

CHAPTER I

INTRODUCTION

In this chapter will explain about an introduction to introduce the topic and attract the reader's interest. This section serves to explain background study, definition of key term, research questions, research objectives, research significance.

A. Research Background

The use of technology in language learning environments not only supports the learning process, but also enhances it (Izza, 2024). In this era of digital revolution, the world of education can be said to be undergoing a much more progressive transformation, one of which is through the application of technology called QR code. Smartphones and QR code scanner applications are increasingly accessible, and have great potential in their application in the learning process. In relation to English language learning, QR codes are a very beneficial potential. QR codes also allow students to have choices when learning (Tan & Chee, 2021) and improve their general knowledge (Hirju & Georgescu, 2023).

The use of QR code integration in English textbooks is also an innovative step that is in line with the spirit of the Qur'an, especially surah Al-Kahf verses 109 :

قُلْ لَوْ كُنِيَ الْبَحْرُ مِثْقَالَ الْكَلْبِ رَبِّي لَعَدَّ الْبَحْرُ قَبْلَ أَيِّ تَقْدُّ كَلْبٍ رَبِّي وَلَوْ جُنُبٌ مُّوْتَقِلَةٍ هَدَدٌ

This verse shows that Allah's knowledge is unlimited, and humans can only access part of it through learning efforts and creating tools to facilitate learning. In the process of developing Merdeka Curriculum English textbooks, the use of QR codes is a concrete educational innovation that helps expand learning channels to access learning materials that were previously limited to written text. QR codes give students access to videos, audio, and interactive exercises that complement their learning.

In 2021-2022, the Indonesian government introduced the Merdeka Curriculum “independent” to facilitate learning recovery during the pandemic (Wardani, 2023). Improving the quality of education has been an important goal of education reform in Indonesia, as seen from the implementation of Independent Curriculum (Putri, 2024). The Independent Curriculum makes student learning more meaningful and enjoyable (Fiandini, 2024). The vision of the Independent

Curriculum which states more flexible and relevant learning is also very suitable for technological innovations such as QR codes. Therefore, the use of QR codes in English learning books may be a concrete implementation of innovation from the Independent Curriculum.

The integration of QR codes in English learning books not only provides easy access for learners to available resources but can also enable the transformation of teaching strategies and enhance in class interactions (Izza, 2024). Interactive QR codes increase student engagement in the education system, making students no longer play the role of passive recipients of information, but also heroes of information hunters (Husaeni, 2023). Some other uses of QR codes also include the facilitation of learner-centered learning, allowing students to set their own pace of learning and select materials that are most important to their interests and needs. In practice, QR codes provide teachers with more opportunities to incorporate project-based learning, cooperation, and customization of learners' different needs, as actively supported by Independent Curriculum. Nevertheless, it is crucial to understand how teachers utilize the aforementioned resources in their lesson plans and how students react to the enhanced learning environment mediated by interactive experiences (Tan & Chee, 2021).

Hirju & Georgescu (2023) in their research stated that the use of digital tools such as QR codes has a great influence on the interactivity as well as accessibility of materials in language learning. However, their research focused more on the general application of technology in language learning without specific reference to any curriculum context, such as the Independent Curriculum which promotes student flexibility and a student-centered approach.

This research aims to fill this gap by exploring the effects of QR code in English learning books integration towards more innovative and dynamic teaching strategies in the classroom in the Independent curriculum .

B. Definition of Key Terms

1. QR Code (Quick Response Code)

Japanese company Denso Wave first developed the two-dimensional matrix code known as QR (Quick Response) Code in 1994. QR codes were first created to track components during the production process in the automotive industry, but were later widely used due to their ability to store and retrieve information quickly.

QR Code can be accessed at any time by using a smartphone or something similar. it can be accessed with the help of the Scan QR Code application or online scanning through the Scan Online website (Yunimuninggar, 2023).



Figure 1.1 QR codes

In this study, QR Code is refer to provide easy access to additional subject matter, interactive exercises, and other online resources that support students' learning process. The integration of QR Codes as part of learning tools contributes to an engaging and interactive learning experience for students (Darmawan, 2024).

2. Independent Curriculum

The Independent Curriculum was launched in Indonesia in 2021 by the Ministry of Education, Culture, Research and Technology, Nadiem Anwar Makarim in response to the challenges of modern learning.

In this study, the Independent Curriculum refer to the curriculum that is currently still being applied in Indonesia. which focuses on the use of QR codes in senior high school English learning

books accordance with the principles of the independent curriculum with two key aspects of the Independent Curriculum: Differentiated Learning and Integration of Technology.

Through the use of QR Codes, teachers can provide customized reading materials suited to different students' proficiency levels by promoting differentiated instruction. Besides, QR Codes represent the integration of digital tools into classroom practices, supporting the Independent Curriculum's vision of technology driven and student centered education.

3. English Learning Books

English learning book is a book designed for students to help them learn English. the book contains materials related to English language, such as vocabulary, grammar, reading texts, and others. the development of technology, some learning books including English learning already provide QR codes to access additional materials, audio, and reading texts.

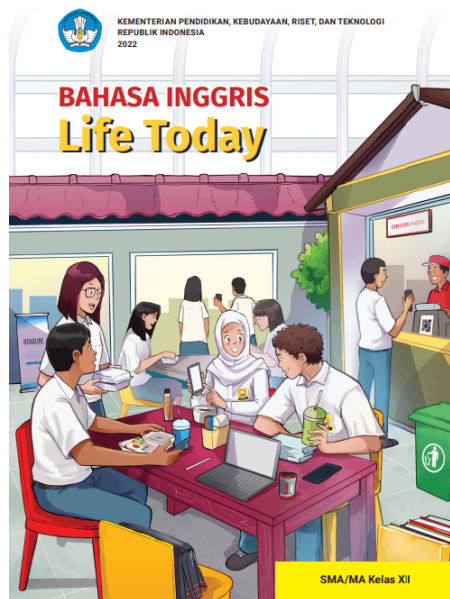


Figure 1.2 English book grade12

In this study, English learning books refer to senior high school English learning books based on the independent curriculum. This book also provides QR Codes in it so that students can access it themselves.

C. Research Questions

Based on the background description above, the formulation of questions in this study is as follows :

1. How does the integration of QR codes in English learning books by Independent curriculum affect student interaction in the classroom ?
2. What are teaching strategies designed by teachers to integrate QR codes into English language learning in the independent Curriculum?

D. Research Objectives

In this study, the researcher has the following research objectives :

1. To analyze the integration of QR Codes in English books by Independent Curriculum affects student interactions in the Independent curriculum.
2. To identify teaching strategies designed by teachers to integrate QR codes into English language learning in the independent Curriculum.

E. Research Significance

This study is expected to provide both theoretical and practical contributions to English language teaching, particularly regarding the Role of QR Codes in English learning books within the Independent Curriculum.

Theoretically, this study contributes to the development of knowledge in the field of English language education by providing empirical evidence on the integration of QR Codes in English learning books and their effects on students classroom interaction. It also enriches the existing literature on technology integration, student centered learning, and the implementation of the Independent Curriculum. Furthermore, the findings may serve as a reference for future researchers who are interested in conducting studies related to educational technology, QR Code integration, or English language teaching.

Practically, this study is expected to provide benefits for several parties. For English teachers, the findings offer insights into effective teaching strategies for integrating QR Codes into classroom instruction. For students, the study demonstrates how QR Codes can enhance learning motivation, classroom engagement, collaboration, independent learning, and English language skills. For schools, the findings may serve as a reference for encouraging the integration of digital technology into classroom learning in support of the Independent Curriculum. Finally, for future researchers, this study can be used as a reference for conducting further research on the implementation of educational technology in English language learning.

CHAPTER II

THEORITICAL REVIEW

This paragraph summarizes the purpose of writing the chapter and provides a roadmap of the concepts to be discussed. In this chapter will be discuss about QR Codes, Independent Curriculum, Student Interactions, Teaching Strategies, Previous Study.

A. QR Codes (Quick Response Code)

1. Definition

A QR Code (Quick Response Code) is a two-dimensional barcode consisting of black-and-white square patterns that can be scanned using a camera or scanning application to retrieve digital information such as URLs, texts, audios, videos, or documents. It was originally developed by the Japanese company Denso Wave in 1994 to track automotive components but has since evolved into a educational tool (Yao et al., 2022).

2. Types and function of QR Codes

QR Codes are generally classified into two main types : Static QR Codes and Dynamic QR Codes, each serving distinct functions.

a. Static QR Codes

Contain fixed data that cannot be edited once generated. They are suitable for permanent content such as URLs or contact information but require regeneration if the data changes (Dhiway, 2024).

b. Dynamic QR Codes

On the other hand, include a redirect link that can be updated at any time without altering the printed code. They also allow data analytics such as the number of scans, user locations, and device types making them ideal for educational tracking and interactive learning activities (Hidayati, 2024).

3. QR Codes for educational

The integration of QR Codes into education provides multiple pedagogical benefits:

a. Allow quick access to supplementary learning materials such as videos, audios, quizzes, and online readings directly from printed books (Kandiri et al., 2025).

- b. Increase student motivation and engagement by promoting self-directed and interactive learning activities (Chotimah et al., 2024).
- c. Support collaborative and project-based learning, enabling students to explore and discuss digital resources within groups (Hidayati, 2024).
- d. Promote autonomous learning, as students can review materials anytime and anywhere using their own devices (Yunimuninggar, 2023).

4. Type of QR Code Used in the English Learning Book

In this study, the QR Codes embedded in the English learning book are categorized as static QR Codes because each QR Code directs students to predetermined digital learning resources, such as audio recordings, videos, and supplementary materials that are permanently linked to the textbook. Unlike dynamic QR Codes, the content cannot be modified without replacing the printed QR Code.

The English learning book used in this research was Bahasa Inggris Life Today for Grade XII Senior High School, published by the Ministry of Education, Culture, Research, and Technology under the Independent Curriculum. The QR Codes

provided in this textbook mainly function to give students direct access to listening activities, pronunciation practice, authentic audio materials, and additional learning resources that support classroom instruction.

The integration of static QR Codes into printed textbooks reflects blended learning because students can easily connect printed materials with digital resources through a simple scanning process. According to Yao (2022), QR Codes in educational materials simplify access to multimedia content and improve students' learning experiences by combining traditional and digital learning environments.

B. Independent Curriculum

1. Definition

The Independent Curriculum is an educational curriculum introduced by the Indonesian Ministry of Education, Culture, Research, and Technology to improve the quality of education and address learning loss after the COVID-19 pandemic. The curriculum emphasizes student centered learning, flexibility in teaching, and the development of students' competencies according to their interests, talents, and learning needs. Unlike previous curriculum, the Independent Curriculum provides teachers with greater

autonomy to design meaningful learning experiences while encouraging students to become active participants in the learning process.

2. Aspects in Independent Curriculum

The curriculum focuses on a more flexible approach to learning and gives teachers and schools more freedom to choose learning methods that best suit the needs and characteristics of students. It is designed in a way that integrates students' skills. These skills include character, citizenship, critical thinking, creativity, collaboration, and communication (Anwar, 2024).

Teachers are expected to optimize the support strategies that have been prepared by the Ministry of Education and Culture, ranging from the Independent teaching Platform, webinar series, learning communities, resource persons who share good practices, support service centers, to collaborating with partners (Mirnayanti, 2024).

Based on the literature (Fuadi et al., 2024), the Independent Curriculum comprises 5 fundamental aspects:

1. Freedom and Flexibility in Learning

Schools and teachers have autonomy to design teaching strategies relevant to their learners' contexts. Teachers act as facilitators, while students actively lead their learning process (Amet et al., 2023).

2. Differentiated and Personalized Learning

Learning is adjusted to each student's ability, interest, and learning style, allowing greater individualization and inclusivity (Ayudia et al., 2024).

3. Integration of Technology

The curriculum promotes the use of digital technologies to develop creativity, critical thinking, communication, and collaboration (Musa & Nurhayati, 2025).

4. Authentic and Continuous Assessment

Evaluation emphasizes formative, project-based, and performance assessments rather than traditional written tests (Rizki & Fahkrunisa, 2024).

5. Profile of Pancasila Students

This aspect develops well-rounded learners who are faithful, independent, collaborative, critical, creative, and globally minded (Syafriani et al., 2024).

C. Student Interactions

Student interaction is defined as how students can communicate, cooperate, discuss, and participate in learning. in English learning, student interaction is very important because it can encourage them to engage in activities and collaborate with each other to solve a problem together. it can also develop children's skills in writing, reading, listening, and speaking.

In this study, student interaction refer to how students interact with the use of QR codes in English learning books based on the independent curriculum. student interactions in this context include student engagement in learning, student activeness in finding information, and their experience in interactive and fun learning.

1. Active Interactions Through Technology

Technologies like QR codes can increase students' engagement with the course materials by providing access to further information through QR code scanning and facilitate discussion in groups of the contents they accessed. It allows them not just to be passive receivers of information but

rather to actively create knowledge. The idea of Social Constructivism supports it, which presents the notion that social interaction helps one learn even better (Vygotsky, 1978).

2. Structured Classroom Discussion

It allows students to be more critical in their thinking and sharing of their opinions while they access relevant content, therefore, making class discussions more meaningful. QR codes can be used to provide access to articles, videos, and other resources that will lead to more meaningful discussions. Directed discussions enhance students mastery of the subject matter and their learning to think critically and analytically (Brookfield, 2012).

3. Building Learning Communities

A supportive learning environment gives students an opportunity to assist each other and to share knowledge. Creating a learning community will help them feel connected and hence motivated towards learning. Therefore, this kind of mutually supportive learning environment may provide greater self-confidence to students in order to

encourage taking risks during learning. (Wenger, 1998).

D. Teaching Strategies

A teaching strategy is a method or technique in teaching students in learning that is carried out by the teacher. Teaching strategies can be in the form of planning learning activities, using media and technology or evaluation to help students improve their skills.

In this study, teaching strategies refer to strategies for integrating QR codes in English learning books in an independent curriculum, such as how teachers utilize QR codes as a learning media, their perceptions and challenges in designing and adjusting what strategies are suitable for the principles of an independent curriculum.

The strategies also designed to make students increase their interest in learning.

Several studies have identified effective strategies for integrating QR Codes into classroom instruction. According to Husaeni (2023), teachers commonly use QR Codes to facilitate collaborative learning, encourage students to search for information independently, and support problem based learning classroom activities. QR Codes allow teachers

to shift from teacher centered instruction toward student centered learning by enabling learners to actively explore digital resources.

Similarly, Mirnayanti (2024) explains that teachers integrate QR Codes by designing interactive learning activities, providing access to multimedia materials, encouraging classroom discussions, and promoting independent learning. These strategies align with the principles of the Independent Curriculum, which emphasizes flexibility, collaboration, creativity, and technology integration.

Furthermore, Tan and Chee (2021) reported that QR Codes are most effective when teachers combine them with collaborative tasks, pronunciation practice, listening activities, and problem-solving exercises rather than using them merely as tools for accessing information.

1. Integration of Technology in Learning

QR codes can make learning even more effective. Having the access to resources through a QR code for interactive exercises, articles, and videos lets students acquire information without wasting any time in locating it.

The students easily take the chance themselves of the opportunity of further learning from sources other than their textbooks by just scanning the QR code for connecting them to multimedia content for deeper understandings and to expand knowledge about the topic being worked on.

The teacher can organize some activities that would allow the students to scan for more details about the topic they are studying. For example, after studying a certain topic in English, students can be asked to scan the QR code leading to some videos or articles explaining the topic. It is not only do students become more engaged in this activity, but they are also motivated to seek information and learn independently. This again is in accordance with the idea of the Technology Acceptance Model (TAM) (Davis, 1989).

2. Problem Based Learning (PBL)

Problem based learning develops the critical thinking of students and encourages them to cooperate and communicate. In addition, at the completion of certain tasks, students can also be assigned group work, and QR codes can be used to link resources and information.

Teachers can be divide the students into small groups and tasked with finding and analyzing information by using QR codes. They can do research on a topic and then present their findings to the class. It is not only through textbooks that students learn but from many other sources which enrich their learning experience. Moreover, this has the potential to turn the learning environment into a more dynamic and interactive one. This ideas contained in the Constructivist Learning Theory by Piaget (1976).

3. Reflections and Feedback

Include reflective sessions in learning activities for students to review their experience after the use of QR codes. Reflection plays a significant role in learning because it contextualizes what the students have learned and how they will be able to use it in life. By providing an opportunity for students to reflect on their experience, they notice their strengths and identify areas that require improvement.

Teachers can ask students to write a reflection on what they learned, how they used the QR code, and how the experience affected their understanding after the

activity involving the QR code is over. In the future, this feedback can be used to improve learning activities. In this way, students not only gain knowledge from their experience, but also help build a better classroom teaching approach (Schön, 1983).

4. Teacher Training and Support

Training and support should be provided to the teachers to have the ability and knowledge in effectively integrating QR codes into their teaching. In addition, for the teachers to be confident in using the new technology in the classroom, adequate training is important. When teachers know how to use QR codes, they will come up with more relevant activities that are appealing. The implementation is that schools can hold seminars and workshops on the importance of using technology and QR codes in the current Independent curriculum. This will eventually help teachers to understand how to better use these technologies in their teaching to enhance the learning experiences of students (Mirnayanti, 2024).

E. Difficulties and Challenges in Using QR Codes

Although QR Codes provide numerous educational benefits, several studies have reported challenges in their implementation. One of the most common obstacles is the availability of smartphones and stable internet connections. Students who do not have personal mobile devices or experience poor internet access may encounter difficulties when accessing QR Code-based learning materials (Yao et al., 2022).

Another challenge concerns school regulations regarding smartphone use. Some schools restrict students from bringing mobile phones into classrooms, limiting the opportunities to integrate QR Codes into daily learning activities. Consequently, teachers need to carefully plan when and how QR Codes are used to ensure that technology supports rather than disrupts the learning process (Husaeni, 2023).

Teachers may also experience difficulties due to limited technological competence or lack of professional training. Mirnayanti (2024) explains that successful implementation of digital learning requires continuous teacher professional development, institutional support, and opportunities for teachers to share best practices with colleagues.

Despite these challenges, careful lesson planning, adequate technological infrastructure, and teacher readiness can maximize the educational benefits of QR Code integration.

F. Previous Study

The use of technology in English language learning has shown that the incorporation of digital tools such as QR codes increases student engagement and effectiveness of learning. For instance, (Izza, 2024) found that the use of QR codes in English textbooks can improve students' listening and speaking skills. This study has demonstrated that students turn to be more active in the learning process and show greater interest in participation in classroom activities when they have fast access to additional materials.

Tan and Chee (2021) conducted research into students' motivation to use QR codes while learning pronunciation. The research showed that those students who were given interactive exercises with the help of QR codes felt more engaged and motivated. This research verifies that the integration of technology into the curriculum increases the learning experience of students and develops an interactive mode of teaching English. A link between the studies of Izza (2024) and Tan and Chee (2021) demonstrates that QR codes enhance not only the students' proficiency in English but also

their motivation to learn.

The studies of Izza (2024) and Tan & Chee (2021) are complementary since both have showed that QR codes could be promising for students in learning. Both studies reflected that students exposed to QR codes for accessing some interactive exercises have shown more engagement and are better motivated. Both these studies indicate that QR code usage improves the language skills of students, not only because they have more materials, but also because they are more motivated and participate in the lessons. In other words, QR codes act not only as a tool to get information, but also as an encouragement to become more active in the lesson.

Husaeni (2023) found that this technology can improve students computational thinking skills. This research has illustrated the role of QR codes, not only for obtaining information, but also for supporting more active and cooperative learning methods. Therefore, the results of this research show that there is a connection between Husaeni research and previous research on more cooperative learning methods.

Similar research regarding the development of game-based learning media integrated with QR codes was also conducted by Yunimuninggar (2023). The results showed that the application of QR codes in learning media can increase students' interest and understanding of the subject matter, especially in science learning. This research adds another important aspect to the use of QR codes that has been listed in showing that this technology can be applied in a variety of different learning contexts, such as science. The research conducted by Yunimuninggar (2023) has shown that QR codes can be a flexible and effective tool in various discipline.