CHAPTER 2
LITERATURE REVIEW

This chapter provides a concise review of the research and concepts related to this study. Section A examines the fundamental concepts of Mobile Assisted Language Learning (MALL) within the framework of teaching English as a Foreign Language (EFL), explaining its definitions, principles, and indications. In this way, part B examines the application of MALL in improving pronunciation acquisition. This part examines several research and ideas that demonstrate how MALL might encourage pronunciation practices.

A. Conceptual Framework of the study: Mobile Assisted Language Learning (MALL)

The concept of Mobile Assisted Language Learning (MALL) was introduced by Stockwell in 2022. It implies the utilization of mobile technology to encourage language acquisition, especially in contexts that allow for both formal and casual learning. In formal environments, MALL can be used in educational contexts, such as through applications that assist students in refining their pronunciation. Students could independently utilize mobile technology outside of class, such as employing language learning applications during their relaxation time. This viewpoint demonstrates that MALL encourages personalized and autonomous learning, rendering it a valuable and effective approach for various language acquisition contexts. This is often particularly significant within the modern digital era, where students must be capable of adapting to novel circumstances. MALL empowers students to engage in self-directed learning through available technology, reducing concerns regarding to lesson plans and teacher accessibility (Stockwell, 2022).

Furthermore, Stockwell (2022) emphasized that MALL empowers students to access language resources at any time and from any places. This demonstrates that students are not required to acquire a language within a formal classroom setting, they can engage with it continuously in their ordinary lives. For example, students may utilize digital dictionaries, view guidelines videos,

or employ phonetic transcription applications such as ToPhonetics to improve their pronunciation skills. MALL empowers students to obtain languages in a more adaptable, continuous, and personalized way.

Having established the capabilities of MALL in both formal and casual settings, study should presently examine its application in the acquisition of English as a Foreign Language (EFL). MALL is especially beneficial for improving language skills, such as pronunciation. MALL provides versatile devices outlined to improve the satisfaction of learning. Buyukkarci (2023) expressed that the utilization of mobile technology in EFL learning empowers students to engage with pleasant media, such as pronunciation applications that are accessible at their comfort. MALL enhances language acquisition while simultaneously rendering the learning handle more enjoyable and engaging.

One concrete example of the application of MALL in improving pronunciation is the ToPhonetics application, which according to Fitria (2023) the ToPhonetics application is able to convert English text into phonetic transcription based on the International Phonetic Alphabet (IPA). This application is very helpful for students in recognizing and producing English sounds correctly. Through the phonetic transcription feature, users can see how words should be pronounced, so that they understand their phonological representation. This interactive component provides students the opportunity to practice independently. They may repeat the pronunciation exercises as much as essential until they are confident with their accuracy. Repeated practice is fundamental for developing appropriate pronunciation habits and improving the precision and fluency of English speech.

MALL encourages access to learning materials for students and enables them to tailor their educational experiences according to their individual pace and requirements. This reinforces the argument that MALL, as Stockwell (2022) expressed in the concluding section, is an exceptionally beneficial approach in the modern digital landscape. MALL empowers students to learn and memorize at their own pace and in their own way, while at the same time

providing an opportunity to acquire practical abilities such as pronunciation, which poses a significant challenge for EFL students.

Mobile Assisted Language Learning (MALL) is established on three central concepts: accessibility and flexibility, personalization, and interactivity (Stockwell, 2022). It is appropriate in both formal and casual educational contexts and may be adjusted to meet the requirements of each student. These three concepts are significant for creating a learning environment that is related, engaging, and customized to each student's requirements.

The primary concept of accessibility and flexibility is that learning should be promptly accessible at any time and from any location (Stockwell, 2022). Burston (2014) states that mobile technology facilitates language acquisition by disassembling boundaries, thus eliminating the necessity for classroom-based instruction. Students can include learning activities into their leisure time due to their convenient access. This is in line with the findings of Wang and Smith (2013) which show that learning expectations through mobile devices increase the consistency of independent learning. Kukulska-Hulme (2016) also emphasized that learning becomes more natural when students can learn in the context of their own choice, either synchronously or asynchronously.

Second, the principle of personalization in MALL refers to the ability of learning applications to adapt materials and delivery methods to the needs, abilities, and preferences of each student (Stockwell, 2022). He also stated that personalization in the context of MALL can be done through selecting relevant topics, setting difficulty levels, and providing real-time feedback. With this principle, students feel more involved and motivated because they feel their learning experience has personal relevance. Research by Viberg and Grönlund (2013) shows that students tend to show higher engagement when they feel they have control over the content and learning strategies used. Personalization is also important in supporting inclusive learning, as it accommodates different learning styles and skill levels between individuals.

Third, the principle of interactivity emphasizes the interaction between the user and the system, including direct feedback (Stockwell, 2022). Interactivity here includes various forms of interaction between students and content, with instructors, and even with fellow students. Kukulska-Hulme (2016) suggests that interactive features such as pronunciation exercises with direct feedback can increase student engagement in learning. Furthermore, according to Gael and Elmina (2021), instant feedback features available in applications such as pronunciation error detectors allow students to immediately find out and correct their mistakes.

However, from the three principles offered by Stockwell (2022), the researcher only used the principle of accessibility and flexibility, because the ToPhonetics application provides open and flexible access for students to learn pronunciation anytime and anywhere. While the other two principles were not used because they were less relevant to the features of the application:

1. Personalization was not selected because the application does not provide materials or recommendations that are automatically adjusted based on the user's abilities. The use of British and American accents is available, but it is not enough to represent the principle of personalization systematically.
2. Interactivity was also not selected because the application does not have a real-time feedback feature or automatic evaluation of the user's pronunciation, which is the essence of this principle.

Although the principles of accessibility and flexibility provide a strong foundation, these principles alone are not sufficient to answer the research question regarding the benefits of using ToPhonetics in pronunciation learning. Therefore, the researcher also adopted the framework from Kasimi (2023) which developed MALL success principles into three aspects, namely student involvement, skill development, and autonomy.

First, student involvement indicates the level of active participation and motivation of students (Kasimi, 2023). Student involvement reflects how active and motivated students are in participating in the learning process. In the context of mobile technology assisted language learning, student involvement increases

significantly because students feel more connected to the material through various interactive features. Kukulska-Hulme (2016) showed that the use of applications such as ToPhonetics or Duolingo allows students to learn in a more flexible, enjoyable, and adaptable way to their personal schedule. Furthermore, Traxler (2018) emphasized that mobile technology provides contextual and authentic learning, which means it can increase students' intrinsic motivation. When students feel that learning is relevant to their lives and easily accessible, their emotional and cognitive engagement increases.

Second, skill development describes real developments in language skills including pronunciation (Kasimi, 2023). He also describes skill development as a measurable improvement that occurs when students are consistently exposed to targeted language practice. This includes enhancements in areas such as pronunciation accuracy and fluency, which can be observed through students' performance over time. This theoretical view is reinforced by empirical research that shows how digital tools can facilitate pronunciation development. One notable example is the study by Bashori et al. (2022), which demonstrated that the use of ASR-based applications can significantly improve students' pronunciation accuracy because it allows them to practice without limits. Not only that, but the structured design of the application enables repeated exposure to the same pronunciation exercises, thereby strengthening students' retention and mastery of the material. In addition, in the context of teaching pronunciation, MALL technology provides phonetic visualizations that help students understand the relationship between letters and sounds more concretely (Godwin-Jones, 2017).

Third, autonomy refers to their own learning process in terms of time, methods, and resources used (Kasimi, 2023). One of the advantages of MALL is its ability to encourage learning autonomy. Students can determine when and how they want to learn without having to wait for the teacher's process. Huang (2019) stated that students who have the freedom to manage their own time and learning strategies tend to show significant improvements in pronunciation accuracy and fluency. In addition, McCrocklin (2016) emphasized that the

presence of ASR technology also supports student autonomy by providing accurate and easily accessible tools.

In the context of this study, the two principles of Kasimi that were chosen were skill development and autonomy, because:

1. Students experienced improved pronunciation from ToPhonetics features such as phonetic transcription and audio playback.
2. Students carried out learning independently, determining the time, method, and pronunciation of the material they wanted to practice.

Meanwhile, leaner involvement was not used as the main framework, although it appeared implicitly in the findings. This is because the focus of the study lies in the results of using the application (pronunciation development), not on the level of involvement or internal motivation of students psychologically, so this principle is considered less of a priority to answer the focus of the study.

The application of these principles is summarized to provide a clearer overview of how MALL was applied in this study. The following table presents a concise mapping of which MALL principles were selected or not selected, along with their reasons and relevance to the development of pronunciation.

Table 1. Application of MALL Principles in this research

No	Principle	Status	Reason and Relevance
1.	Accessibility and Flexibility (Stockwell, 2022)	Selected	ToPhonetics can be accessed through various devices without special installation, anytime and anywhere without space and time limitations.
2.	Personalization (Stockwell, 2022)	Not Selected	The application does not yet provide adaptive features that automatically adjust to user capabilities, so it does not support a personal approach.

3.	Interactivity (Stockwell, 2022)	Not Selected	There is no direct feedback or automatic correction system, so it does not reflect active interaction between the user and the system.
4.	Student Involvement (Kasimi, 2023)	Not Selected	Although it appears implicitly, the research does not focus on the level of psychological engagement of students, but rather on the benefits resulting from using the application.
5.	Skill Development (Kasimi, 2023)	Selected	Phonetic transcription and audio playback features support students in perfecting articulation and understanding sound structures more precisely.
6.	Autonomy (Kasimi, 2023)	Selected	Students can learn independently without relying on teachers, managing time, methods, and pronunciation of materials according to their needs.

Thus, the researcher used the MALL concept by Stockwell (2022) because this approach comprehensively reflected the needs of flexible and independent modern language learning, and strengthened it with the framework from Kasimi (2023) which focused on skill development and learning autonomy. With this combination, this conceptual framework helped the researchers analyze how the use of the ToPhonetics application could effectively support the students' pronunciation learning process.

B. Integrating MALL in Learning Pronunciation

Mobile-Assisted Language Learning (MALL) has developed as an effective approach for language instruction, especially for English as a Foreign Language (EFL) learners looking for to improve their pronunciation. The primary advantage is its adaptability and accessibility, empowering students to enhance their language abilities beyond the classroom (Stockwell, 2022). Students can utilize MALL to acquire languages at their comfort, aligning with the modern learner's demand for personalized education (Kukulska-Hulme, 2016). Applications such as ToPhonetics provide students with phonetic transcriptions and pronunciation models that assist in maintaining appropriate pronunciation habits throughout time (Fitria, 2023). These devices are essential for bridging the gap between students' academic learning and the need of applying that knowledge in real-life circumstances.

One of the widely recognized MALL tools for pronunciation development is ToPhonetics, a phonetic transcription application that converts English text into IPA symbols. According to Aulia et al. (2023), ToPhonetics is highly beneficial for university students as it facilitates practical and efficient transcription of English phonemes. The app was developed by Mu-sonic Ltd. and released in 2014, with Dmitry Yahns as its lead developer. It allows users to choose between British or American English transcriptions, depending on their pronunciation goals. Furthermore, Yusuf (2019) highlighted that the app's simple interface and ease of use make it a preferred tool over traditional phonetic dictionaries, as it streamlines the pronunciation learning process. It preserves text structure, including punctuation, and offers audio playback and stress markers, aiding learners in achieving clearer pronunciation.

However, some limitations have been noted. As discussed by phonetic experts in communities such as Reddit (2023), ToPhonetics employs broad phonemic transcription, likely referencing the CMU Pronouncing Dictionary. This may reduce the accuracy of nuanced dialectal differences. Despite this, the app is still widely considered effective for modern EFL learners who seek accessible, fast, and flexible pronunciation support.

To successfully utilize MALL for pronunciation acquisition, both teachers and learners can take advantage of digital tools that promote repeated exposure to accurate language input. One widely implemented feature is Automatic Speech Recognition (ASR), which helps learners refine their pronunciation through real-time detection and correction of errors. While many MALL-based applications use ASR to provide automated feedback, tools like ToPhonetics stand out by offering phonetic transcription as a visual aid. Instead of relying solely on audio correction, ToPhonetics encourages learners to analyze the International Phonetic Alphabet (IPA) representations of words, drawing attention to word stress, vowel and consonant shifts, and other phonological details that are essential for building precise pronunciation skills (Godwin-Jones, 2017).

Kasimi (2023) states that ability improvement in MALL is proven by a significant improvement in students' linguistic abilities, including their pronunciation and auditory comprehension. Students could utilize ToPhonetics to access resources that encourage autonomous practice and maintain up consistency, which is significant for improving their pronunciation (Dai& Wu, 2023). App features such as accent selection and phonetic visualization allow users to analyze and model pronunciation repeatedly based on their preferences, thereby improving fluency and accuracy (Alharthi, 2024). This reflects MALL's adaptability in supporting the diverse needs and learning styles of EFL students.

Despite the advantages of MALL and ASR technologies in pronunciation learning, there is little research that focuses specifically on the use of ToPhonetics as a stand-alone phonetic transcription tool. Previous studies have highlighted the benefits of various mobile-based applications such as Elsa Speak or Speechling in improving pronunciation accuracy (Bashori et al., 2022; Sun, 2023), but there is little research investigating how students perceive the functionality and usability of ToPhonetics. As Fitria (2023) notes, although the tool offers potential in supporting pronunciation development, its actual effectiveness remains under-explored in empirical studies.

Therefore, this study seeks to fill this gap by exploring Indonesian EFL students' experiences in using the ToPhonetics app for pronunciation practice. By revealing the benefits that students perceive from the app, this study contributes to the growing MALL literature while also offering practical insights for educators and curriculum developers who wish to integrate mobile tools into pronunciation teaching.