CHAPTER I

INTRODUCTION

This chapter emphasizes the research background, problem identification, limitation of the problem, research questions, purposes of the research, significance of the research, and definition of key terms. The introduction to the research is described as follows.

1.1 Research Background

The changing of Indonesian curriculum into *Kurikulum Merdeka* is a way to improve education quality. *Kurikulum Merdeka* consists of *Merdeka Belajar* and *Kampus Merdeka* (MBKM). According to (Indarta et al., 2022). *Merdeka Belajar* develops a student-centered learning culture by meeting individual needs through life-based, ability-based, and transdisciplinary approaches. Teachers can interpret the curriculum, ensuring flexibility in objectives, methods, materials, and assessment. This shift empowers both teachers and students, moving away from the traditional teacher-centered model. *Kurikulum Merdeka* emphasizes three main characteristics, namely: improvement of skills and character, focusing on essential materials, and flexible learning activities. The learning process is directed to the implementation of innovative strategies, like problem-based learning (PBL), project-based learning, and differentiated instruction (Hasibuan & Kardena, 2024)

As a learning strategy, problem-based learning directs the students to construct knowledge through various problems. According to (Ulger, 2018), problem-based learning has a positive effect on improving problem-solving, critical thinking, and creativity. It directs the students to think productively through various

Problem-solving process. In addition, (Maulana, 2021; Tanna et al., 2022) argues that implementing problem-based learning is one way to give learning in a real-life context. Here, the students are given problems that are based on a real context to stimulate their thinking. The creation of real life in education gives more opportunities to practice what they need in reality (Susilawati et al., 2023). During PBL, the students must actively construct knowledge by analyzing the problems. The ways to solve the problems show how deep the students' understanding is.

Implementing Problem-Based Learning (PBL) creates a dynamic and engaging classroom atmosphere, encouraging students to actively participate in their learning. PBL encourages independent learning by engaging students in problem-solving tasks that require independent investigation (Walker & Leary, 2009). Through this approach, students identify their learning needs, gather relevant information, and develop solutions, thus promoting deeper understanding. In addition, PBL improves communication skills as students collaborate, discuss ideas, and connect their learning to real-world contexts (Tanna et al., 2022). Moreover, case study-based learning is the key aspect of PBL. It enhances critical thinking ability, which is a fundamental skill in 21st-century education (Widiandari & Redhana, 2021). Similarly, Lapek and Murphy (2018) emphasized that PBL fosters critical thinking, problem solving, creativity, communication, and collaboration, all of which are essential for success in an ever-evolving world. Without these skills, individuals may find it difficult to adapt. Therefore, integrating PBL across subjects is essential to ensure students develop the competencies needed to face future challenges.

Over time, Problem-Based Learning (PBL) has expanded beyond science education and is now widely applied in English as a Foreign Language (EFL) teaching. PBL serves as an effective alternative teaching strategy to improve students' English competence, especially in speaking skills. Research by Chalak and Kassaian (2021) found that the implementation of PBL significantly improved undergraduate EFL students' speaking proficiency and confidence. By engaging in active learning, students became more motivated and experienced significant improvements in their English proficiency. In addition, PBL shifts the teacher's role from a primary source of information to a facilitator, allowing students to construct their own knowledge through real-world problem-solving activities (Nurulaisyah, Probosari, & Antrakusuma, 2024). In an EFL environment, PBL encourages communication, collaboration, and critical thinking, improving language proficiency and teamwork (Hartiyaningsih, Mulyaningrum, & Setiyono, 2024). In addition, PBL aligns with modern educational practices by emphasizing continuous evaluation and reflection, ensuring that students analyze problems, work collaboratively on solutions, and draw meaningful conclusions from their learning experiences (Nurulaisyah, Probosari, & Antrakusuma, 2024).

When Problem-Based Learning (PBL) is implemented, students' teamwork skills are strengthened as they engage in collaborative problem-solving tasks (Shofiyah et al., (2022). In PBL, students are often organized into groups, allowing them to share ideas and discuss various problems presented by the teacher. This group-based approach fosters active knowledge sharing, enhances communication, and encourages deeper learning (Takko et al., 2020). According to Yu et al. (2021), PBL enhances students' critical thinking skills by requiring them to analyze

information, conduct research, and collaboratively develop solutions. Moreover, PBL provides students with opportunities to engage in cooperative learning, which enables them to discuss various problems and find effective solutions together (Dolmans et al., 2019). Learning becomes more engaging and meaningful when students work alongside their peers, as collaboration fosters motivation and deeper understanding (Suwastini et al., 2021). Although PBL is a complex process that requires effort and adaptation, it creates an interesting and challenging learning experience when students work together to solve real-world problems (Hmelo-Silver, 2019).

PBL is relevant to the process of teaching language as an ongoing process. The students do not master language competency in one time meeting, but it is a process of how they construct knowledge (Herawati & Wilujeng, 2023). By active involvement during the learning process of PBL, the students can learn step by step. They do not master the language just in one meeting, but through the process, they do. Maulana et al (2020) discovered that the use of PBL in learning is considered more effective and efficient in knowledge construction. Furthermore, the implementation of PBL also has a positive effect on the students' social skills. They become more open to friends' ideas and learn from their friends. Halpern and Butler (2020) discovered that by learning in a PBL situation continuously, students develop their critical thinking skills. Learning should be designed step by step, with the students' growth taken into account.

Before the integration of technology, the Problem-Based Learning (PBL) method in traditional settings focused on creating a collaborative and interactive learning environment. In the classroom, the teachers were organized into small

groups, typically facilitated by experienced tutors who guided discussions, posed probing questions, and helped students navigate the complexities of real-world scenarios.

Problem-Based Learning (PBL) methods, before technology integration, were in traditional settings that focused on creating collaborative and interactive learning environments (Ali, 2019). In the classroom, teachers organize students into small groups, usually facilitated by experienced tutors who guide discussions, ask investigative questions, and help students navigate the complexities of real-world scenarios. In addition to the use of problem-based learning, the development of information technology must also be considered to support the quality of education. Clyde and Delohery (2005) asserts that technology makes teachers' jobs easier, helps students remember lessons better, and allows for remote learning. By using technology in education, the teaching and learning process becomes a more varied learning activity to increase student participation.

Moreover, Saad & Sankaran (2020) state that technology, especially information and communication technology, supports the learning process because there are many features that can facilitate the learning process, making it more interactive. For example, visual features help make learning more contextual, so students can gain a better understanding than just reading text or looking at pictures in books. In addition, integrating technologies such as videos, websites, and virtual simulations has a positive impact on students' motivation to learn and think critically (Merta et al., 2023). The more media used, the more interested students are in learning, which can make them study hard.

Besides the use of problem-based learning, the development of information technology should also be considered to support education quality. Clyde and Delohery (2005) states that technology makes teachers' work easier, helps students remember lessons better, and allows learning from a distance. By using technology in education, the teaching and learning process becomes a more varied learning activity to enhance student participation. It is also supported by Saad & Sankaran, (2020) who state that technology, especially information and communication technology, supports the learning process because there are many features of it that can facilitate the learning process, making it more interactive. For example, visual features help to make learning more contextual, so the students can get a better understanding than just reading text or seeing pictures in the book. Merta et al. (2023) also state that integrating technology like video, website, and virtual simulation positively affects students' learning motivation and critical thinking. The more the media is used, the more interested the students become in learning, which can make them study hard.

Integrating technology into education helps increase efficiency. According to Hasan et al. (2024) traditional classrooms fail to foster a good learning environment, faster evaluations, and more engagement, but technology can cover all of them. The use of multimedia can create more interesting and real learning materials. Wekerle et al. (2022)discovered that the students get engaged in learning well when technology is implemented. Student learning can become more dynamic, which makes them learn in more varied contexts. Moreover, the use of technology can increase the students' learning motivation. They are interested when technology like video or other audio-visual media is used in learning. It is in line with (\Mufron

et al. (2024) research that states technology can greatly boost students' interest and engagement in learning. For example, when showing an example of conversation in a restaurant with video, the students can find it more interesting than just a conversation in a book. The students can also learn about expression and body language from the video. It is not acquired by the students in the book.

The Indonesian government has directed the use of technology in the education context, especially in the teaching and learning process. Technology should be used effectively as teaching media to support the learning process and achieve teaching goals. Teaching media should be like a bridge that helps the students' learning (Utami et al., 2023). By using media, several advantages can be acquired: interactive learning, motivating students' learning, enlarging students' creativity, and more real or contextual and independent learning (Gumbira et al., 2025). In the process of language learning, factors can influence the students' success in learning. In this era, technology in education should be more advanced, such as using the internet and smartphones. They can be helpful in helping the students explore learning material (Untari & Ni Nyoman Padmadewi, 2023).

According to Liu et al., (2021) teachers and students play significant roles in successfully implementing problem-based learning integrated with technology. Teachers should have good knowledge of PBL and technology for education. Meanwhile, the students should be ready for different learning situations using technology. Readiness means how effectively the teachers believe they are prepared for the changes and how well they think their students are ready (Dalton & Gottlieb, 2003). The readiness of the students involves technical readiness, when they should be active in analyzing various problems and making a report of their

analysis. In the past, PBL and internet technology may not have been familiar to students, so when they are applied, there will be anxiety that may influence their learning (Ilwandri et al., 2023). The gap between the previous and current learning situations causes it. When the situation is totally new, communication among teachers and students should be enhanced so the students can be ready for the new learning situation (Khambayat, 2015). The readiness of the students should be taken into account. According to Dalton & Gottlieb (2017), readiness can be divided into effort, willingness, and capacity.

However, technology integration in the educational learning process has not been achieved yet. Lumban Gaol & Simanjuntak (2023) discovered that technology is applied in only 37,5%, categorized as average. Two factors influence it: internet access to school and the age of the teachers. Furthermore, (Talandron-Felipe, 2019) also discovered that internet access becomes the main factor that prevents them from applying technology in learning. If they have to make learning media themselves, it is time-consuming. Lastly, Apuke & Iyendo, (2018) discovered that technology can motivate teachers to apply technology, but the limitations of digital knowledge and internet access prevent them from using technology in learning.

Furthermore, an observation was done in SMAN 1 Singaraja in the academic year 2024/2025. The observation was done for two weeks in August 2024. From the observation, it was known that the school has implemented *Kurikulum Merdeka*. English teachers have used innovative teaching strategies, such as problem-based learning and project-based learning. To support the teaching and learning process, PowerPoint was mainly used to explain the learning topic. They prepare for their perfection to do *Kurikulum Merdeka*. Further observation was done on the class's

teaching and learning process, in which PBL integrated with technology was implemented first. It seemed that the students were not ready yet during the teaching and learning process. They did not know what they do with the problems, how to analyze and give a solution, or how to make a report. The students were also not ready to work in a group. It was found that only 1-2 group members participated during working. Instead, sharing knowledge in a group was needed for the success of PBL. Fortunately, the use of technology like PowerPoint and video keeps them focused on learning.

Furthermore, several studies are about implementing problem-based learning with technology integration in Indonesia. However, those studies focus on the teachers' perception of PBL with technology and their readiness to do it. There is less research about the students' readiness during the implementation of PBL with technology and the technology integration in problem-based learning implemented by the English teachers. This research investigates the technology integration in PBL and the students' readiness when PBL is integrated with technology in SMAN 1 Singaraja.

1.2 Problem Identification

The main issue in the latest Indonesian curriculum is providing a quality learning process. Teachers are expected to be innovative in designing teaching and learning processes. Here, the teachers are directed to implement problem-based learning and technology. However, based on the preliminary observation in SMAN 1 Singaraja, several problems have been identified.

1. Not all Students fully implement problem-based learning and technology in their classrooms. They are in the process of learning and selecting the best teaching method and technology.
2. The students are not ready to apply problem-based learning, integrating with technology.
3. Not all students master education technology or various applications to be applied in the learning process.
4. The students need to adapt when Kurikulum Merdeka is implemented because the teaching methods require them to be active in solving various problems.
5. Students cannot work in teams during the teaching and learning process. This can be seen from the group members who do not participate during the discussion.

1.3 Limitation of the Problem

Based on the problem identification, the problems are limited as follows.

1. The implementation of problem-based learning integrated with technology by English teachers at SMA Negeri 1 Singaraja.

2. The students' readiness during the implementation of problem-based learning integrated with technology in SMA Negeri 1 Singaraja.

1.4 Research Questions

Based on the rationale, the research questions can be formulated as follows.

1. How is technology integration in problem-based learning implemented by the English teacher at SMA Negeri 1 Singaraja?
2. How is the students' readiness during the implementation of problem-based learning integrated with technology in SMA Negeri 1 Singaraja?

1.5 Research Objectives

The research objectives can be formulated based on the research questions.

1. To investigate the technology integration in problem-based learning implemented by the SMA Negeri 1 Singaraja English teacher.
2. To investigate students' readiness to implement problem-based learning integrated with SMA Negeri 1 Singaraja technology.

1.6 Research Significance

The significance of this research can be seen from two points of view: theoretical and practical significance. Theoretically, this research enriches references about the knowledge in education, especially relating to TEFL, technology, and problem-based learning. It can be a source of knowledge for educators to improve their learning quality. Furthermore, this research can guide education stakeholders to know the actual learning quality of English teachers at the senior high school level.

Practically, this research has significance for three parties, namely: English teachers, school headmasters, and other researchers. For English teachers, this research is useful: as a reflection on their learning quality, as guidance in creating better learning situations in the classroom, and as motivation for teachers to use more varied technology in EFL. For the school principals, this research can be a source of information about the EFL quality done by the teacher, hence the school principal can do innovative ways to create learning quality by integrating technology in EFL. For other researchers, it can be used as a foundation for further research.

1.7 Definition of Key Terms

To reduce misunderstanding, the definition of key terms presented as follows:

1. Theoretical Definition

a. Problem-Based Learning (PBL)

Problem-based learning (PBL) is an instructional method that uses complex, real-world problems as a context for students to train their problem-solving skills, critical thinking, and self-directed learning. This statement was supported by Ugles (2018), who stated that PBL has a positive effect on improving problem-solving, critical thinking, and creativity. It encourages students to think productively through various problem-solving processes and to engage actively in constructing knowledge by analyzing and solving real-life issues (Maulana, 2021; Tanna et al., 2022).

b. Technology Integration in Problem-Based Learning

Technology integration in PBL involves using digital tools and resources to enhance the learning experience and support the problem-solving process. To add more, technology can simplify complex problems, facilitate independent exploration, and provide access to diverse educational resources (Gershenson, 2014). It also supports collaboration and communication among students. Making the learning process more interactive and engaging (Mubaroq & Ilham, 2023).

c. Student Readiness in PBL Implementation

Student Readiness in PBL implementation refers to the student's preparedness to engage and actively interact in the learning process, which involves problem-based learning activities. This includes their effort, willingness, and capacity to learn new skills and adapt to new learning environments (Dalton & Gottlieb, 2003).

Readiness involves being mentally and physically prepared to respond to learning challenges and effectively participate in learning.

d. Communication Skills

Communication skill in the context of PBL is the ability of students to effectively share ideas, collaborate with peers, and articulate their thoughts during problem-solving activities. Effective communication is essential for teamwork and the successful implementation of PBL, as it allows students to discuss ideas, provide feedback, and work together to find solutions (Tanna et al., 2022; Yu et al., 2021).

2. Operational Definition

a. Problem-Based Learning (PBL)

In this study, problem-based learning (PBL) is defined as a teaching method where students are faced with real-world problems and are required to work in groups to find solutions. The focus of this method is on student-centered learning. The teacher act as a facilitator rather than a primary source of information.

b. Technology Integration in Problem-Based Learning

Technology integration in PBL means the technology used in the learning process, such as videos, websites, and virtual simulations, to support and enhance the problem-solving process. This includes using technology to present problems, facilitate research, and enable student collaboration.

c. Student Readiness in PBL Implementation

Students' readiness in PBL is defined as preparing students to engage in problem-based learning activities. This includes their effort, willingness, and capacity to participate in and benefit from PBL. Readiness is measured based on

students' ability to adapt to new learning environments, motivation to learn, and ability to work collaboratively.

d. Communication Skill

Communication skills are defined as the ability of students to effectively exchange information, ideas, and feedback with their peers and teachers during PBL activities. This includes verbal and non-verbal communication, active listening, and the ability to articulate thoughts clearly and concisely.