# Digital Anki Flashcards for Improving Mandarin Vocabulary Mastery in Grade VIII

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| Keywords | Abstract |
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| *Flashcard, Anki, Vocabulary, Mandarin.* | Vocabulary mastery is a crucial component in learning foreign languages, including Mandarin, which is increasingly important in today's global context. However, junior high school students in Indonesia often struggle to master Mandarin vocabulary successfully, partly due to the limited use of interactive digital learning media. This study aims to describe the use of digital-based Anki flashcard media and examine its impact on the vocabulary mastery of eighth-grade students at SMP IT Cheng Hoo. Using the Classroom Action Research (CAR) model by Kemmis and McTaggart, the research was conducted in two cycles involving 17 students. Data were collected through vocabulary tests and observation sheets. The findings revealed an improvement in the average student score from 60.78 in the first cycle to 85.09 in the second, indicating a 24.31-point increase. These results suggest that the use of Anki significantly supports students' retention and understanding of Mandarin vocabulary. The study concludes that digital flashcard applications like Anki offer an innovative and responsive learning strategy that suits students' needs and increases engagement in Mandarin vocabulary acquisition. |

## INTRODUCTION

China's economic growth and increased global cooperation (Nalyvaiko et al., 2020). China has become one of the world's largest economic powers. Its role as the language of international business and trade is a key reason why people want to learn Mandarin. Mandarin language proficiency has become increasingly important as China's economy rapidly expands and becomes one of the world's largest economies. It enables individuals and groups to better communicate in business contexts, build stronger relationships with trading partners, and enhance their understanding of local markets. With China's rapid economic growth, demand for Mandarin language learning has indeed increased. Mobile technology and the internet have played a significant role in facilitating access to language learning, enabling more people from around the world to learn Mandarin. This has expanded China's influence worldwide and made language learning more accessible and engaging for students (Abro et al., 2014).

Language is crucial in everyday life because it allows people to communicate with each other to obtain or convey information. The use of Mandarin as a foreign language in Indonesia has become an increasingly interesting topic, especially in this era of increasingly integrated globalization. Mandarin, as the official language of the People's Republic of China, plays a vital role in various aspects of life, such as technology, economics, politics, and culture. The need to learn Mandarin is increasing along with its global influence and the growth of economic business relations, studies, and tourism (Cleveresty & Afrina, 2022). This demand is driven by increased trade and cultural exchange between China and other countries, making Mandarin essential for individuals, groups, and companies. A crucial aspect of language learning, with a focus on understanding and mastering vocabulary, begins with learning a new foreign language and involves frequent memorization (Jaya & Iswari, 2019).

Vocabulary consists of groups of words or single words. Vocabulary plays a crucial role in everyday language use, both in the thinking process and as a tool for communicating with others. Vocabulary is a language that must be mastered by anyone who wants to learn a language (Sitompul & Rahayuningtyas, 2022). Vocabulary is the most important part of language skills that must be mastered (Andarista & Subandi, 2023). When learning a language, vocabulary is the most fundamental thing to understand. Someone who lacks vocabulary will have more difficulty understanding and conveying their thoughts to others (Wardhana et al., 2022). According to Kridalaksana (1982:98) in Sitompul & Rahayuningtyas (2022), vocabulary is a component of a language that contains various information, the meaning and use of words, variations of words used by speakers and authors, and a list of words arranged like a dictionary with concise and detailed explanations. Therefore, it can be concluded from the several definitions above that vocabulary is a group of words found in a language.

A significant opportunity to utilize technology in the learning process arises with the current increase in technology use. With rapid technological advances, obtaining information and knowledge about

China and Mandarin is becoming easier and more widespread. Technology in language learning can make classes more interactive and engaging, increasing student motivation and engagement through the use of learning media. Learning media can be defined as anything that can be used to convey messages from sender to recipient with the aim of enhancing students' thoughts, feelings, attention, and interests and achieving learning objectives (Widyastuti & Sa'adah, 2022). Media is a tool for conveying and presenting information, including text, graphics, speech, images, and music (Bărbuleţ, 2023). According to (Hermawan et al., 2020) Hermawan (2020), learning media is a type of communication tool used to convey information from various sources to students in a planned manner to create a conducive learning environment. Furthermore, recipients of the information can learn effectively. The use of appropriate learning media in Mandarin learning significantly assists students in mastering the material. One important aspect to consider in several components of learning activities is the availability of information delivery tools for learning activities, which enable effective communication (Mayasari & Amri, 2020). The use of digital-based learning media often combines various learning methods, such as quizzes, games, and interactive exercises, which can help students, among other things, understand vocabulary. Furthermore, it makes learning more fun and engaging, which can motivate students to actively participate in their learning process (Bărbuleţ, 2023).

Digital flashcard-based language learning applications and e-learning platforms are some of the innovative learning media created by current technology. These media have the potential to increase student engagement and make learning more interactive and enjoyable (Jaya & Iswari, 2019). The lack of motivation and effective and interactive learning resources makes it difficult for students to understand and master Mandarin vocabulary. Therefore, innovative and interactive learning strategies are needed to improve students' Mandarin vocabulary mastery. The use of Mandarin in schools is still limited, especially at the junior high school level. Many students still experience difficulties in understanding and mastering Mandarin vocabulary, mainly due to the lack of direct interaction with an environment that uses the language regularly.

At SMP IT CHENG HOO, eighth-grade students are targeted to master vocabulary according to the HSK 2 standard, which is 300 vocabulary words, plus 33 new vocabulary words from the Chunhui book. With a total of 333 vocabulary words, students are at the A2 (初级) stage. However, based on observations, the average student has only mastered 184 vocabulary words, which is still below the set standard. This factor is the reason for choosing SMP IT CHENG HOO as the research location, because many students are still not proficient in mastering Mandarin vocabulary. In addition, the KKM set for Mandarin subjects in this school is 81. This is also the basis for one of the reasons for choosing SMP IT CHENG HOO, because there are still many students who are not proficient in vocabulary mastery, which can be proven by the data of students in class VIII as many as 18 people, from interviews with the teacher in charge of Mandarin stated that of the 18 students, who are proficient in mastering Mandarin vocabulary as many as 3 people, 4 people who are quite adequate in vocabulary mastery, 6 people who are moderate (average) in vocabulary mastery, and 5 people who

are stiff in vocabulary mastery. So, in an effort to improve Mandarin language skills in SMP IT Class VIII CHENG HOO students, innovative and interactive learning strategies are needed. One strategy that can be used is to use digital-based flashcards, especially the use of anki. Anki is software designed to support learning using a spaced repetition method. It utilizes intelligent algorithms to determine the appropriate time for users to review previously learned material. It is a digital flashcard-based tool that presents Mandarin vocabulary in the form of words, animations, audio, images, or a combination of these. It aims to develop general vocabulary and foreign language vocabulary specifically, enabling students to understand and remember more effectively. Flashcards are a long-standing learning method for improving vocabulary mastery and offer a more effective and interactive alternative. The use of digital flashcards in learning Mandarin vocabulary has been proven effective in improving students' vocabulary acquisition. The use of digital flashcards can also increase students' enthusiasm for learning. Furthermore, digital flashcards can be accessed anytime and anywhere, allowing students to continue their learning independently and flexibly.

Several studies relevant to this research include those conducted by several researchers, including Sutra (2024), who studied eighth-grade students at SMPN 6 Wonomulyo, Majene, West Sulawesi, on English vocabulary mastery using digital Anki flashcards. The results of the data analysis showed that there was a 35% increase in vocabulary mastery. The next relevant study is the study conducted by Nender, Muntuuntu, and Rombepajung (2022) who conducted a study on seventh-grade students of Berea Tondano Middle School, Manado in English vocabulary mastery using digital-based Anki flashcard media. The results of the data analysis showed that there was a significant increase of 70% in vocabulary mastery. The next study was also conducted by Lumi, Sampotan, and Aror (2022) who conducted a study on grade XII IPA 4 students at SMK Negeri 1 Tondano, Manado who were studying Japanese in vocabulary mastery using digital-based Anki flashcard media. The results of the data analysis showed an increase of 43%. This study was also conducted by Ervan Jaya (2020) on English vocabulary mastery involving seventh-grade students at SMPN 6 Makassar. The results of the data analysis showed that there was a 44% increase using digital-based Anki flashcard media. From observations that have been carried out by researchers previously at SMP IT CHENG HOO, information and interview results were obtained from Mandarin language teachers and direct observations in class that students utilize learning media in the form of Mandarin Language Books (YCT, Méihuā, and Chūnhuī) Flashcards in the form of Power Point slides and Quizizz during Mandarin vocabulary learning activities.

Based on the description above, this study examines how learning planning using digital-based Anki flashcards can enhance Mandarin vocabulary mastery among eighth-grade students at SMP IT CHENG HOO. Specifically, it investigates the implementation of Anki in the learning process and analyzes the resulting improvements in students' Mandarin vocabulary mastery.

**METHOD**

The type of research used in this study was classroom action research (CAR) using the Kemmis and Mc. Taggart model, which consists of four elements: planning, action, observation, and reflection. The population in this study was all 17 eighth-grade students at SMP IT CHENG HOO. The research instruments used were teacher and student observation sheets and tests at the end of each cycle, given to students to determine their mastery of Mandarin vocabulary. The tests consisted of two types of questions: 10 multiple-choice questions and 5 matching-the-picture-to-word questions. Each correct answer received a score of 1, and each incorrect answer received a score of 0. Qualitative data analysis techniques were used to calculate student test scores using the mean formula. Data analysis of teacher and student observations included data reduction, improvement analysis in each cycle, data presentation, and presentation of the results in descriptive narrative form.

**RESULTS AND DISCUSSION**

**RESULT**

Based on the results of classroom action research carried out in two cycles, it was found that the use of digital-based Anki flashcard media contributed to improving the mastery of Mandarin vocabulary of class VIII students at SMP IT Cheng Hoo, as follow:

1. The first cycle of learning using Anki flashcard media

In the first meeting of Cycle I, held on May 8, 2025, learning activities began with the preparation of a lesson plan, observation instruments, and the Anki learning media that would be used in the Mandarin vocabulary learning process. During the session, the teacher explained the text "爸爸不想洗汽车" (Chinese: 爸爸不想洗汽车), introduced how to use Anki, and guided students in imitating vocabulary pronunciations and practicing through interactive quizzes. Observations revealed several aspects of the learning process that were not yet optimal, such as the teacher not guiding students in summarizing the material and students not being able to convey their conclusions. Based on these findings, a reflection was conducted indicating the need for increased guidance for students, particularly in guiding their understanding and drawing conclusions from the material. Improvements were planned for the next meeting.

In the second meeting of Cycle I, held on May 15, 2025, the teacher implemented the revisions from the previous meeting's reflection. The learning process was more focused, providing students with more opportunities to explain the material and improving the use of Anki for greater effectiveness. However, observations showed that one aspect of teacher learning remained unfulfilled, namely the explanation of the benefits of using Anki media. On the other hand, students showed increased attention and participation, although some students still lacked focus at the beginning of the lesson. At the end of Cycle I, a vocabulary mastery test was administered to 17 students, with an average score of 60.78, the highest score being 73.33, and the lowest being 53.33.

2. The second cycle of learning using Anki flashcard media

In the first meeting of Cycle II, held on May 19, 2025, learning activities began with the development of a plan based on reflections from Cycle I. During the lesson, the use of Anki began to show a positive impact, as students appeared more active in imitating vocabulary, taking quizzes, and asking questions about the material. However, observations revealed that several stages of the teacher's learning process were not implemented, such as the absence of apperception, the lack of reading out learning objectives, and the lack of guidance in summarizing the material. This was due to time constraints and several technical difficulties during the lesson. However, overall, student activity improved, as they were more enthusiastic and remembered vocabulary more easily than in Cycle I.

In the second meeting of Cycle II, held on May 22, 2025, learning activities proceeded more optimally, as all planned learning steps were successfully implemented. The teacher guided students in summarizing the material, provided exercises using the Anki application, and directed students to review and practice vocabulary independently. Observations showed that almost all teacher and student activity indicators were met, and students showed significant improvements in their vocabulary recall and use. After the learning, a final test of cycle II was given to 17 students which resulted in an average score of 85.09, with the highest score of 100 and the lowest score of 73.33. Based on the final results of cycle II, it can be concluded that the use of Anki digital flashcard media provides a real increase in the mastery of Mandarin vocabulary of eighth grade students, and the improvements in learning steps carried out in cycle II are able to overcome the shortcomings of the previous cycle.

**DISCUSSION**

This research discussion is a classroom action research (CAR) conducted in two cycles, each consisting of four stages: planning, implementation, observation, and reflection. In the planning stage, the researcher and the teacher developed a Lesson Implementation Plan (RPP), prepared learning media in the form of Anki digital flashcards, and compiled teacher observation sheets, student observation sheets, and vocabulary mastery test instruments. These stages ran well in cycle I and became more mature in cycle II because the researcher had evaluated the shortcomings that occurred in the previous cycle. In the implementation stage, learning proceeded according to the prepared RPP, using Anki digital media as an aid for students to memorize and understand Mandarin vocabulary. The observation stage was conducted to observe teacher and student activities during the learning process, while the reflection stage was used to evaluate the success of the actions and determine corrective measures for the next cycle. Overall, all stages in both cycles were implemented well and showed positive developments. The learning process in cycle I showed that students were still adapting to the use of Anki digital media. Some students were quite enthusiastic, but others still had difficulty following instructions and lacked focus, especially in the initial meeting. Teachers also needed to guide

students in understanding basic features such as the "again," "hard," "good," and "easy" buttons. Nevertheless, Anki media had begun to help students recognize vocabulary through images, audio, and pinyin. In cycle II, the learning process progressed better. Students appeared more accustomed to using Anki, were more focused on learning activities, and were able to utilize the spaced repetition feature more optimally. The classroom atmosphere became more active as students could repeat vocabulary independently and practice answering with confidence. Improvements in cycle II made learning more effective, interactive, and enjoyable. Teacher and student activity during learning increased from cycle I to cycle II. In cycle I, teachers were still adjusting to the flow of media use, so some learning stages, such as providing reinforcement or guiding students in drawing conclusions, were not implemented optimally. Students also did not show full engagement; some remained passive, and some had difficulty following instructions. However, in cycle II, teacher activity became more focused. Teachers were able to manage the class well, provide clear directions on how to use Anki, and guide students in reviewing vocabulary with appropriate strategies. Meanwhile, student activity increased significantly. They became more active in answering questions, were more confident in asking questions, were able to summarize the material, and showed greater interest in learning Mandarin vocabulary using digital media. This improvement indicates that a more structured learning process and engaging media can increase student engagement.

The improvement in vocabulary mastery is clearly visible from the comparison of test results in cycle I and cycle II. In cycle I, the average student score was 60.78, indicating that some students still had difficulty understanding and remembering Mandarin vocabulary. However, in cycle II, the average score increased to 85.09. This improvement reflects that learning using Anki flashcards helped improve students' abilities in memorizing, recognizing hanzi, understanding pinyin, and remembering vocabulary meanings. With structured repetition, students were able to learn vocabulary gradually and more consistently. Thus, there was a significant increase in vocabulary mastery between cycles I and II. The use of Anki flashcards facilitates students' vocabulary development. Anki provides visual displays, audio, and a spaced repetition system that helps students remember vocabulary more systematically. This tool also allows students to learn vocabulary at their own pace, as they can choose the difficulty level for each card. Furthermore, the use of technology makes learning more engaging, thus increasing student motivation. With the support of this tool, vocabulary development gradually improved over two learning cycles. The success indicator in this study was determined based on the increase in vocabulary mastery demonstrated through test results and the development of student activity. In cycle I, the indicator was not met because the average score was still below the target increase limit. In cycle II, the improvement indicator was successfully achieved, indicated by an increase in students' average score to 85.09 and increased student activity during the learning process. Based on the comparison of the two cycles, it can be concluded that students' vocabulary mastery experienced a significant increase.

These findings align with previous studies by Sutra (2024) and Lumi, Sampotan, and Aror (2022),

which noted an increase in vocabulary mastery after using flashcard-based digital media. However, unlike studies that focused on evaluating effectiveness, this study highlighted the process component of the learning strategy. With two learning cycles, it appears that students' vocabulary mastery showed improvement. Students demonstrated superior vocabulary recognition, recall, and utilization skills in the context of learning Mandarin. This demonstrates that digital flashcards like Anki, when used routinely and systematically, can be a valuable tool in foreign language vocabulary learning.

**CONCLUSION**

Based on the data analysis, the researcher concluded three main findings to answer the research problem. First, the planning carried out by the researcher together with the Mandarin Chinese teacher using digital-based Anki flashcards consisted of several aspects, such as creating a Lesson Implementation Plan (RPP) and learning resources in the form of the Méihuā textbook, compiling teacher and student observation sheets, and creating an evaluation tool in the form of questions to determine student vocabulary mastery. Second, the learning process using digital-based Anki flashcards for eighth-grade students at SMP IT CHENG HOO improved in cycle II compared to cycle I. During the learning process, teacher-student interaction was very good, with students being more active in asking questions and answering questions, and responding positively to the use of digital-based Anki flashcards. Third, the results of the evaluation test in mastering Mandarin vocabulary through digital-based Anki flashcard media for class VIII students of SMP IT CHENG HOO showed that the average score of students in cycle I was 60.78 while the average score of students in cycle II was 85.09, which means there was an increase from cycle I to cycle II of 24.31.

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