Most importantly, the existence of learning framework is to create education that empowers the young generation so they not only can adapt and respond to their rapidly changing world, but also actively participate in shaping a better future for themselves, society and for ASEAN region overall (ASEAN, 2012)

1.7.4 The Innovative Learning Approach

1.7.4.1 The Neuroscience of Stories

The human brain does not perceive reality directly. Rather, after their brains have processed data from many sensory inputs, people perceive things like sound or sight (Helyanti & Bumela, Ikawati, 2022). A more detailed categorization of learning has been achieved in the science of neuropsychology, particularly through the investigation of brain regions and neural connections implicated in particular processes requiring distinct forms of memory (in human or animal models). The human brain is closely related to stories. The stories have the power to integrate brain functions (Zak, 2013). The study of story sciences has revealed the inner workings of some stories that can boost creativity, resilience, empathy, and problem solving. These stories focus on how narrative functions in the brain to shape emotion, alter behavior, and sharpen thinking. Stories influence the way human's brains function and may even alter the chemistry of the brain, which in turn transforms behavior by making people experience what other people are feeling (Fletcher, 2021).

1.7.4.2. The Brain Parts in Stories Processing

Additionally, the narrative will stimulate the limbic system and neocortex, two areas of the brain that become more active when we hear or read a story. This claim is backed up by a psychologist who focuses on using stories as a medium for change, connection, and personal development. According to Peterson (2017), when processing a tale, the activation of the sensory cortex, motor cortex, and frontal cortex promotes engagement and a sense of closeness. The limbic system, according to Sridanti (2022), is the area of the brain in charge of controlling the physiological and emotional reactions of our bodies. The limbic system's physical makeup is in charge of processing and controlling our emotions. A collection of brain regions related to emotions, memory, and behavior is called the limbic system. Some of the limbic system's well-known functions include:

1) Supports in controlling emotions and sentiments.
2) The creation or storage of memories.
3) Take part in the educational process.

4) Participates in the fight-or-flight reaction, which is the body's stress response.

5) Regulates the autonomic nerve system, which is in charge of automatic body processes like heart rate, hunger, and thirst.

1.7.4.3. Chemicals and Stories Processing in Human Brain

Scientists reveal that telling stories has an impact on the brain and releases neurotransmitters like oxytocin, cortisol, and dopamine. According to Ramadhani (2022), the human brain naturally releases oxytocin, a neurotransmitter, when we hear or read a story. Oxytocin is a chemical compound that causes us to feel empathy, which is the capacity to feel connected to others and share feelings with them. Dopamine controls emotional reactions, oxytocin promotes empathy and a sense of connection to the narrative, while cortisol aids with attention and memory formulation (Peterson, 2017).. Therefore, if human beings can empathize with other people, human beings can respond to a situation in the most appropriate way, and then conditions like this should be the basis for making decisions, meaning making, and sense making, because through story minds formand examine our own truth and beliefs.

Figure 1.5. How Storytelling Affects The Brain

Source: Rutledge, (2021).

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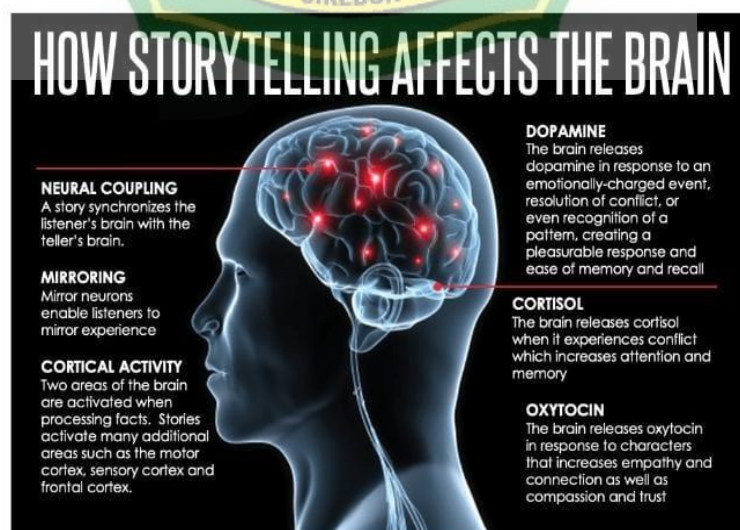
The neural coupling process, according to Peterson (2017), is the mechanism by which the neurons in the human brain fire in unison with the speaker when the person hears or reads a tale. Rutledge (2021) provided support for this claim, stating that the neural coupling process occurs when a tale synchronizes the brains of the teller and the listener. The speaker and listeners become more connected as a result of neural coupling processes. Neural coupling is the process by which the neurons in our brain fire in the same patterns as the storyteller when we see or hear a story. Human also refer to it as "mirroring." These activities take place in numerous brain regions and may result in a common contextual picture of the circumstance. When creating and processing stories, the frontal cortex, motor cortex, and sensory cortex are all activated. Dopamine, your brain's version of sugar, is incorporated into these networks as a result of your anticipation of the story's conclusion (Bauer, 2021).

1.7.4.4. Multisensory Approach

Multi-sensory approach is believed to be the ideal teaching approach for teaching and learning. In the 21st century education, the ideal pedagogy is one that fosters a comprehensive approach encompassing multi-sensory (Wastam et al., 2023). In order to gain a comprehensive understanding of language, the concept of multi-sensory pedagogy involves the utilization of visualization, touch, movement, and hearing (Nahdiyah, 2022). Therefore, this approach helps students to process the information by incorporating multiple senses.

A multi-sensory method uses different senses to engage children in learning, including sight, hearing, touch, and movement. A multisensory method facilitates students' development of strong associations with the content, increasing its accessibility and memorability (Williams, 2023). According to Baines (2008), students who learn through several senses tend to be more engaged with the content and retain it for longer. Williams (2023) provides support for the idea that involving many senses in the learning process improves pupil retention by expanding the number of brain pathways used to store and retrieve information.

1.7.4.5. The Importance of Heritage Education

The perception of heritage in society at large is shifting. It is now viewed as a tool for personal, social, economic, cultural, and environmental development, rather than as a way to uphold nationalistic values and the work of experts, researchers, and scholars (Cuenca, 2010). Numerous studies highlight the significance of preserving this legacy and the need to do so in order to maintain the historical continuity of culture. Preserving cultural history serves as a showcase for civilization and a way to improve ties between different social groups, leading to a greater appreciation for the living environment (Islamoglu, 2018, p. 1).

Along with the basic goals of citizenship and the Social and Experimental Sciences in particular, historical knowledge should be incorporated into the curriculum. It is not a goal unto itself. Key heritage referents can be used to promote critical thinking about the world around society, regardless of any ultimate goals regarding the conservation and appreciation of heritage, or the knowledge to be gained from studying such examples and the procedures for researching them, which should never be confused with the educational process's ultimate goals (Cuenca, 2010).

Teaching narrative through folklore or traditional stories is one of ways to implement heritage education. Folklore is a narrative that originates from a community and has grown there over time, unique to a particular region. Typically, folklore describes a place's founding or an event that occurred there. folklore's function in community education as a means of maintaining existing sociocultural norms in the society. Furthermore, moral and ethical lessons found in folklore serve as societal norms (Sukriyadi & Setiartin, 2022).

1.7.4.6. The Integration of Local Culture into ELT Classroom

Due to the close relationship between local culture and the adoption of English in the working world of Asia and the ASEAN region, as well as the growing amount of information and people moving around, there are new and significant pressures on English language and culture education (Lian & Sussex, 2018). Since there will be pressure on how people create their identities, deal with

diversity, and move forward as a group in the global society, it is critical that local culture be integrated into ELT classrooms (Lian & Sussex, 2018).

Hence, teachers should support students in using the English language in the ELT classroom, but they should not promote all Western cultures; instead, they should integrate the local culture. Next, under a teaching framework known as "operational histories" that was created by Lian & Sussex (2018). With the help of this framework, students are encouraged to concentrate on how they typically interpret stimuli based on their experiences in the real world.

One of ways to implement the local culture in English teaching and learning is by using traditional stories which are full of local wisdom values. The term "local wisdom" refers to knowledge that is specific to a community and can be defined as wise, insightful, established, and committed to by its citizens (Kartika, 2016). This indicates that local knowledge refers to honorable ideals that are passed down through the generations in a community regarding the relationship between humans and God, as well as relationships with nature and oneself. The foundation of cultural policies that can be implemented to regulate humanity in an intelligent manner and serve as a source of guidance in life is local wisdom.

1.7.4.7. Reading for Emotion

Lian (2017), proposed Reading for Emotion, a cutting-edge educational resource. By integrating emotions with the canonical text structure model, the Reading for Emotion model encourages students to engage in discussion about how texts evolve as a series of feelings (Lian et al., 2017). Developing self-investigation abilities through reading for emotion can help with both writing and reading (Bumela, 2020). By incorporating emotions into the paradigm of the six emotion structures—focus, disturbance, dialogue, development, resolution, and moral, students can investigate reading as a literacy process. Help for students needs to be more learning-focused than teaching-focused (Lian et al., 2017). The following are the stages:

1) Focus is the main notion of the writing. In a canonical text structure, focus normally appears first, but this isn't always the case.

2) Complication is an incident that induces an emotional change, is introduced during the Disturbance stage. It doesn't have to be bad; it could come as a surprise.

3) The Dialogue section presents different viewpoints on the Disturbance.

4) The Disturbance-related events are covered in the development stage.

5) Resolution is the process used to solve the issue is referred

6) Moral is a lesson that emphasizes the difference between the Disturbance and the Focus.

Tabel 1.3. Folklore with Reading for Emotion's Structure

Reading for Emotion	Text
Focus	Once upon a time, live a man namely Baridin. He lives in a small and nasty hut with his mother, namely Wangsih. Since his father is dead, Baridin becomes a breadwinner so he works as a farmer. Until one day, he meets the love of his life, Ratminah. She is the most beautiful woman and grew up in a wealthy family. This is how their story started.
Disturbance	One peaceful morning, an old man with a flushed face arrived. The old man was a rice field owner looking for Baridin because Baridin was supposed to work in his rice field that morning, but Baridin hadn't shown up. The man met Wangsih, who was sweeping the yard of her small hut. Shortly after seeing Wangsih, the man immediately asked her about Baridin's whereabouts and explained that Baridin had promised to work in his rice field that morning. Without hesitation, Wangsih woke up Baridin, who was still asleep, to go to work in the man's rice field right away.

Dialogue	In a different place, Ratminah was on her way home from the market. As she walked alone, many men flirted with her. "*Hey, pretty lady, where are you going*?" the men laughed. "*That's none of your business!*" Ratminah's face flushed with annoyance. "*Come on, let me give you a ride*" said one of the men. "*Shut up! I'll never go with ugly and poor men like you!*" Ratminah said as she continued walking. Meanwhile, Baridin arrived at the rice field and started working. In the midst of his work, he heard a woman's voice. "*Hey, what are you doing?*" Ratminah asked. Baridin looked towards the source of the voice, he was silent, not expecting that the one greeting him was a very beautiful woman. "*I'm working,*" Baridin said. "*Looking for snakes*?" Ratminah asked. "*No, miss. I'm plowing the rice field.*" "*Oh, I see. Well, good luck.*"
Development	Since his brief encounter with Ratminah, Baridin wanted to get to know her better. Baridin asked his mother to accompany him to meet Ratminah's parents. Wangsih, Baridin's mother, felt hesitant because Ratminah was the daughter of a wealthy and well-known family. However, Wangsih didn't want to lose her son, as Baridin threatened to commit suicide if his mother didn't accompany him to propose to Ratminah. Finally, Wangsih prepared some fruits as gifts and went to Ratminah's house. Wangsih and Baridin met Ratminah parents and then conveyed their purpose of visit. "*We've come here to propose to your daughter,*" Wangsih said. "*What nonsense is this? My beautiful daughter is everyone's dream. How dare poor people like you propose to my daughter?*" Ratminah's mother scolded. "*Get away from here!*" she added while throwing away the fruits Wangsih brought
Resolution	Since that day, Baridin has had a huge revenge towards Ratminah and her family. Until one day, he met his old friend named Gemblung. Baridin told Gemblung about what had just happened to him. Gemblung advised Baridin to learn magical arts, called "*kemat jaran goyang,*" to make Ratminah fall in love with him. Gemblung suggested that Baridin go into seclusion in a distant place and fast for 40 days for the magical arts to succeed. Blinded by revenge and heartache, Baridin finally followed Gemblung's advice to learn the magical arts.

Moral	In the end, the magical arts that Baridin learned successfully made Ratminah fall in love with him. However, instead of accepting Ratminah's feelings, Baridin rejected her. Baridin wanted Ratminah to feel the pain of rejection that he felt. Since then, Ratminah went insane because of her unrequited love. Not long after, Baridin passed away. When Ratminah heard the news, her condition worsened. Shortly after that, Ratminah also passed away. Legend has it that Baridin and Ratminah were buried side by side in a village in Cirebon.

1.7.4.8. CEFR

The Council of Europe released the Common European Framework of Reference (CEFR) in 2001. The purpose of the CEFR was to encourage critical analysis of various aspects of language teaching (Jones, 2023). The Common European system of Reference for Languages (CEFR) is a generally accepted system for identifying language proficiency levels for assessment and curriculum development (Lee, 2020).

According to Jones (2023), the CEFR offers a thorough, logical, and understandable explanation of language proficiency in the context of use. The CEFR outlines six levels of ability for foreign languages, including English: Advanced and ability English (User Proficiency), Intermediate and Upper Intermediate (Independent User), and Beginner and Elementary English (Basic User) (Fitria, 2023). There are six English language proficiency levels in the CEFR:

Table 1.4. CEFR Level and Description

No	Level	Description
1.	A1	Beginner
2.	A2	Elementary
3.	B1	Intermediate
4.	B2	Upper Intermediate
5.	C1	Advance
6.	C2	Proficient

From those definitions, researcher concludes that CEFR is an international standardization for defining language proficiency level which set language proficiency into six levels, including English: Beginner and Elementary English (Basic User), Intermediate and Upper Intermediate (Independent User), and Advanced and Proficiency English (User Proficiency), which contributing in planning curriculum (learning goals, activities and assessments), reflecting and supporting innovation in the way languages are taught in class.

The folklore that the researcher integrates is compatible with CEFR, since stories are suitable with CEFR and reading for emotion. In CEFR-based, students need to be tested through a diagnostic test to find out their English level. Material which is relevant with students' experience gives a better result. As shown by empirical findings derived from neuroscience, students tend to arrange information based more on their personal experiences than on their teacher's experiences (Lian, 2018).

1.8. Previous Research

The previous research conducted by Sudimantara in 2021 was entitled Transformative learning and student agency in academic writing in undergraduate English Language Teacher Education degree programs in Indonesia. This research aims to develop a new pedagogy (multisensorial load reduction strategies) that activates the nonverbal components of language (rhythm, intonation, movement, emotion, and aesthetics), which are first processed in the right hemisphere. Three methods are used in this study: verbal, emotional reading, and aesthetic. These three resources are used to create collaborative learning environments where multimodal learning is observed. The research's conclusions show that the experimental group has a sizable edge over the control group. From this research, it can be seen that in the 21st century there is a need for pedagogy that can encourage students' critical thinking and writing skills, not a teacher-centered learning.

Next, the earlier study titled "Developing Digital Literacy Resources for Middle School Students: A Highlight on Literacy Level" by Helyanti (2022) is mentioned. This study makes use of an R&D research approach, and its findings show that the new digital literacy resource is appropriate for use with

the current curriculum. Next, there is Puspita's earlier study, "Building Criticality: Using Narrative Text as A Source of Reflective Teaching and Learning," which was published in 2022. This study makes use of an R&D design, and its findings show that this new learning module can be used in the current curriculum with a few minor tweaks that need to be made in the future.

Then there is the earlier study, Digitalizing A CEFR-Based Cirebonese Folklore for English Learning Purposes at Middle School in Cirebon, which was carried out by Sari, W. (2023). The findings of this study, which employed an R&D design, suggest that educators are prepared to adopt a new pedagogical strategy. Educators place emphasis on improving pedagogy than digitizing course materials. Furthermore, the vast majority of students expressed enthusiasm for the modifications. Not to be neglected is Julaiha's earlier study, "Developing an Assessment Rubric for Multi-sensorial Teaching and Learning in Junior High School," which was completed in 2022. This study employs an R&D design, and its findings demonstrate the applicability of the novel evaluation technique in spite of its challenging assessment methods.

9. Frame of Though

Figure 1.6. Frame of Thought
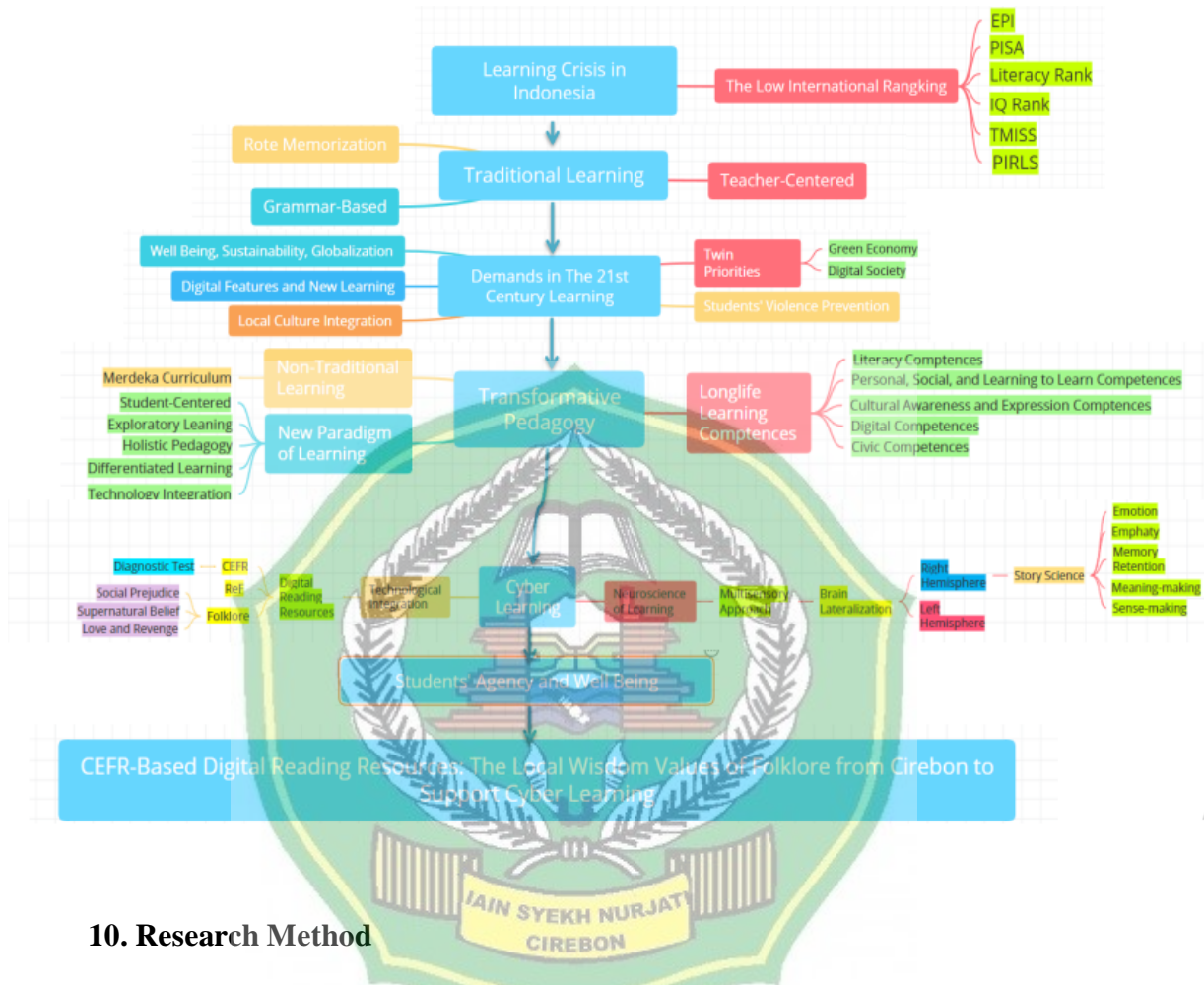
10. Research Method

### 10.1 Research Design and Steps of The Research

This study conducts a qualitative approach and Research and Development (R&D) design. Development research is a research method used to produce specific products and test the effectiveness of the product. This study aims to develop English teaching media, which use digital English reading resources as local wisdom values of folklore from Cirebon as the materials. The English language teaching media was developed using a development procedure from the development model proposed by Plom (1997) as cited in Gustiani (2019).

The steps are preliminary investigation, designing, realization/construction, implementation, Evaluation. The model, then, was

considered more flexible by some experts because each step could be adjusted with the context of the research and the characteristics of the researchers.

1) Investigation: the preliminary investigation step which carried out by the researcher through or analyzing the needs and the gaps between the learning needs and current learning, the reseracher conduct the need analysis through gathering and analyzing ASEAN educational forum and journals about the needs of digital English reading resources, defining the problem, and brainstorming the solution.

2) Designing: this step aims to design the solution of the gaps or the problems, in designing the model based on the results of working plans which will be realized in the realization step.

3) Realization/Construction: the researcher conducted this step through collecting, rewriting, translating and constructing the Cireboneser folklore as the material and producing learning activities. Then there is validation process, the validators use validity instruments that have been created in planning. The validation is carried out to assess the product developed, in the form of content and other parts of teaching materials as needed in the field.

4) Testing/Implementation: after constructing the product prototype the next step is testing. The developed model is tested to have the data for the evaluation, then the data are treated as feedback for model revision.

5) Evaluation: after obtaining the feedback from English teacher and students, the researcher conducted evaluation or revision of the product prototype1 become the product prototype 2.

Figure 1.7. R&D Design: Plomp Model

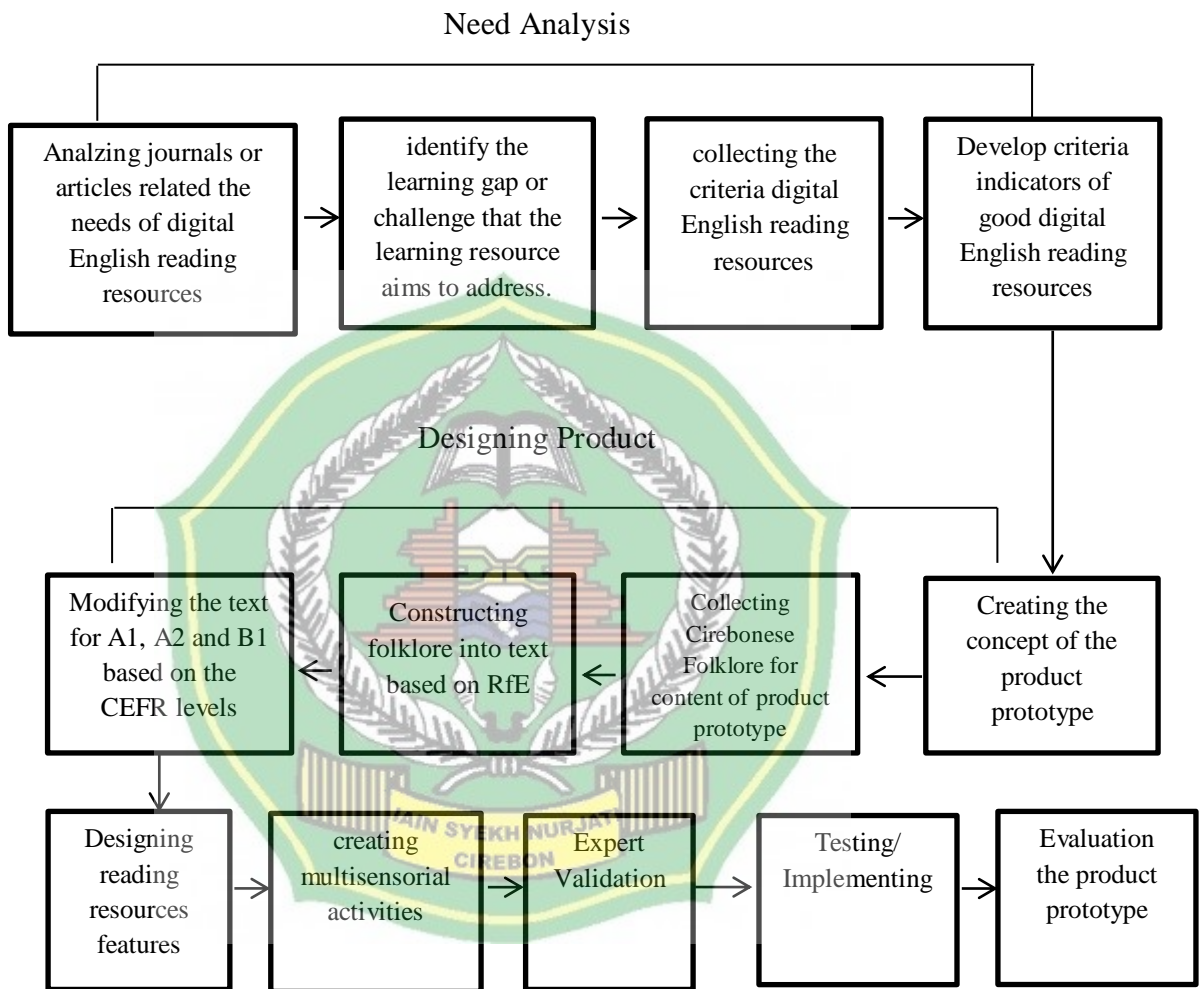
Generic model for educational design
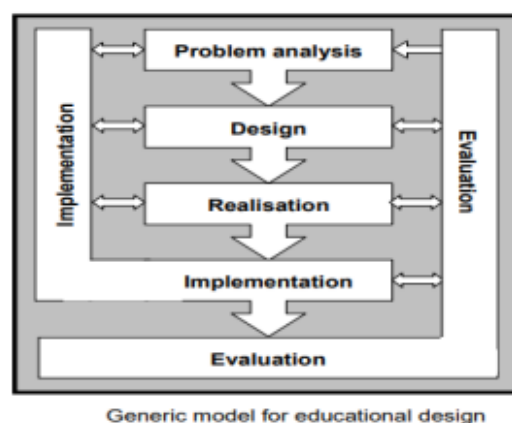
As per the OECD (2015), research and development (R&D) research design generally describes the methodical procedure of generating novel insights, products, or procedures via scientific and technological actions. The Frascati Manual is a standard and set of guidelines for R&D data collection in both OECD member countries and other countries. It is used in study design for R&D projects. The Frascati Manual, which is essentially a technical document, is the cornerstone of OECD attempts to improve knowledge of the role that science, technology, and innovation play or activities when examining a country's research and innovation system. Therefore, the provision of globally recognized definitions and rules for the measurement and classification of research and development (R&D) activities is the fundamental function of the Fracati Manual in R&D research design. R&D is always aimed at new findings, based on original concepts (interpretations) or hypotheses. In planning R&D activities, there are five core criteria that must be satisfied, which are novel, creative, uncertain, systematic and transferable and/or reproducible.

The definition of novelty, as defined by the Cambridge Dictionary, is something novel or intriguing that has never been encountered before; this definition aligns with the digital product that the researcher created. Through science, technology, and innovation, the researcher integrates digital reading resources with local wisdom values to gain a knowledge of emotional intelligence and cultural awareness. Zhu et al., (2017), define creativity as the capacity to produce original, practical ideas as well as the ability to discern which ideas are acceptable, practical, and meaningful. In order to create visualizations and educational tools like Reading for Emotion, researchers incorporate the creative process into the design and development of the prototype product.

According to Sharma et al. (2020), the word "uncertain" describes whether or not the majority of risk can be predicted and quantified with varied degrees of possibility. Students can practice the various stages of emotion shifting in the product. According to Forte et al. (2019), being systematic in literature means analyzing, comprehending, investigating,

and evaluating. In order to provide the reader with a positive reading experience, the product that the researchers designed also incorporates systematic. The product that the researchers create can also be replicated for future advancements.

Figure 1.8. Research Stages

Need Analysis

| Analzing journals or articles related the needs of digital English reading resources | → | identify the learning gap or challenge that the learning resource aims to address. | → | collecting the criteria digital English reading resources | → | Develop criteria indicators of good digital English reading resources |

Designing Product

| Modifying the text for A1, A2 and B1 based on the CEFR levels | ← | Constructing folklore into text based on RfE | ← | Collecting Cirebonese Folklore for content of product prototype | ← | Creating the concept of the product prototype |

| Designing reading resources features | → | creating multisensorial activities | → | Expert Validation | → | Testing/ Implementing | → | Evaluation the product prototype |

10. 2. Source and Type of Data

10.2.1. Primary Data Source

Research using primary data is conducted directly with data collectors as opposed to using pre-existing data that has been gathered by another party. Stated differently, primary data research refers to any form of data study that is carried out by researchers independently (George, 2023). Primary data collection is gathering original information from the source or by speaking with respondents face-to-face. The primary data collected from the respondents which are students

and English teachers through observation and interviews in real time settings. Data primary source of this research are the researcher, students, teacher and the prototype of digital reading resources.

10.2.2. Secondary Data Source

Secondary data collection is the process of using previously collected data but for a different reason than intended that has already been obtained by another party. Research with secondary data involves using information that has already been gathered by another party. Case studies, literature reviews, and content analyses are examples of secondary data research types (George, 2023). The secondary data collected from theories/concepts of the previous studies such as books, journals, articles, and other published materials that contain of relevant data.

10.3. Data Collection Techniques and Instruments

1) Documentation

Documentation is one of the data collection techniques in qualitative research. Evaluating and interpreting electronic and physical documents, understanding their meaning and further developing the information provided (Mackienson, Shlonsky & Connolly, 2019).

Researcher conducts documentation with an instructional teaching module or *modul ajar* and Cirebonese folklore as the documentation objects. The module is taken from one of the Senior High Schools in Cirebon, whereas Cirebonese folklore is taken from multiple sources on the internet. The data from instructional teaching module or *modul ajar* documentation from an English teacher in one of vocational high schools in Cirebon is provided in Chapter 2 as the evidence of how English learning in Vocational High School is conducted. The data of Cirebonese folklore: Baridin and Ratminah documentation was collected from website detik.com and Liputan6.com and from youtube channel Riyanti UFC Sragen and Batur Turu. The documentation of Cirebonese folklore: Baridin and Ratminah is used for the main material of digital English reading resources through analyzing and modifying into 6 CEFR levels. To see the instructional teaching module or *modul ajar see Appendix 1.*

2) Observation

The researcher conducts the classroom observation to get data for research question 2, the implementation or the use of digital English reading resources prototype in the classroom. The result of classroom observation is provided in Chapter 3. Classroom observation is a method of collecting data by observing the real application or implementation of digital English reading resources in the English learning process. In observation, the researcher observes and records behaviors, actions or events in their manual setting. One of the main methods used by qualitative researchers to gather data for a long time has been observation. It is the process of documenting an event for scientific reasons while it is occurring in the field using the observer's five senses and frequently an instrument (Angrosino, 2007, Creswell, 2016). The researcher uses a field note of the observation classroom to describe the implementation process. Field notes give detailed accounts of what the researcher sees and hears in the observation environment. They attempt to capture as much detail as possible while minimizing subjective remarks (Lodico et al., 2010). To see the field note of classroom observation *see Appendix 2*.

3) Questionnaire

The researcher conducts a questionnaire using Google form which is given to 34 students in the classroom to answer research question 3. A questionnaire refers to a document which lists a set of questions that researchers need to answer the problems under investigation (Ramli 2020, Azizah, 2023). The purpose of questionnaire data collection technique is to obtain valid and reliable information to facilitate research. The questionnaire is given after the learning activities using the prototype of digital English resources are completed. The questionnaire consists of 20 semi close-ended questions, written in Indonesian language. To see the result of questionnaire *see Appendix 4*

4) Interview

An interview is a qualitative research method that relies on asking questions in order to collect data (George, 2022). Interview is a way for participants to engage and share their opinions. In an interview, respondents or participants can discuss their own perceptions and interpretations in relation to specific situations (Azizah, 2023). Interview is a great research tool that allows the researcher to gather rich information and draw more detailed conclusions (George, 2023). In this research, the researcher interviews students and English teachers. The students' interview consists of 5 questions and the teacher's interview consists of 20 questions to know how students and teachers perceive the use of a prototype of digital English reading Reading resources. To see students and teacher's interview transcripts *see Appendix 3 and 5*.

10. 4. Data Analysis Technique

The act of methodically going through and organizing field notes, interview transcripts, and other information researchers gather to deepen your understanding of the subject in order may share what you have learned with others is known as data analysis (Sugiyono, 2018).. In this research, the researcher uses thematic analysis to organize and analyze the complex data sets. Thematic analysis involved "identifying, analyzing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 78 in Nashruddin, 2020, p. 88):

a) Reading and rereading the data, taking notes on preliminary concepts, and transcribing data (observations from classrooms and interviews).

b) Creating initial codes: Gathering information pertinent to each code by methodically coding noteworthy aspects of the data throughout the whole data set.

c) Theme searching: grouping codes into prospective themes and compiling all information pertinent to each possible theme.

d) Examining themes: Creating a thematic "map" of the analysis by determining whether the themes make sense in respect to the coded extracts and the complete data set.

e) Naming themes: Constant analysis to hone the details of every topic and the narrative the analysis conveys as a whole, producing precise names and definitions for every subject.

f) Reporting themes: final analysis of selected extracts, relating back of the analysis to the research question and literature

1.11 Research Timeline

Table 1.4. Research Timeline

No	Activities	November				December				January				Febbru-ary				March				April			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Proposal Development	█	█	█	█	█	█																		
2	Proposal Revision							█	█	█	█														
3	Collecting Data											█	█	█	█										
4	Analyzing Data																█								
5	Answering RQ 1 & 2																	█	█	█					
6	Answering RQ 3&4																				█	█	█	█	
7	Finishing Thesis Writing																								█

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