

## The Efficacy of Mobile-Assisted Language Learning in Improving Learners' Reading Skills in Relation to Metacognitive Strategy

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### Abstract

Mobile-assisted language learning (MALL) is a mobile device-based approach that is utilized in language learning to enhance students' reading proficiency. As mobile devices have become the dominant mode of learning due to prevailing conditions, it has become increasingly necessary to employ adaptable learning processes that aim to improve students' reading skills through the use of metacognitive strategies. Although reading is one of several skills essential to learning English, in the current pandemic situation, it is impractical to teach it directly. Therefore, the MALL approach is imperative to adapt to the new teaching-learning process, particularly in the current pandemic scenario. This study endeavors to assess the application of MALL and its impact on students' reading skills by conducting both qualitative and quantitative research. Data collection methods in this study include observation, documentation, and field notes. The study involved one problematic class, to which researchers implemented the MALL application, followed by tests and interviews at the end of the study. The results indicate a significant increase in students' reading skills, along with ease of learning during the pandemic. Thus, this study highlights the efficacy of the MALL approach in improving students' reading skills and adapting to the pandemic-induced new teaching-learning process.

**Keywords:** mobile-assisted language learning; reading skills; metacognitive strategy

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## INTRODUCTION

English, as a global language, plays a pivotal role in acquiring knowledge, skills, and information in international communication. In Indonesia, English is considered a foreign language. Chapelle (2012) defines a foreign language as a language that students do not use for communication beyond the classroom environment. This is because foreign languages must be learned by students through classroom instruction (Dolba et al., 2022; Haerazi & Nunez, 2022). Proficiency in a foreign language involves the mastery of four fundamental language skills, namely speaking, listening, writing, and reading (Al-Zyoud et al., 2017; Bice & Kroll, 2021). Therefore, for students to achieve proficiency in a foreign language, they must acquire competence in all four of these essential language skills.

The act of reading is commonly referred to as repressive ability, as it involves the reception of language and information related to the written material (Al Adawiyah, 2023; Alfatihah & Tyas, 2022). Given the significance of reading skills, improving these skills is crucial. In addition to the benefits of the repressive abilities that have been explained, an individual's reading ability can significantly impact other essential skills such as listening, speaking, and writing (Akyol & Boyaci-Altinay\*, 2019; Albiladi, 2018; Anwar & Sailuddin, 2022). To enhance reading skills, several factors must be taken into account. First and foremost, having a clear goal is essential to achieving reading proficiency (Bruen, 2020; Firman et al., 2021). In addition, selecting appropriate texts that match the reader's proficiency level, employing the appropriate style of language, and having the ability to retain and comprehend the material are all crucial factors in improving reading skills (Alquraishi et al., 2020). Therefore, it is imperative to develop effective reading strategies that can be used to improve reading ability and, by extension, enhance the development of other language skills.

According to Zano (2022) reading is a valuable source of both learning and enjoyment. Reading facilitates the acquisition of knowledge and offers a sense of pleasure when the information is obtained (Rokhayati & Alvionita, 2022; Selim & Islam, 2022). A detailed reading process can lead to improvements in vocabulary and grammar as the brain mimics the language present in the reading material (Putri et al., 2021). This ultimately leads to better communication skills since correct grammar and appropriate vocabulary are internalized during the reading process. In addition, reading can provide a sense of enjoyment for language learners (Herwanis et al., 2021; Rafi et al., 2021), and this in turn leads to improved reading fluency and heightened levels of satisfaction. Therefore, the enjoyment factor associated with reading should be acknowledged and leveraged to promote better learning outcomes in language education.

Reading is a fundamental language skill that involves interpreting written material to derive meaning. According Haerazi and Irawan (2020), reading is a cognitive process that requires the use of reasoning to comprehend printed words. Reading serves as a valuable source of insight, offering readers access to information and ideas. Additionally, the more students read, the better they become at reading, as practice leads to increased proficiency (Brevik, 2019; Bruen, 2020). However, reading skills do not exist in isolation, and they are best developed alongside other essential language skills such as writing, listening, and speaking (Crosson & Lesaux, 2010). By integrating these four core language skills, learners can build a comprehensive language foundation and improve their overall proficiency in the language. Therefore, reading must be considered as an integral part of the language learning process and should be taught in conjunction with the other language skills to develop well-rounded language learners.

Reading comprehension is a complex process that involves more than just recognizing the meaning of individual words. Students faced several challenges that they may face in comprehending written material. One such issue is a limited vocabulary (Firdaus & Mayasari, 2022; Khonamri et al., 2021), which can hinder readers' ability to understand unfamiliar words and phrases. Additionally, difficulties with pronunciation can make it challenging to recognize and interpret words (Anwar & Sailuddin, 2022; Eliata & Miftakh, 2021), leading to decreased comprehension. A lack of background knowledge related to the topic being read is another problem (Habibi et al., 2022), as readers may not be able to relate the information to their own experiences or prior knowledge. The level of text difficulty can also be a barrier, especially for readers who are not yet proficient in the language. Ineffective reading strategies, such as a lack of note-taking or active engagement with the text, can also lead to poor comprehension (Crosson & Lesaux, 2010). Furthermore, low verbal reasoning skills can limit readers' ability to make connections

between different pieces of information, making it difficult to fully understand the text. Finally, difficulties in processing and remembering information after reading can hinder comprehension. Therefore, to improve reading comprehension, it is essential to address these challenges systematically by using appropriate reading strategies, building vocabulary, and providing opportunities for background knowledge acquisition, and improving verbal reasoning skills.

In recent times, there has been a shift from traditional offline learning to online learning due to the impact of the Covid-19 outbreak. This pandemic has affected every global citizen, and Indonesia is not exempt from its effects, with the number of Covid-19 cases being relatively high. The World Health Organization (WHO) declared Covid-19 as a worldwide pandemic in 2019. The shift to online learning has been necessitated by the need to reduce the spread of the virus, which could occur in traditional face-to-face learning settings (Heo et al., 2021; Hodges, 2020). In response to the pandemic, schools and universities worldwide have transitioned to online learning, with most educational institutions in Indonesia following suit. This transition has been essential in ensuring that the educational process is not disrupted, and students can continue to learn amidst the pandemic. However, online learning comes with its unique challenges, including limited access to technology (Lee, 2022; Zhao & Ye, 2020), difficulty in maintaining student engagement and attention, and the need for new pedagogical approaches to teaching and learning.

The outbreak of the Covid-19 pandemic has caused significant changes in various aspects of the world, including the education sector. A pandemic is a disease that spreads in many countries of the world at the same time. The pandemic has forced educators to modify their traditional teaching methods and adopt new ones such as online learning. This has resulted in a fundamental shift from the face-to-face interactions that typically take place in the classroom to virtual meetings using various platforms such as Zoom, Google Meet, and WhatsApp (Almahasees & Qassem, 2021). The integration of technology in the teaching and learning process has increased the reliance on gadgets, which have become an essential tool during the pandemic (Almekhlafy, 2020). The use of gadgets has surged by up to 100%, and there is no longer a limit to bringing them to the college or high school level, as the learning process has shifted to online platforms conducted at home.

In the context of language learning, particularly in the situation of the Covid-19 pandemic, mobile learning has emerged as a suitable and secure approach in the learning environment, particularly in schools that have been heavily impacted. Mobile-Assisted Language Learning (MALL) is a form of independent learning that is supported and facilitated by various types of mobile devices, such as mobile phones, tablets, and pads, which can be utilized in language teaching and learning (Gao & Shen, 2021; Haerazi et al., 2020). This approach has gained significant attention in the field of language education due to its flexibility and accessibility, which allows learners to engage with language learning materials and activities anytime and anywhere. Moreover, MALL is perceived to promote self-directed learning and increase learners' motivation in the language learning process. Thus, the use of MALL can be considered as a viable option to enhance language learning, particularly in the current pandemic situation.

Mobile-Assisted Language Learning (MALL) is a modern approach to language learning that utilizes mobile devices as a means of instruction, particularly for reading skills (Chang et al., 2018; Khazaie & Jalilifar, 2015). As traditional classroom settings have been limited due to the COVID-19 pandemic, MALL provides an alternative way for students to continue their language learning. This study aims to investigate the effectiveness of MALL in improving students' reading skills in conjunction with

metacognitive strategies. Specifically, the study seeks to answer two questions: firstly, how can Mobile-Assisted Language Learning be applied to enhance students' reading skills, and secondly, what are the students' perceptions towards the use of MALL in teaching reading skills? By exploring these questions, the study hopes to provide insights on the effectiveness of MALL in language learning and to inform language educators on the potential benefits and limitations of integrating MALL in their teaching practices.

## RESEARCH METHOD

### Research Design

The study employs the classroom action research (CAR) method to investigate the effectiveness of mobile-assisted language learning in improving students' reading skills in relation to metacognitive strategy. CAR is a systematic inquiry conducted by teachers, school counselors, principals, or other stakeholders in the teaching/learning environment to gather information about how their school operates, how they teach, and how well their students learn (Cohen et al., 2018). The researchers in this study use CAR to address problems in English Language Teaching (ELT) processes and integrate metacognitive strategies to improve students' reading skills. Data is collected by observing classroom activities, specifically the use of mobile-assisted language learning applications in evaluating students' knowledge of the material being taught. The findings are based on four observations conducted by the researchers who are also teachers of mobile-assisted language learning.

In this study, CAR is a problem-solving research approach that aims to improve the teaching and learning activities by going through a cyclical process that involves planning, acting, observing, and reflecting (Haerazi & Irawan, 2019). As action research is an iterative process, it is common for a project to go through two or more cycles. The cyclical nature of this approach is fundamental in identifying and solving problems in the classroom. The planning phase involves defining the problem, setting the objectives, and planning the activities. The acting phase is where the plan is put into action, and data is collected through observation and various data collection methods. The observing phase is the analysis of the data collected, which leads to the identification of the problem and areas for improvement. The reflection phase is where the findings and outcomes of the research are evaluated to improve the next cycle. This approach provides a systematic way of identifying problems in the classroom and improving the quality of teaching and learning activities.

This study employs a collaborative classroom action research design, where the researcher works in collaboration with an English teacher at SMAN 7 Mataram. In this study, the researcher assumes the role of an English teacher who facilitates reading lessons through Mobile-Assisted Language Learning, while the English teacher assumes the role of an observer. The English teacher's role not only involves observing teaching and learning activities during the reading process but also includes actively participating in the collaborative research process, providing assessment, and analyzing data. This collaborative approach enables the English teacher to have a more significant impact on the research process, resulting in a more effective intervention that improves students' reading skills. The collaborative classroom action research design allows for continuous improvement through a cyclical process of planning, acting, observing, and reflecting, providing a framework for addressing problems that arise during the study.

### Research Subjects and Instruments

This study was conducted at SMAN 7 Mataram to explore the learning process during the Covid-19 pandemic. Initially, there were two options for types of learning: an

odd-even system and a two-shift system. The odd-even system involved students attending classes on alternate days based on the odd or even numbers of their absences, while the two-shift system divided students into morning and afternoon shifts. However, currently, the English teaching and learning process at SMAN 7 Mataram has returned to a more conventional classroom setting where all students participate in the same class. The duration of each learning session is set at 8 x 45 minutes. By exploring the learning process, this research can provide insight into how schools can adapt to ensure continuity of education during challenging times, such as the Covid-19 pandemic.

This study utilized multiple research instruments, including observation sheets, interview sheets, and documents. The interview sheet used in this research was an unstructured interview with open-ended questions. According to Cohen (2018), unstructured interviews provide greater flexibility and freedom in open situations. To answer the research problem, the researcher employed only one interview sheet for the students after conducting the interviews. In addition, the observation sheet used in this study can be found in Appendix VII. The use of multiple research instruments enables the researcher to gather diverse and comprehensive data, which can be analyzed to draw reliable conclusions. By using an unstructured interview and observation sheet, this study can provide valuable insights into the learning process and contribute to the improvement of teaching methods.

## **Data Analysis**

This research incorporated both qualitative and quantitative data to gain a comprehensive understanding of the students' reading achievement. The quantitative data were analyzed to support the findings. Specifically, the researcher analyzed students' reading comprehension after they were taught using MALL (Mobile Assisted Language Learning). The aim was to determine whether there was a significant improvement in the students' reading ability after using MALL. The researcher employed the data analysis method echoed by Miles, Huberman & Saldana (2014) who argue that the use of both qualitative and quantitative data analysis methods enables the researcher to develop a more comprehensive understanding of the research problem and the impact of MALL on students' reading comprehension. Thus, this study can contribute to the development of effective language teaching methods that integrate technology.

Data condensation is a crucial process in qualitative research that involves selecting, focusing, simplifying, abstracting, and modifying field notes, interview transcripts, and other empirical materials. Data reduction aims to present the findings in a more concise manner. Researchers select and copy the collected data, including observation sheet documentation, field notes, and interview transcripts, to analyze data related to the application of the Mobile-Assisted Language Learning (MALL) approach and to limit the scope of the problem formulation. Abstracting is another important step that involves summarizing the core, process, and necessary statements to remain within the scope of the research problem. In this stage, the relevant data are selected and focused, then evaluated for quality and adequacy to ensure they align with the research problem. The process of data condensation and reduction enables the researcher to extract the essential information from the raw data and present it in a concise manner. Therefore, the research findings can be easily understood and used to inform decision-making processes.

After evaluating the data, the next step is to simplify and modify it by providing a brief description and categorizing each process in the data that is only related to the application of Mobile-Assisted Language Learning (MALL) to improve students' reading abilities. The data condensation process results in concise descriptions and data categorization that enable the researcher to draw conclusions and determine the necessary

actions. Interpreting the data requires an explanation from the beginning to the end of data collection. In this final step, the researcher concludes on all the data obtained and provides a brief explanation of how the application of MALL improves students' reading abilities and how students respond to the use of this approach in English learning. By doing so, the researcher provides a comprehensive understanding of the impact of MALL on students' reading abilities and how it can be used to enhance English language learning. Therefore, this research can contribute to the development of effective language teaching methods that utilize technology to improve language learning outcomes.

The effectiveness of Mobile-Assisted Language Learning (MALL) can be measured by the students' achievement test scores and their success rate in class. The implementation of MALL is considered effective if the students' test scores in learning reach the minimum passing grade of 75, which is the students' Kriteria Ketuntasan Minimal (KKM) or the Minimum Competence Criteria. Additionally, a success class rate of 80% or more is another indicator of MALL's effectiveness. These criteria serve as a benchmark to assess the effectiveness of MALL in improving students' language skills. By evaluating the effectiveness of MALL, educators can identify the strengths and weaknesses of this approach and make necessary adjustments to enhance students' learning outcomes. Therefore, it is important to regularly evaluate the efficacy of MALL in language teaching to ensure that it is an effective and useful tool for both students and educators.

## RESEARCH FINDINGS AND DISCUSSION

### Research Findings

#### *Data of the Use of Mobile-Assisted Language Learning*

The collection of data is a crucial aspect of any research process, and researchers often employ various techniques to obtain accurate and reliable data. In the context of Mobile-Assisted Language Learning, researchers, who are also teachers, utilize classroom observations as a means of data collection. These observations involve four distinct sessions, during which researchers evaluate the application of the Mobile-Assisted Language Learning approach, specifically the use of smartphones in the classroom, to assess students' understanding of the subject matter being taught. The observations provide a detailed insight into the effectiveness of the approach, and researchers can draw valid conclusions based on the findings. Overall, classroom observations serve as a valuable tool for researchers to gather data and gain a deeper understanding of the various aspects of the learning process in the context of Mobile-Assisted Language Learning.

Table 1. Students' Responses of Using Mobile-Assisted Language Learning in Teaching Reading Skills

No	Question	Answers
1	Have you ever studied using the Mobile-Assisted Language Learning approach before?	<i>Never, but using a cellphone has been done at the beginning of the pandemic</i>
2	Is the Mobile Assisted approach that has been implemented too complicated to apply?	<i>I don't think it's because you only need to use a cellphone, and all classmates have it.</i>
3	Can learning with the Mobile Assisted Language learning approach make it easier to learn English, especially reading?	<i>Yes, it is very easy to learn because it is simple to apply.</i>
4	Does the Mobile-Assisted Language Learning approach improve the	<i>I think my learning has improved, because I have never been interested in learning English with a cellphone before, but through this approach I am</i>

No	Question	Answers
	learning process? If there is an increase, state the reason.	<i>more enthusiastic and want to find out more about learning English.</i>
5	Is learning based on / using a smartphone still feasible to use at this time?	<i>Stay worthy for years to come</i>

Table 2. DA Students' responses of Using Mobile-Assisted Language Learning

No	Question	Answer
1	Have you ever studied using the Mobile-Assisted Language Learning approach before?	Never. The teacher does not provide learning with cellphones.
2	Is the Mobile Assisted approach that has been implemented too complicated to apply?	It's very easy, because it's enough with a cellphone and the internet.
3	Can learning with the Mobile Assisted Language learning approach make it easier to learn English, especially reading?	Yes, it can provide convenience but there are still drawbacks if you don't have a quota.
4	Does the Mobile-Assisted Language Learning approach improve the learning process? If there is an increase, state the reason.	Giving improvement makes it easier for me to understand because the methods are quite simple and this is never done in class.
5	Is learning based on / using a smartphone still feasible to use at this time?	Still feasible and should be even better development.

Table 3. DFK Students' Responses of Using Mobile-Assisted Language Learning

No	Question	Answer
1	Have you ever studied using the Mobile-Assisted Language Learning approach before?	Never, but for the first time hearing the term Mobile-Assisted Language Learning.
2	Is the Mobile Assisted approach that has been implemented too complicated to apply?	It's very simple, just teachers and students use the cellphones they have.
3	Can learning with the Mobile Assisted Language learning approach make it easier to learn English, especially reading?	Yes, I think I can because I understand more easily because I am not limited by LKS books.
4	Does the Mobile-Assisted Language Learning approach improve the learning process? If there is an increase, state the reason.	As long as my brother taught me with MALL, it was easier for me to understand and it was easier to answer test questions.
5	Is learning based on / using a smartphone still feasible to use at this time?	It is very feasible and must be developed again, especially teachers in schools.

## Discussion

The preparation process for learning in the classroom involves several essential steps that a researcher, acting as a teacher, must undertake. Firstly, the researcher must create a comprehensive learning device comprising of a syllabus, lesson plan, and materials (Akiba et al., 2019; Angelini & Álvarez, 2018) that students can access on their smartphones. This step ensures that the necessary resources are ready and available for transfer to students during classroom sessions. Moreover, when utilizing the Mobile-Assisted Language Learning approach, the researcher must also prepare suitable media, such as laptops, cellphones, and LCD projectors, to facilitate effective learning. Additionally, the researcher must develop learning materials that align with the skills that are improved in class and also include test reading questions that students can receive at the end of the learning session. By providing learning materials as the final evidence of data reinforcement in this study, the researcher can effectively evaluate the success of the learning process and the achievement of the intended learning outcomes (Bruen, 2020). Overall, through a well-structured preparation process, the researcher can facilitate an effective and efficient learning experience for the students.

In the context of Mobile-Assisted Language Learning, teachers play a critical role in providing students with instructions on how to use smartphones in the classroom effectively (Heo et al., 2021). Prior to implementing the Mobile-Assisted Language Learning approach, the researcher, who also serves as a teacher, explains the approach to the students in the class. This explanation provides students with a clear understanding of the approach's objectives and how they can use their smartphones or cellphones to access additional knowledge related to the material being taught. The instructions emphasize the importance of students using their devices wisely and only accessing information that is relevant to the subject matter. This approach encourages students to be active learners and take responsibility for their learning experience by using their devices as a tool to enhance their understanding of the material (Chang et al., 2018; Gao & Shen, 2021; Khazaie & Jalilifar, 2015). In summary, the guidance provided by teachers on the use of smartphones in the classroom is crucial to the successful implementation of the Mobile-Assisted Language Learning approach and helps students to achieve better learning outcomes.

The learning process is a critical aspect of any learning setting in this study, and teachers employ various techniques to improve students' understanding and retention of the material being taught (Arshad et al., 2020; Carroll, 2021). In the context of Mobile-Assisted Language Learning, one of the main objectives is to improve students' reading skills. To achieve this goal, teachers emphasize the importance of identifying difficult vocabulary words during the learning process (Arndt & Woore, 2018). Students are encouraged to use mobile dictionaries, which are readily available on their smartphones, to overcome any limitations in their vocabulary (Baiq Sumarni et al., 2022; Haerazi et al., 2020). In this study, the use of mobile dictionaries empowers students to take charge of their learning experience and enables them to access information quickly and conveniently. This approach encourages active participation and engagement from students (Heo et al., 2021), resulting in a deeper understanding of the material being taught (Rodríguez-Fuentes & Swatek, 2022). Moreover, the use of mobile dictionaries facilitates the development of essential reading skills that are essential for academic and professional success. In summary, the use of mobile dictionaries during the learning process is an effective way to enhance students' reading skills and improve their overall learning outcomes.

In this study, MALL is an innovative approach that empowers students to access and explore materials related to the subject matter via the internet with metacognitive activities. The use of the internet as a resource during the learning process provides

students with the opportunity to supplement their understanding of the material beyond what is taught in the classroom (Lazarinis et al., 2020; Son & Park, 2012). The approach is especially beneficial for students who struggle with reading skills or are unfamiliar with the subject matter. Moreover, it helps students to overcome the limitations of material delivery and provides them with an additional source of information. As a result, students are encouraged to take a more active role in the learning process (Almekhlafy, 2020; Chiang et al., 2022), leading to improved learning outcomes (Lee, 2022). The approach of using the internet as a resource is also helpful in covering the gaps in students' reading ability, enabling them to achieve a more comprehensive understanding of the material. In summary, the use of the internet in the MALL approach provides an effective solution to the problem of students' reading skills and facilitates their learning by offering a diverse range of resources to explore.

In the MALL learning activities, providing easy access to learning materials is crucial in facilitating students' learning process. In addition to allowing students to explore materials via the internet, researchers and teachers provide additional learning materials that can be easily downloaded and saved onto their smartphones (Chang et al., 2018; Haerazi et al., 2020). To achieve this goal, barcodes are available on the material slides which students can scan to access the learning materials. This approach ensures that students have easy access to learning materials at all times, both inside and outside of the classroom, online or offline. The provision of easily accessible learning materials empowers students to take responsibility for their learning, promoting active participation and engagement in the learning process (Alsuraihi, 2022; Bérešová & Micallef, 2020). Furthermore, it facilitates the development of essential skills such as information processing and retention, which are vital for academic and professional success (Zhang & Zhang, 2019; Zhao & Ye, 2020). By repeatedly reading the material, students can overcome the problem of reading difficulties and improve their ability to process and remember information (Crosson & Lesaux, 2010). In summary, the provision of easily accessible learning materials via barcodes is a valuable component of the MALL approach, promoting active engagement and facilitating the development of critical skills.

At the end of the learning activities, teachers did an assessment. Assessment is an integral part of the learning process, and it is essential to evaluate students' understanding of the material taught (Albiladi, 2018; Harding et al., 2015). In the MALL approach, test questions are administered to assess the extent of students' learning progress. At the end of each lesson or research, students are required to answer test questions, which are provided via a barcode. Upon scanning the barcode, students are directed to a Google Form where they can fill in their data and answer the questions provided. The test questions are designed to evaluate students' comprehension and mastery of the material, as well as to measure their improvement in class. Once all the data has been collected, the researcher calculates the scores achieved by each student to support the research data. The scores obtained from the test questions are a vital source of information for evaluating the effectiveness of the MALL approach in improving students' reading skills. The researcher can use this data to identify areas of weakness and strengths, and to make necessary adjustments to improve the learning process. In conclusion, the use of test questions to evaluate students' learning progress is a crucial component of the MALL approach, providing valuable data to support research and improve the learning process.

The implementation of Mobile-Assisted Language Learning (MALL) during the learning process has provided significant findings that support the researcher's classroom action hypotheses. As stated in the previous paragraph, the research problems such as defective use of effective reading strategy, limited vocabulary, lack of familiarity with subject matter, and difficulties in processing or remembering information can be addressed

through the implementation of MALL. The solutions provided not only addressed the problems related to reading ability but also yielded valuable research data. The students' test scores in the table showed that their reading abilities improved significantly, as evidenced by their achievement of the predetermined class graduation target of 80%. These results indicate that the use of MALL can be an effective solution to improve students' reading abilities (Gao & Shen, 2021; Khazaie & Jalilifar, 2015) and address the challenges they face in the classroom. Moreover, these findings can contribute to the development of effective language teaching strategies that leverage the benefits of technology.

The results of interview activities conducted by the researchers regarding the implementation of Mobile-Assisted Language Learning (MALL) approach in the classroom. The findings indicate that while students were familiar with the use of mobile phones or smartphones, they were not aware of the specific term "MALL". Despite having access to these devices, the researchers discovered that the initial use of the MALL approach was ineffective and not optimal. Students reported encountering difficulties in navigating the various learning materials and tools available on their devices. These challenges hindered the learning process, causing students to lose motivation and interest. The results of this interview suggest that further research is needed to identify strategies for improving the effectiveness of MALL in language learning contexts.

The implementation of Mobile-Assisted Language Learning (MALL) during the research process, according to the students who were interviewed, was not difficult to implement. They suggest that the effective use of technology should be adopted by teachers in this era that requires a variety of technological tools to enhance teaching and learning. Furthermore, students reported an improvement in their English language reading skills as a result of the implementation of MALL. In response to the last question, students offered suggestions that MALL or smartphone-based learning needs to be developed further by teachers in schools to produce optimal outcomes for students. The findings suggest that MALL is a viable tool for improving language learning, but further development is required to ensure its optimal utilization.

## CONCLUSION

In senior high schools, the reading ability of 11th grade students presents numerous difficulties and hindrances that impede the teaching and learning process, particularly amidst the COVID-19 pandemic. Preceding the study, researchers formulated a table delineating the students' reading problems. Over the observation period, amidst the pandemic, researchers noted that learning failed to operate optimally owing to teachers' inadequacy or deficiency in implementing mobile-based learning to students. This factor became an indispensable component for learning, resulting in a need for enhancement, especially in students' reading aptitude.

The implementation of Mobile-Assisted Language Learning integrated with metacognitive strategies was able to enhance the learning experience for students. The researchers and teachers undertake several essential steps to prepare comprehensive learning devices and materials that align with the skills that will be improved in class. Additionally, they provide guidance to students on how to use smartphones in the classroom effectively and encourage the use of mobile dictionaries to improve reading skills. The use of the internet in the MALL approach provides an effective solution to the problem of students' reading skills and facilitates their learning by offering a diverse range of resources to explore. Furthermore, the provision of easily accessible learning materials via barcodes is a valuable component of the MALL approach, promoting active engagement and facilitating the development of critical skills. Finally, teachers administer

test questions at the end of each lesson or research to evaluate students' comprehension and mastery of the material and to measure their improvement in class.

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