Analysing and Evaluating Current Mobile Applications for Learning English Speaking

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Abstract

With the mobile technologies being gradually integrated into learning and the evolutionary development of smartphone, the market of educational mobile apps, especially for second/foreign language learning, has been rapidly growing. However, research on using mobile apps to foster English language learning remains scant. The aim of this study is to investigate the relevant learning theories underpinning the current mobile apps for English speaking learning, the pedagogic features of these apps, and the evaluations of the apps mainly from the learners' perspective.

To examine the current mobile apps for English speaking learning, 34 apps were first searched and selected on Google Play. These apps were then analysed according to the analytical framework of MapALL established in this study. After that, 5 representative apps were identified for further evaluation. Open-ended questionnaires were sent to five participants and group interview was conducted to collect the learners' feedback on the chosen apps and their perceptions of mobile apps-assisted language learning experiences.

The novel concept of MapALL and an analytical framework have been firstly proposed in this study. The results have shown that behaviourist learning theory is
the dominant theory underpinning the current mobile apps for English speaking learning, considering that drill and practices are the most popular activities in these apps. Five categories were identified for the English-speaking apps, namely pronunciation, conversation, video lesson, reference, and authentic content.

Regarding the learners' feedback, both the users' online reviews and the research participants' comments have shown their positive attitudes toward using current mobile apps for English language learning, although a couple of technological limitations still exist.

In summary, mobile apps have encouraged exciting opportunities for personalised and learner-centred environments with flexible access to learning materials anytime and anywhere. The novel and enjoyable ways of learning would have a great potential to increase learning motivation and encourage lifelong learning habits. More research will be needed in the young field of MapALL in order to suggest the right direction to effective language learning.
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1 Introduction

1.1 Introduction

This chapter provides an overview of the research background, statement of the problem, and the significance of the research, followed by the objectives of the research and research questions. Finally, the outline of the dissertation is presented.

1.2 New Ways of Learning

Nowadays mobile technologies have been gradually integrated into learning. The wide use of smartphones and other portable and wireless devices has been significantly changing the ways of learning in many contexts, including language learning (Kukulska-Hulme, 2009). Numerous mobile applications (apps) have been developed to support different aspects of second/foreign language learning, including listening, speaking, reading, writing, vocabulary, and grammar. Although these apps, usually with sound, images, and interactions, are certainly appealing to learners, the second language pedagogy that underpins these resources and activities should never be ignored.
Until recently, however, research on using mobile apps to foster English language learning remains scant. No in-depth studies have been carried out to investigate the features of current English-learning mobile apps in relation to the existing learning theories and paradigms. And the evaluation of using mobile apps for English learning from language learners' perspective is still at the early stage. Therefore, this study is intended to investigate how we might draw on existing learning theories to help us analyse and evaluate the current mobile apps for learning English.

Speaking skills and Pronunciation is one of the most challenging and demanding aspects of language for learners to master. However, speaking activities are often compromised due to time constrains in the classroom (González, 2012). As a result, students' inability to express themselves has a negative impact on their confidence and enthusiasm (Tuttle, 2013). Mobile apps seem to be the ideal support for speaking learning. It could provide private, stress-free environments which allow unlimited tries until learners feel confident. Hence, in this study, I will narrow down my research scope and focus on mobile apps for learning English speaking when analysing and evaluating the current mobile apps for language learning.
1.3 Aims of the Study

This study explores the current mobile apps for learning English as a second/foreign language, specifically for English speaking learning. The primary research aim is to investigate how mobile apps could assist English language learning, considering activities and practices against existing learning theories and paradigms. The specific aims of this paper are to identify the learning theories that are relevant to employing mobile apps for English language learning, to identify the different types of current mobile apps for English speaking and analyse their pedagogic features, and to evaluate a set of exemplary English speaking apps demonstrating their effectiveness from the users' perspective.

1.4 Research Questions

Four research questions are addressed in this study: 1) What are the pedagogical features of the current mobile apps for learning English speaking? 2) Which learning theories are most relevant to these apps? 3) What are the different types of English speaking apps according to their pedagogic features? 4) What are the strengths and weaknesses in utilising these mobile apps for effectively learning and practicing English speaking from users' perspective?
1.5 Conclusion

In this first chapter, I have established the overview of the study, including introduction, background of the study, aims of the study, research questions, significance of the study, and the structure of the dissertation. The following chapters are intended to describe the details of the study. Chapter Two contains definitions of important terms and a brief literature review. Chapter Three is a description of the research methodology for this study. Detailed findings of the study are presented in Chapter Four. This is followed by the discussions of the findings with respect to the research questions and the literature. Chapter Five concludes the study with a proposal for future research and follow up action.
2 Literature Review

2.1 Introduction

This chapter provides a review of relevant literature in the field of mobile learning and mobile-assisted language learning (MALL). It consists of four major parts. The first part of the literature review focuses on the concept of mobile learning. The second part seeks to identify the existing learning theories in relation to mobile learning. After that, the concepts of mobile-assisted language learning (MALL) and its difference to computer-assisted language learning (CALL) are reviewed. Examples of analysis and evaluation of the implementation of MALL and current mobile apps for language learning are also examined.

2.2 The Concept of Mobile Learning

No one could deny the fact that the whole world is going mobile. The widespread ownership of mobile phones and other portable and wireless devices has been dramatically changing our learning, communicating, and even life styles. Use of these mobile technologies turns out to be well aligned with educational goals such as extending learning opportunities, improving student achievement, supporting differentiation of learning needs, goals and learning styles, and deliver authentic
learning materials to students who would otherwise have no access to them
(Kukulska-Hulme, 2009). Although it seems to be ubiquitous, there is yet no agreed
definition of 'mobile learning' or 'm-learning' (Kim & Kwon, 2012;
Kukulska-Hulme, 2009). It is not a stable concept because the field of mobile
learning is undergoing rapid evolution, with increasing availability of new and more
d sophisticated handheld devices on the market. Another reason is that the current
interpretations of 'mobile' are not explicit enough (Hockly, 2012; Kukulska-Hulme,
2009). Nevertheless, many researchers have highlighted the 'mobility' of mobile
learning (El-Hussein & Cronje, 2010; Hockly, 2012; Kim & Kwon, 2012;
Kukulska-Hulme, 2009; Kukulska-Hulme & Shield, 2008; Sharples,
Armedillo-Sánchez, Milrad, & Vavoula, 2009).

With regard to technologies, 'mobile' generally means personal and portable
mobile learning as learning with wireless devices such as smartphone, personal
digital assistant (PDA), iPod, palmtop, laptop, etc. Although we could argue that
mobile learning involves the use of any portable learning materials, for example,
books, portable radios and DVD players, mobile learning has usually been anchored
on the use of mobile technology (Kukulska-Hulme & Shield, 2008; Sharples et al.,
The type of mobile devices plays an important role in teaching and learning. Research has shown that more than three quarters of all mobile devices used in educational contexts are mobile phones and PDAs (Wu et al., 2012).

More recent thinking of mobile learning has emphasized the wider context of learning as part of a mobile lifestyle rather than only focusing on technology aspect. Kukulska-Hulme and Shield (2008) have referred mobile learning to either formal or informal learning mediated via handheld devices and potentially available anytime anywhere. As Sharples et al (2009) suggest mobile learning consists of a combined experience as they learn by means of mobile devices: mobility in physical space, mobility of technology, mobility in conceptual space, mobility in social space, and learning dispersed over time. By mobility in physical space, they mean the spatial movement of learners. People can learn anywhere without limitations on location. Regarding mobility of technology, Sharples et al not only indicate that the tools and resources are portable but also mention the transfer attention across devices. This is supported by Kukulska-Hulme's (2009) observation that learners tends to move between using laptop computers, mobile phone, and even touch-screen displays in public places. Kukulska-Hulme even confidently predicts that there would be no need to take a mobile device when technology becomes an integral part of our
surroundings. With respect to mobility of conceptual space, Sharples et al (2009) explain that learning themes and topics can shift depending on learner's personal interest or commitment. In addition, learning may occur in various social spaces like in the office or classroom context. Finally, according to Sharples et al, mobile learning dispersed over time in either formal or informal learning contexts.

El-Hussein and Cronje (2010) have proposed a compendious tripartite division of mobility based on the current literature: mobility of technology, mobility of learners, and mobility of learning. The mobile technology referred to by El-Hussein and Cronje is mainly advanced mobile devices, including smartphones, hand-held computers such as PDAs. Equipped with Wireless Application Protocol (WAP) and Wi-Fi capacities, these devices can deliver learning instruction and materials through the Internet. Therefore, learners can access to learning content at anytime, anywhere. Most popular functions in mobile phones also enable users to perform a variety of social interactions like communication (phone, short messaging service, email), organization (calendar dairy, memo, address), and relaxation (camera, movies, music, games), etc. (Trinder, 2005).

Furthermore, mobile learning increases the mobility of learners. With portable and personal mobile devices, learners could be engaged in more flexible, accessible
and personalised learning practices without constraint on places. Mobile learning devices are capable to greatly improve learners’ sense of individuality and community in addition to their motivation to learn through actively participating in various social, collaborative and cooperative activities. Learners could enjoy the ownership of their learning and a certain amount of freedom and independence (El-Hussein & Cronje, 2010; Uden, 2007).

Finally, mobile learning enhances the mobility and dynamism of the learning processes and the flow of information. New educational modes such as personalised, learner-centred, situated, collaborative, ubiquitous, and lifelong learning can be achieved through mobile learning (El-Hussein & Cronje, 2010; Sharples, Taylor, & Vavoula, 2010). The main attributes of mobile learning are identified as personalised, situated, authentic, spontaneous and informal learning (Kukulska-Hulme, 2009). Figure 1 shows the convergence of the concept of mobile learning based on the current literature reviewed in this section. The figure is originally devised in this study.
2.3 Learning Theories in Relation to Mobile Learning

As the consequence of increasing interest in mobile learning, a large amount of projects in mobile learning applications have been initiated. To investigate how these projects are underpinned by different learning theories and paradigms will gain educators and technical developers a deeper understanding of mobile learning from a pedagogical perspective. The existing learning theories in relation to mobile learning include behaviourism, cognitivism, constructivism, situated learning, problem-based learning, context awareness learning, collaborative learning, lifelong learning, and informal learning, etc. (Keskin & Metcalf, 2011). Naismith et al (2004) have succinctly identified six main theories and areas of learning relevant to learning with mobile technologies. They are behaviourist, constructivist, situated, collaborative, informal and lifelong learning, and learning and teaching support.
In the behaviourist paradigm, learning occurs and facilitated through the appropriate reinforcement of an association between a particular stimulus and a response. In mobile learning, the association happens when the mobile devices present learning materials, obtain responses from learners, and provide appropriate feedback which forms the reinforcement (Naismith et al., 2004; Smith & Ragan, 2005). This paradigm adopts a transmission model that information is transmitted from tutor (the mobile devices) to the user for learning to take place. Despite the limited displays of mobile devices, there is a popularity of using mobile devices as a medium to deliver learning materials. In language learning application through mobile phones, 'drill and feedback' is one of the most popular activities (Keskin & Metcalf, 2011). Other activities could be test, practices, quiz, etc. Some scholars argue that behaviourist may encourage learners to only repeat and memorise learning content. However, reinforcement could stimulate learners to respond actively rather than receiving information passively (Gray & MacBlain, 2012).

With regard to constructivist learning, learners actively construct new concepts or ideas based on their previous and current knowledge (Bruner, 1966). Learners are encouraged to be active constructors of knowledge. Learning is facilitated when challenging learners with problems or conditions to be solved rather than delivering
direct information (Kadirire, 2009). Mobile devices enable learners to be embedded in a realistic context and provide them with supporting tools at the same time (Naismith et al., 2004). Learners then actively construct their own knowledge and build interactive models. The constructivist paradigm focuses on context and content dependent mobile learning such as questions for exploration and problem solved and decision making applications, as well as collaboration and interaction in mobile learning like communication via mobile phones or interaction between learners (Keskin & Metcalf, 2011).

Situated learning refers to learning within an authentic context and culture. It emphasizes that learning is not merely acquiring knowledge by individuals, but through a process of social participation. The situation is of important effect on the learning process (Brown, Collins, & Duguid, 1989). One strand of situated learning paradigm that is particularly relevant to mobile learning is context-aware learning. Because mobile devices are portable and available in different contexts, learning activities can be well enhanced by those contexts (Naismith et al., 2004). Taking the museum and gallery sector as a representative example, visitors can access additional information about displays and exhibits depending on their location. Situated learning paradigm depends on social context and social participant. It focuses on
activities like authentic domain activity, situated mentoring, workplace learning, etc. (Keskin & Metcalf, 2011).

Collaborative learning is another learning theory that considered to be linked to mobile learning (Naismith et al., 2004). Collaborative activities promote, facilitate, and enhance learning through social interaction and collaboration between students (Keskin & Metcalf, 2011). Mobile devices enable learners to not only share data and messages between devices, but also communicate via a shared data network. Another theory that is specifically relevant to collaboration using mobile devices is conversation theory, which describes learning in terms of conversations between different systems of knowledge (Sharples, 2002). Effective learning occurs when learners can converse with each other and share their knowledge of the world. For example, if two people can make sense of each other's knowledge by mutual communication, they would be able to share their understanding of the world and learning happens simultaneously. However, mobile technologies may have no difficulty in demonstrating ideas or providing advice at the level of descriptions, there is a limitation for them to explore students' misconceptions for offering practical advice at the level of actions. Nevertheless, the technology with no doubt can provide a shared learning environment for learners to communicate with other
individuals by mobile phones or e-mail (Naismith et al., 2004).

In addition, informal and lifelong learning paradigm refers to activities that support learning outside a dedicated learning environment and formal curriculum (Naismith et al., 2004). Research on informal and lifelong learning points out that learning happens constantly and is influenced by our surroundings. Informal learning may be accidental and learners may even not recognise it as learning. An example could be a person focusing on a task or decision in daily life, but he/she may be acquiring information and learning knowledge at the same time without realizing it (Sharples, 2000; Vavoula, 2004). Research on informal learning has demonstrated that most of adults' learning happens outside formal education (Livingstone, 2001). Therefore, the portable and personal nature of mobile devises provide them the considerable potential to support informal and lifelong learning which is blended with everyday life (Naismith et al., 2004).

Lastly, the use of mobile technology provides learning and teaching support for coordinating learners and learning activity resources and for assisting with administration duties more generally. Examples include helping teachers for attendance reporting, reviewing student marks, or effective personal organization (Naismith et al., 2004). These functions lead to positive rewards and could support
learning activities as a whole.

The previous paragraphs reviewed the main learning theories and paradigms applied in mobile learning. They are behaviourist learning, constructivist learning, situated learning, collaborative learning, informal and lifelong learning, and learning and teaching support as summarised in Table 1. These selected learning theories and paradigms are by no means mutually exclusive, but could provide a general theoretical background for analysing and evaluating the current mobile apps for English language learning in the following chapters.
Table 1. A Summary of Learning Theories and Paradigms in Relation to Mobile Learning

<table>
<thead>
<tr>
<th>Themes</th>
<th>Definitions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviourist learning</td>
<td>Learning occurs and facilitated through the appropriate reinforcement of an</td>
<td>Information and content delivery: drill and feedback, test, practices, quiz, etc.</td>
</tr>
<tr>
<td></td>
<td>association between a particular stimulus and a response.</td>
<td></td>
</tr>
<tr>
<td>Constructivist learning</td>
<td>Learners actively construct new concepts or ideas based on their previous</td>
<td>Questions for exploration, problem solved and decision making applications,</td>
</tr>
<tr>
<td></td>
<td>and current knowledge.</td>
<td>interaction between learners, communication via mobile phones, etc.</td>
</tr>
<tr>
<td>Situated learning</td>
<td>Learning occurs within an authentic context and culture, and through a</td>
<td>Authentic domain activity, situated mentoring, workplace learning, etc.</td>
</tr>
<tr>
<td></td>
<td>process of social participation.</td>
<td></td>
</tr>
<tr>
<td>Collaborative learning</td>
<td>Learning is promoted, facilitated, and enhanced through social interaction</td>
<td>Active participation in social context, communication between peers via</td>
</tr>
<tr>
<td></td>
<td>and collaboration between students.</td>
<td>mobile phones, etc.</td>
</tr>
<tr>
<td>Informal and lifelong learning</td>
<td>Learning occurs outside a dedicated learning environment and formal</td>
<td>Mobile information resources, mobile website, etc.</td>
</tr>
<tr>
<td>Learning and teaching support</td>
<td>curriculum.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support for coordinating learners and resources for learning activities and</td>
<td>Effective personal organization, attendance reporting, reviewing student</td>
</tr>
<tr>
<td></td>
<td>assisting administration duties more generally.</td>
<td>marks, etc.</td>
</tr>
</tbody>
</table>

2.4 Mobile-Assisted Language Learning

Since the term of mobile-assisted language learning (MALL) was first introduced, using mobile devices to support language learning has been a burgeoning subdivision of both mobile learning and computer-assisted language learning (CALL) (Chinnery, 2006). In their overview paper, Kukulska-Hulme and Shield (2008) note that using portable and personal devices differentiates MALL from CALL. The
mobile devices such as smartphones or PDAs enable continuous and spontaneous access and interaction within different settings, thus promoting new ways of learning. Therefore, despite the fact that most learners will struggle if there is no teacher’s assistance or instruction, mobile learning is more likely about what learners do with mobile devices, rather than how teachers want learners to use mobile devices.

Until recently, the majority of MALL publications have been focusing on descriptions of project implementation (Burston, 2013). There is still relatively limited report in the literature on learner-led mobile language learning activity. A couple of exceptions are studies conducted by Song and Fox (2008) and Deng and Shao (2011). In their study on advanced learners of English using PDAs for incidental vocabulary learning in self-directed ways, Song and Fox (2008) found the mobile device greatly help these highly motivated learners to communicate about word meanings with their classmates and lectures outside the classroom. Deng and Shao (2011) investigated students’ attitude towards self-directed English vocabulary learning with a mobile-phone based e-dictionary application in everyday context. Their survey results indicated a high readiness of students to undertake mobile learning in their everyday life.
2.5 Mobile Apps for MALL

Mobile devices cover cell phones, smartphones, PDAs, tablet, etc. All of them can be used for MALL. Currently, the majority of MALL activities seem to make use of mobile phones (Kukulska-Hulme & Shield, 2008; Mehta, 2013). For the purposes of this study, I particularly focus on smartphone as the mobile device for MALL.

A smartphone combines telephone capability with computing capability, digital camera, video, MP3/MP4 player, mass storage, Internet access, and networking features like Facebook or Twitter in one compact system (Corbeil & Valdes-Corbeil, 2007; Mehta, 2013). With the evolutionary development of smartphone, a new market of mini-software named apps, which is short for applications, has been rapidly growing. Today, new iPhone or Android smartphone users can freely choose and download smartphone/mobile apps from hundreds of thousands of apps in app stores like Apple's App Store and Google Play. Among a great variety of iOS and Android apps there is a considerable number of apps facilitating second/foreign language learning (Godwin-Jones, 2011).

A very limited number of studies have been reported on investigating
smartphone/mobile apps for MALL (Arús-Hita, Rodríguez-Arancón, & Calle-Martínez, 2013; Kim & Kwon, 2012). Kim and Kwon (2012) have presented an in-depth review of 87 ESL smartphone apps to explore their effectiveness for English language learning. They explored the common and distinctive features of smartphone apps and critically analysed the strengths and weaknesses of using them for effective MALL. Their results indicate that the ubiquitous accessibility and flexibility nature of current ESL apps appear effective in offering personal and learner-centred learning opportunities. On the other hand, Kim and Kwon suggest that smartphone apps need to be improved by employing more situated, field-dependent, and collaborative learning opportunities. As a starting point for the development of their own designed language-learning mobile apps in the context of the SO-CALL-ME project in Spain, Arús-Hita and his colleagues' research aims to gain knowledge and insights into features that are suitable for learners using MALL (Arús-Hita et al., 2013). They assessed both of the qualities and limitations of the most salient MALL apps from a second language pedagogical point of view. The types of apps as they categorised include games, referential functions as dictionaries or handbooks, practices, app version of online courses, and most related to the SO-CALL-ME project's goals that exploiting the use of language in context. Another interesting finding, although not relevant to pedagogic approaches, is that
more than one third of the apps downloaded by them presented technical problems
and could not work properly. Some studies have attempted to investigate learners'
perceptions of using mobile apps for language learning and found the students'
favourable attitudes toward the new ways of learning (Chen, Hsieh, & Kinshuk,
2008; Chu, 2011).

Recently, there has been a study on evaluating mobile apps for English
speaking learning. In the project which examines some of the most popular iPhone
apps developed to learn English pronunciation, González (2012) emphasises the
great potential of mobile apps to practise and improve certain aspects of English
pronunciation, such as individual phonemes, stress, and intonation. Although the
feedback is identified as one of the main limitations of current apps, González claims
that these limitations could be easily overcome with the development of technology.

When it comes to analysing and evaluating electronic learning materials, we
need to consider not only the hardware, software, and the actual content of materials,
but also the methodologies that the apps promote. As an ultimate goal, we are
contcerned with how the resources could facilitate learning and to which extent their
use reflects sound learning theories (Kervin & Derewianka, 2011).
2.6 Conclusion

In this chapter, I have reviewed the current definitions of mobile learning which involves mobility of technology, mobility of learner, and mobility of learning. Then I propose a convergence of the dynamic concept of mobile learning. After that, the learning theories and paradigms relevant to mobile learning have been clarified. They are behaviourist, constructivist, situated, collaborative, informal and lifelong learning, and teaching and learning support. Finally, some research on mobile-assisted language learning, particularly via smartphone apps, has been reviewed. The next chapter describes the methodology of this study.
3 Methodology

3.1 Introduction

This chapter describes how the study was conducted. The overall approach to analysing and evaluating mobile apps in this study is based on content analysis of materials and user evaluation. Two main methodological approaches include quantitative analysis of learning materials and group interview as a qualitative research method for studying user evaluation.

3.2 Criteria to Limit the App Search in Google Play Store

This study deals with Android apps designed for smartphone for learning English speaking. The reason to choose Android platform is because this study aims at assessment of features of the current mobile apps for English language learning. Research on the current market share of smartphone platforms indicates that Android platform is used by nearly half of the smartphone users (Kim & Kwon, 2012). In addition, iOS apps are almost overlapped with Android ones. Hence, Android apps can be considered as representatives of current mobile apps for analysis and evaluation. In this study, I limited the search particularly to apps available in the Google Play store.
The apps were searched and filtered out in the procedure as illustrated in Figure 2. At the first stage, hundreds of apps for English speaking were retrieved from the Google Play store. The keywords used for primary app searching include 'English speaking', 'English conversation', 'English pronunciation', and 'conversational English'. Among the hundreds of apps are a great number of dictionary and translation apps that can be used as helping tools when using English but are not designed specifically for learning English speaking. At the second stage, I further limited the search to apps that specifically focus on learning English speaking. The introduction for each app provided by its developer on the websites was carefully examined. App was excluded if 1) it targets at learners of a specific mother language, such as Arabic, Thai, Chinese, Spanish, etc. or 2) it does not mainly focus on English speaking. In addition, only one app was selected out of a variety of versions from the same developer because they normally share the same design features. Through these procedures, a total of 34 apps were confirmed to be included in this study marked as selected apps. After this, the 34 selected apps were downloaded and installed in a smartphone for further analysis. From the apps that I selected and analysed, I chose the most representative 5 apps for further evaluation. The Google Play store was lastly accessed on 3rd July 2014.
Figure 2. The process of app selection.

3.3 Analytical Framework of MapALL

The selected apps were analysed according to the analytical framework which has been adapted to better fit in mobile apps assisted language learning environments. This study employs Kim and Kwon's (2012) analytical framework of MALL as the foundation of an analytical framework. Kim and Kwon's analytical framework of MALL is developed based on the widely used software review criteria, 'Integrated Framework for CALL Courseware Evaluation' by Hubbard (1988, 2006, 2011). While Hubbard's framework was designed for courseware and computer based learning, Kim and Kwon have narrowed down the scope of the framework in order to better fit in MALL environments and devices. Since the present study intends to link the pedagogical features of the selected mobile apps to the learning theories and paradigms related to MALL, I have further modified Kim and Kwon's analytical...
framework of MALL by adding and deleting some elements and criteria.

Additionally, in learner-centred approach learners' decisions about what they learn, how they should learn, and what they should learn through or with are of the importance (McGrath, 2013). Therefore, I particularly added users' feedback in the framework. The revised framework is called analytical framework of MapALL (Mobile apps-Assisted Language Learning). The novel concept of MapALL is originally introduced in this study. The analytical framework of MapALL mainly focuses on the non-technological aspects of mobile apps-assisted language learning.

The analytical framework of MapALL has four main categories: Target Learners, Content and Focus, Theoretical and Pedagogic Features, and Reputation. In Target Learners, it attempts to identify intended users' profile including age, interest, and English language proficiency level. Content and Focus examine each app's learning materials and its structure in addition to whether it focuses on pronunciation, speaking skills, or sociolinguistic aspect. Theoretical and Pedagogic Features cover three elements, instructional activities, individual exercises, and learning theories and paradigms that I have reviewed in Chapter Two. Finally, Reputation includes download count, users' average rating, and their comments. The further detail in the analytical framework of MapALL is given in Table 2.
Table 2. **Analytical Framework of MapALL**

<table>
<thead>
<tr>
<th>Target Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>age (children, young adult, adult)</td>
</tr>
<tr>
<td>interest (general, ESP)</td>
</tr>
<tr>
<td>proficiency level (beginner, intermediate, advanced)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content and Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>topic/theme (basic, daily topics such as travel, shopping, <em>etc.</em> )</td>
</tr>
<tr>
<td>structure (lessons, sentences, words)</td>
</tr>
<tr>
<td>content size (number of units, topics, sentences, words, <em>etc.</em>)</td>
</tr>
<tr>
<td>focus (linguistic, language skill, sociolinguistic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theoretical and Pedagogic Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning theories and paradigms</td>
</tr>
<tr>
<td>(behaviourist, constructivist, situated, collaborative, informal and lifelong, learning and teaching support)</td>
</tr>
<tr>
<td>instructional activities (tutorials, drills)</td>
</tr>
<tr>
<td>individual exercises (practice, test, quiz, game)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>download count</td>
</tr>
<tr>
<td>average rating</td>
</tr>
<tr>
<td>users' comments</td>
</tr>
</tbody>
</table>

As Harwood (2010) explains, quantitative analysis of materials involves identifying content categories and calculating the percentage of space devoted to each category. According to the criteria as listed in the analytical framework of MapALL, each of the 34 selected apps was carefully reviewed. Features of each app were qualitatively analysed and noted down. For general pattern finding across the apps, the analysed data was compared, integrated, and counted. Then the number of apps in the same feature group was calculated for quantitative analysis. The descriptive statistical results are presented in the next chapter.

The selected apps were organized into groups mainly according to their contents and focuses in addition to pedagogic features analysed based on the
analytical framework of MapALL. Then, from each group, I identified one representative app for in-depth analysis. Subsequently, these representative apps were evaluated by English language learners following the procedures as described in the next sections.

3.4 Evaluation of the Representative Apps

3.4.1 Participants.

The participants in the current study were 5 adult English language learners selected from my friends and previous colleagues. They were selected because they own Android smartphones to download and install the chosen apps. Most importantly, all of them have expressed their needs for improving English speaking for examination, work promotion, or daily use, etc. As shown in Table 3, the participants have at least pre-intermediate level of English proficiency. The app evaluation was carried out both in London, UK and Shanghai, China.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Gender</th>
<th>Occupation</th>
<th>Location</th>
<th>English Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yu</td>
<td>19</td>
<td>Male</td>
<td>High school graduate</td>
<td>Shanghai</td>
<td>Pre-intermediate</td>
</tr>
<tr>
<td>Frank</td>
<td>27</td>
<td>Male</td>
<td>IT</td>
<td>Shanghai</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Chris</td>
<td>25</td>
<td>Female</td>
<td>Education</td>
<td>Shanghai</td>
<td>Advanced</td>
</tr>
<tr>
<td>Alice</td>
<td>24</td>
<td>Female</td>
<td>Education</td>
<td>Shanghai</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Kelly</td>
<td>25</td>
<td>Female</td>
<td>MSc student in Management</td>
<td>London</td>
<td>Upper-intermediate</td>
</tr>
</tbody>
</table>

All the participants' names are pseudonyms.
3.4.2 Procedure.

Group interview was the main means of qualitative data collection in this study to gain the participants' feedback on the experiences of using the chosen apps and their perception of MapALL. This is because the focus group could provide information about a range of ideas and feelings that individuals have about certain issues and elicit deeper and richer data (Rabiee, 2004). First, each participant was allocated two chosen representative apps according to their English proficiency levels and learning needs for English speaking. They were told to use the apps whenever they want and wherever they are for a week. However, to ensure that the participants could make good judgement of the apps based on sufficient using time they were suggested use the apps for at least 15 minutes per day. One week later, participants were asked to make some notes of their using experiences and complete an open-ended questionnaire (see Appendix A). The questionnaires were for the participants' own use only to help them well articulate their ideas during the interview. After that, all of the participants were invited to take part in a group interview via Skype to discuss their perception of using these apps for English speaking learning. Their feedback was noted down during the group interview and reviewed immediately afterwards.
In the open-ended questionnaires, participants were asked to summarise their using patterns of smartphone apps for learning English speaking and to write down three things that they like and three things that they dislike about the apps they have been using. Also, they were encouraged to note down what they feel they have improved in English speaking by using the apps. They were welcomed to give any suggestions for further development of those apps. In the group interview, participants were encouraged to share more details of their own experiences of using the chosen apps and perception of the mobile apps-assisted language learning.

3.4.3 Ethical Issues.

As a means of preparation for this study, an information sheet (see Appendix B) has been produced and sent to the participants to ensure they understand the nature of the research, its purpose, and aspects of confidentiality. The participants remain anonymous and no recordings have been made during the group interview.

3.5 Conclusion

In this chapter, I have described the methodology of the present study. Quantitative content analysis and group interview for user evaluation were conducted. An analytical framework of MapALL was innovated to analyse the
current mobile apps for language learning. After searching the keywords related to learning English speaking from the Google Play store, 34 apps were selected (see Appendix C). They were categorised into 5 groups according to their content, focus and pedagogic features. One representative app of each group was analysed in detail and evaluated by different English learners on their own smartphones. The findings of the analysis and evaluation are presented in the following chapter.
4 Findings

4.1 Introduction

This chapter presents the research findings for this study. Firstly, the feature distribution of the 34 selected mobile apps for English speaking learning are given, according to their target learners, content and focus, pedagogic features, and reputation. Secondly, the most relevant learning theories and paradigms underpinning the current mobile apps for English speaking learning are identified. After that, the 34 selected apps are categorised into groups based on their content, learning focus, and pedagogic features. Finally, the in-depth analysis and evaluations of representative apps are presented in detail.

4.2 Features of Current Mobile Apps for English Speaking Learning

The first research question of this study is what the non-technical features of the current mobile apps for learning English speaking are. Findings to this question are presented below.

4.2.1 Target Learners.

In the overwhelming majority of the selected apps for English speaking
learning the target users are adults. As shown in Table 4, more than 90% of the selected apps were designed for adult learners. Among them, two apps are suitable for both adults and children as stated in their descriptions by the developers. One is *Talking English* which is suitable for children and for adults who are starting to learn English. The other one is *English Conversation Classroom* that is useful and knowledge gaining for children aged between 3 and 10 and also helps adult learners. Only two apps are specifically targeted at children, *Speaking ABCD* designed for kids of 2-4 year old and *English Speaking Game* produced for kids to build phonic awareness while playing the game. It is worth noting that none of the apps have distinguished young adults from adult learners.

Additionally, the figures in Table 4 reveal that nearly all of the target users are considered to have interest in learning general English speaking. The only one exception is *Speak Legal English* which is designed for English learners who want to improve their pronunciation of legal English. However, a number of apps targeted at learners with general interests also contain business English topics such as presentation, job interview, and rearranging an appointment, *etc.*
Table 4. *Target Learners' Age and Interest of the Selected English Speaking Apps*

<table>
<thead>
<tr>
<th>Age</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Adult</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>%</td>
<td>6</td>
</tr>
</tbody>
</table>

Regarding to the assumed English proficiency levels of target users, all of the apps are designed for learners from beginner level. As seen in Figure 3, there are 18 per cent (6) of the reviewed apps targeting at beginner learners only. More than half (19) of the apps are suitable for English learners with intermediate or lower proficiency levels. Approximately one quarter (9) of the selected apps provide suitable learning materials and practices for all English learners at beginner, intermediate, and more advanced levels.

*Figure 3. Target learners' English proficiency level of the selected English speaking apps.*
4.2.2 **Content and Focus.**

Figure 4 shows the features of content and focus category of the selected 34 apps in this study. The topics of the learning materials and their structures were examined for the content subcategories, while linguistic, language skill, and sociolinguistic focuses were identified for the focus subcategory. The numbers in this bar chart represent the amount of apps in different types within each subcategory. Since a single app may be counted more than once if it comprises more than one type of structure or focus, the total number of the apps in each subcategory may exceed 34.

For the first subcategory, the topics of the learning materials can be divided into two types as basic and daily topics. Basic type provides only phonetics studies and pronunciation practices. Among the 34 selected apps, 13 apps belong to this type as can be seen from the bar chart. The other ones provide various topics including daily life, transportation, dating, sports, shopping, etc. Some of them also provide speech sounds learning materials in addition to daily topics, for example, *Speak English* (APPJUNGS GmbH & Co. KG) and *Learn English Speak English*. For the second subcategory, the apps have distinctive patterns of content structures. Sentences seem to be the most popular way of presenting learning materials. More
than two fifths (14) of the apps provide a variety of model sentences. 12 apps organise the learning materials into units like traditional lessons. Some apps (10) supply a number of words as the main learning materials, while others offer phonics (5), idioms/phrases (5), or model conversations (5). For the third subcategory, most (26) of the apps are designed for the linguistic focus, providing word or sentence pronunciation study. More than half of the apps focus on developing speaking skill (18). Sociolinguistic focus was found in 10 apps that provide contextualised and meaning focused conversations. In addition to the content and focus features of these English speaking apps, the size of content are vary from 24 letters of English alphabet to thousands of sentences and hundreds of conversations or video lessons.

Therefore, it is not illustrated in this bar chart.

![Figure 4](image-url)

**Figure 4.** Content and focus features of the selected English speaking apps.
4.2.3 Pedagogic Features.

Instructional activity and individual exercise features of current English speaking apps are demonstrated in Figure 5. The numbers in this bar chart represent the amount of apps in different types. Because a single app may be counted more than once if it includes more than one type of instructional activity or individual exercise, the total number of apps in each group exceeds 34. The results clearly show that the types of instruction and exercise of the current English speaking apps are mostly drill and practice, for example, 'listening, repeating, and comparing' or 'voice recording and getting scores'. Example apps are *English Pronunciation*, *Speak English Fluently*, *Just Speaking*, etc. For other instructional activities, seven apps provide tutorials and two apps supply references only such as speaking skill tips. While two apps offer using instructions for app users, there is one app with no instruction at all. For individual exercise, except for drill and practice, around one quarter (9) of the selected apps have sample dialogues or sentences for learner's self-study. Several apps also provide tests for learners to examine their learning outcomes and track their progress. Only one app, *English Speaking game*, is in the form of game encouraging children learners to speak English words correctly to pass different levels.
Figure 5. Instructional activity and individual exercise features of the selected English speaking apps.

4.2.4 Reputation.

The install count, users' average rating, and their reviews were examined to illustrate the selected apps' reputation for supporting English speaking learning. As shown in Figure 6, the download counts for these selected apps are quite various, ranging from 500-1,000 to 1,000,000-5,000,000. More than one in five (8) of the selected apps have been installed 10,000 to 50,000 times. 3 apps have been downloaded at least a million times, while a couple of apps have only been installed less than 1,000 users.
Figure 6. Install count of the selected English speaking apps.

Similar to the broad distribution pattern of the install count, users' average rating of the selected apps ranged from 3.0 to 4.7 (5=very satisfied, 1=not at all satisfied). Figure 7 indicates that most apps were considered satisfied by users. 23 apps have been rated between 3.9 and 4.3 on average. Only two or less apps gained other rating scores separately. Some favourable comments from reviewers included sufficient examples for diverse situations, nice apps for improving pronunciation and English speaking skills, fun and great way to learn English, etc. On the other hand, several negative comments were high price for complete sessions, execution problems after downloading, insufficient using instructions, too many pop-up advertisements, etc. Some reviewers requested offline mode of their installed apps.
4.3 Learning theories and paradigms Underpinning Current English Speaking Apps

The second research question of this study was to identify which learning theories and paradigms are most relevant to the current English speaking apps. Although none of the assessed apps has clearly stated their underpinning learning theory or pedagogical approach in their app descriptions, the related learning theories and paradigms were identified mainly according to their pedagogic features, i.e. instructional activity and individual exercise. Findings for this question are summarised in Figure 8. As shown in the pie chart, the overwhelming majority (30) of the selected apps are based on the behaviourist learning theory through the most...
straightforward 'drill and feedback' activities. Take *Speak English Naturally* for example, this app is developed by 3Prism to help learners find pronunciation mistakes and speak correctly. Therefore, it categorises day to day phrases and provides a standard voice that learners can listen to as well as a record tool to save and play back learners' own voices. In this way, learners can compare their speaking with the original American English accent and improve their own pronunciation.

Some similar apps perform voice recognition and rating functions that encourage users to pronounce English words or sentences as loudly and clearly as possible to obtain a high score, such as *Listen & Speak, etc.* Developed by 9Spikes, *Listen & Speak* uses an advanced learning technique where basic conversational phrases are read, understood, and pronounced in sequence. The app then recognises and analyses learners' pronunciation, telling them how well they have done by showing scores from 0.0 to 1.0. For example, if the model phrase is "Many thanks", learners will get 1.0 if they pronounce this phrase loudly and clearly. They will get 0.5 if only one word, many or thanks, is recognised by the app. If learners speak wrong words, they will get 0.0 even if their pronunciation is correct, such as "thank you". However, since this app uses text-to-speech system to convert the reference phrases into artificial production of human speech to provide speaking models for
learners, the quality of the reference speech really depends on the quality of the
voice output engines installed on user's device. Therefore, the reference speech does
not sound as naturally as human being does. And *Listen & Speak* is not the only app
that uses text-to-speech engine for model speech.

There are other apps that provide feedback through test, like *How to speak English* produced by Kaplan International Colleges. In the challenge mode of *How to speak English* learners could hear several pairs of words with similar pronunciation and need to point out the correct one. After obtaining responses from learners the app will count for one score if the answer was right or no score if it was wrong. At the end of each section, learners could get their final score for each test section. By providing feedback in this way, this kind of app can reinforce learners' memory of correct English words pronunciation.

Among the 30 apps, two apps have also demonstrated the features of situated and collaborative learning theories (*Learn English - Voxy*), and informal and lifelong learning paradigms (*Speak English game*). *Learn English - Voxy* developed by Voxy, Inc. aims to create personalised lessons that adapt based on learner's level, goals, and interests. To facilitate situated learning, this app uses the GPS technology in smartphone to find the user's location and accordingly send learning materials that
are relevant to the user's particular situations, e.g. at a bank or a restaurant. The app also offers online learners' community to enable social interaction between learners. This can provide a shared learning environment for learners to communicate with other individuals and facilitate collaborative learning.

The *Speak English game* app designed by BenBen Information Technology Limited is a voice based language learning game on mobile platform. It provides children users a learning English game scenario to speak English. Learners can build phonetics awareness and improve their pronunciation as they playing the game.

12% (4) of the apps were recognised as no specific underpinning learning theory or paradigm. They provide no explicit instructions or individual exercise, but only offer some speaking skill tips, demo pronunciation without any voice recording or feedback, or supply a list of video lessons retrieved from YouTube.

![Figure 8. Learning theories and paradigms underpinning the selected English speaking apps.](image)
4.4 Categorization of Current Smartphone Apps for English Speaking

To answer the third research question of this study, what the different types of English speaking apps are according to their content and pedagogic features, categorization of the current mobile apps for learning English speaking are illustrated in this section.

Through examining their content and pedagogic features, the assessed 34 apps were classified into five categories as listed in Table 5, namely pronunciation, conversation, video lesson, reference, and authentic content.

Table 5. Five Categories of Current Mobile Apps for English Speaking

<table>
<thead>
<tr>
<th>Category</th>
<th>Features</th>
<th>N</th>
<th>Representative app</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronunciation</td>
<td>phonics, drill and practice, voice recording</td>
<td>23</td>
<td>English Pronunciation</td>
</tr>
<tr>
<td>Conversation</td>
<td>sample dialogues, situational conversations, meaning-based</td>
<td>5</td>
<td>Learn English Speak English</td>
</tr>
<tr>
<td>Video lesson</td>
<td>recorded lessons, form-focused</td>
<td>3</td>
<td>How to Speak Real English</td>
</tr>
<tr>
<td>Reference</td>
<td>speaking tips</td>
<td>2</td>
<td>Speak English</td>
</tr>
<tr>
<td>Authentic content</td>
<td>authentic materials, learner-centred</td>
<td>1</td>
<td>Learn English - Voxy</td>
</tr>
</tbody>
</table>

The 23 apps of the pronunciation category comprise approximately two thirds of all the examined apps. The main aim of these apps is to help learners pronounce English words or phrases accurately and naturally. Hence, drill and practice become the dominant learning activities. Learners listen to model pronunciation and record
their voices by using the recording function that the apps provide. Then they compare their own voices with the model pronunciation by themselves to see how accurate they are. Or, with the app's voice recognition function, learners could obtain scores of their pronunciation performance. Some apps have additional test for learners to check their learning outcomes and progress. One representative app of this categorise is *English Pronunciation* developed by KJ Jessica (Figure 9). The main focus of this app is English phonetics study which includes basic pronunciation of vowel sounds and consonant sounds. Touch on each phonetic symbol on the screen, learners can listen to the tutor's demonstration and see her mouth movement to help them understand how to pronounce correctly. In the related words function, five example words for each sound are listed and users can also listen to and watch the tutorials. In the multiple choice tests for phonetics and words, learners need to listen carefully while watching the tutor's mouth movement and choose the answers. The app then gives feedback, the learners' right and wrong answer counts, to reinforce the learners' pronunciation learning process.
Figure 9. Screenshot of the *English Pronunciation* app (by KJ jessica).

The second category of current mobile apps for learning English speaking is conversation apps. These apps provide informative meaning-based sample dialogues and situational conversations to improve learners' English fluency and speaking skills. The sample conversations are usually organised into different groups according to their various topics and themes, such as daily life, transportation, at the restaurant, shopping, sports, etc. *Learn English Speak English* app produced by SpeakingPal (Figure 10) represents this category. This app exploits the use of language in context. Learners can choose a topic they are interested in at a suitable level. They first watch a short video clip demonstrating a situational conversation, then speak with a video character. The automatic speech recognition understands and rates their speech and learners can obtain instant color-coded feedback on their pronunciation. Similar to the apps in pronunciation category, learners can also record
and compare their speech with a native English speaker to see how well they have done.

![Screenshot of the Learn English Speak English app](image)

*Figure 10. Screenshot of the Learn English Speak English app (by SpeakingPal).*

The third category of the examined apps is video lesson. In this category, apps provide a number of video English lessons, either selected from the online resources which are more like traditionally recorded video lessons, or originally produced by the app developers specifically for phones. These lessons cover a variety of topics and often more form-focused considering their advantages of effectively audio-visual presentation. This kind of apps appears attractive to learners who are used to learning with traditional tutorials instead of self-directed study. A good example is *How to Speak Real English* developed by DS&T_Modern English Studio (Figure 11). For each lesson, learners could learn relevant vocabulary first, and then
by watching explanations and examples in the introduction section they would fully understand the language points. After that, learners could practice what they have just learned through answering questions and repeating the correct answers and have a test lastly. This app emphasises on repeating and answering questions for improving speaking skills that demonstrates the features represented the behaviourist learning theory.

Figure 11. Screenshot of the How to Speak Real English app (by DS&T_Modern English Studio).

The fourth category is called reference. Apps in this category provide speaking tips for users rather than giving pronunciation demonstration, conversation examples, or tutorials. These apps seem to be suitable for more advanced English learners, since the listed speaking tips are all in English and learners need sufficient English proficiency to understand the meta-language first. The representative app for this
group is *Speaking English* produced by Miracle FunBox (Figure 12). Leaners are provided relevant information on a variety of topics and can listen to the audio recordings of example sentences. They can also get useful advice on improving speaking skills, such as tips on general explanations and presentations.

![Figure 12. Screenshot of the *Speaking English* app (by Miracle FunBox).](image)

Last but not least, authentic content is a special app category. The only app in this category is *Learn English - Voxy* (Figure 13). Learners are able to personalise their language learning curriculum around their interests from authentic content that native English speakers consume in real life contexts. In addition, through the app they have opportunities to interact with real people, trained English teachers and other learners registered in daily group classes, and get feedback from native-speaking tutors on their emerging language abilities.
4.5 Learning English Speaking with Mobile Apps - Learners' Evaluation of MapALL

The final research question of this study was to identify the strengths and weaknesses in utilizing the chosen mobile apps for effective English speaking learning from users' perspective. Five example apps were further assessed and evaluated from user's point of view. They were *How to Speak Real English* (used by Yu and Alice), *English Pronunciation* (used by Yu and Frank), *Learn English Speak English* (used by Alice and Kelly), *Speak English* (used by Kelly and Chris), and *Voxy* (used by Frank and Chris). These particular apps were chosen because they possess one or more representative features of each category of current English speaking learning apps. Learner's evaluation of these apps were analysed in three sections which are learners' use patterns of the English speaking apps, their

*Figure 13. Screenshot of the Learn English - Voxy app (by Voxy, Inc.).*
comments on these apps, and their perceptions of learning English speaking through mobile apps.

### 4.5.1 Learners' Use Patterns of the Apps.

Questions about when, where, how often, and for how long they used the apps during the week were asked to all the participants. This was intended to identify the mobility of learners, learning, and even technology for MapALL. Through analysing the interview data, all the participants reported that they used the apps at different time during the day and at different places, such as at home, at work, or while commuting. The majority of them used the apps mostly at home. Participants who work on weekdays sometimes used the apps at workplace after lunchtime.

I learned two lessons of the *How to Speak Real English* app. I used that app at home in the morning because morning is an efficient time period for me to learn a whole lesson. It was too noisy outside to hear the tutor clearly. I used the *English Pronunciation* app at home too. This is the only place where I could speak English loudly without shyness. But I also took its tests for fun while waiting for my friends outside. (Yu)
Basically, I saw the *Speak English* app as a reference for me, so I just used it whenever I needed, usually at my office. I used the other one while going to work and on my way home. (Chris)

From Yu and Chris's responses, we can see that learners need a quiet and stress-free place to practice speaking. However, with the advantage of mobility of mobile devices, learning could also happen at many other places wherever convenient.

Since using the apps was not obligatory, the frequency of learning English speaking through the apps and the length of the time that the participants spent were quite different. Some participants learned every day, while others used only three or four times during the week. For most of the participants, it only took a short time for using the apps each time, from several minutes to around twenty minutes.

### 4.5.2 Learners' Comments on the Chosen Apps.

After a one-week trial period, the participants seemed to already have many comments on these apps as assistance for English speaking learning. Nearly all of the participants believed that using mobile apps is an innovative approach to language learning. They also offered suggestions for the future development of the apps from
their points of view.

Firstly, the participants found it very flexible using mobile apps for English language learning since they could easily access to the learning materials anytime and anywhere. Learners could either use it as small units of learning materials for improving English speaking when it is convenient or as study reference when they need.

I like Learn English Speak English because it does not take me too long to finish one unit, only about ten minutes. So I can easily learn a lesson just after dinner or before going to bed. In a word, it is flexible and easy to handle. (Alice)

It is very flexible and useful. I could refer to it whenever I need as long as I have my smartphone at hand, very convenient. (Chris)

The respondents' reports indicate that mobile apps provide English learners ubiquitously accessible and flexible resources and activities. The bite-size chunks of language input were considered easy to handle.

Secondly, the participants like using mobile apps for learning English because
these learning apps fitted their personal needs well. They could choose topics that
suit their personal interests or needs from a variety of situated conversations that the
apps provided.

I like Voxy since it is like my personal tutor. Before I started learning,
Voxy asked my English proficiency level and personal interests. Then it
provided English conversations and news that exactly what I wanted as
learning materials. This encouraged me to keep practicing my English
speaking. (Frank)

Frank's comment reflects that mobile apps could provide opportunities for
individualised and personalised learning. As learners themselves could decide what
they would learn, mobile apps seem to be an efficient way of providing self-directed
and learner-centred learning environments. Therefore it could enhance learners'
language learning motivation and encourage speaking practice and skills
improvement. In addition, learners' anxiety was reduced a great deal by using apps
as learning assistance. Learning English speaking with no other students or even no
real person was less frustrated, especially when making mistakes.

Last but not least, the mobile apps for learning English speaking were
considered engaging and playful. The participants found the voice recording and
recognition functions interesting and useful, allowing one to reflect on pronunciation
and encouraging self-correction, and they enjoyed the clear presentation of the
learning materials.

I really like the presentation of each lesson. I can have a virtual
whiteboard on the top half of my screen with useful points the teacher
just mentioned and the subtitles at the bottom half of the screen for me
to better understand what the teacher says. Because the teacher is
speaking English all the time and it is sometimes difficult for me to
understand, the whiteboard and subtitles are really helpful. (Yu)

The app took some time to get used to but after a while it is clear and
easy to navigate. I like the voice recording function of this app.

Although it is a little bit strange to hear my own voice, but very useful
to help me improve my pronunciation. The best thing is that I can
practice speaking loudly on my own. (Kelly)

The respondents' comments reflect that clear presentation and multiple
functions of mobile apps have greatly facilitated learners' ability to speak fluently,
accurately, and confidently.

On the other hand, some users pointed out that the voice recognition function was not accurate enough. They reported that they had to speak slowly to get a high score and the app could only provide a limited amount of detail in error diagnosis. The participants suggested further technology developments to enhance the functions of mobile apps for English speaking learning.

Other suggestions that the participants put forward include the apps should encourage and facilitate more collaborative learning and more interactions with other learners. Learners would have shared their learning experiences or even their speaking recordings with friends and other English speaking learners if the apps have sharing functions or platform for online communication among users.

### 4.5.3 Learners' Perceptions of MapALL.

On the whole, the participants had a positive attitude to MapALL, especially for learning speaking. They believed that both of their pronunciation and speaking skills have been improved after using the chosen apps for a week. More importantly, they could speak more confidently and fluently. The average rating the participants gave on the chosen apps was 4.3.
In terms of their future use of apps for English learning, all of the participants have expressed their interests in trying other apps for English speaking and English learning in general. Although most of the participants would prefer free apps or only trial versions of the apps considering the prices, a couple of the participants showed their willingness to pay for the more advanced editions of their chosen apps.

4.6 Conclusion

This chapter has presented the research findings for the current study. Firstly, most of current mobile apps for English speaking learning are targeting at beginner or intermediate adult learners with general interests in learning English speaking. The apps provide a variety of topics, structures, content sizes, and focuses. Among these apps, drill and practice are the most popular activities. The selected apps have received both positive and negative feedbacks from online reviewers. Secondly, the overwhelming majority of the apps are based on the behaviourist learning theory. Thirdly, the assessed apps have been categorised into 5 groups, which are pronunciation, conversation, video lesson, reference, and authentic content. Based on their own experiences of using mobile apps for English speaking learning, the participants in this study have shown favourable opinions on MapALL as an innovative and flexible way of language learning. In the next chapter, I will provide
further discussion of the findings.
5 Discussions

5.1 Introduction

This chapter provides the final discussions of the research findings. They are structured into sections from both theoretical and practical aspects of using the current mobile apps for learning English speaking. The literature review is also linked to the findings and other explanations are given.

5.2 The Features of Current Mobile Apps for Learning English Speaking

Due to a word limit, I only focused on the non-technological features when analysing and evaluating the current English-speaking mobile apps. These features include, as listed in the analytical framework of MapALL in the methodology chapter, target learners, content and focus, theoretical and pedagogic feature, and reputation.

The analysis of the selected mobile apps reveals several common features. First of all, the vast majority of these apps for English speaking learning are designed for adult learners. This result seems contradict the findings of Kin and Kwon's (2012) study in which they claim that most of the speaking apps are targeted
at young adults or children. However, since seldom have the app developers clearly separated their young adult users from adult users, the two groups were not distinguished when I analysed the target learners of the selected apps. Furthermore, most of the apps are attractive and suitable for both young and adult learners. Therefore, I felt it was not of necessity to separate them and could treat them as a whole group of learners. In terms of the language proficiency level of target users, most of the apps are designed for beginning and intermediate English language learners. This is not surprising considering the fact that most of the English language learners are still at comparatively low levels.

Second, most of the apps only provide bit-size chunks of input rather extended tasks. This may due to the small screen size that only sentences seem to be the most suitable way of presenting learning materials. Another reason might be the nature of learning materials for speaking English. Apps that provide e-lessons also divide each lesson into several units. Kim and Kwon (2012) pointed a possible reason that mobile apps are still considered to function as study reference instead of full instruction. Nevertheless, the small amount of information data appears particularly fit the mobile lifestyle of nowadays learners.

Third, with regard to the reputation, the apps with higher average ratings
always had more download counts. This is easy to understand that people tend to choose apps that many others have already tried and highly rated. Some apps having only been installed by a small amount of users still gained comparatively high scores. This may because they were newly developed and only a few users have downloaded them. The users were fairly satisfied with these apps after using them and gave them high scores. Based on this phenomenon, I would suggest learners should not only refer to other users' feedback and the developers' description of the apps but also download and try the apps themselves when choosing mobile apps for language learning. Apart from the content and pedagogic aspects of the apps, some reviewers pointed out execution problems after downloading. In their study of language-learning mobile apps, Arús-Hita, et al (2013) also found that more than one third of the apps downloaded by them presented technical problems and could not work properly. However, the selected apps that I analysed seemed to work smoothly and showed no technical problems. Some app developers may have amended their apps after receiving users' comments on the technical problems.

Fourth, a great number of the assessed apps provide voice recording tools and automatic voice recognition functions. However, the issues of feedback remain problematic. No detailed feedback on learners' pronunciation could be given because
of the limitation of voice reorganization technology. The participants reported that they had to speak very slowly and loudly in order to be recognized by the apps and gain a high score. They complained that it would be wired if speaking in this way with real people. Also, the lack of detailed feedback for learners leads to less personalized learning context. Similarly, the feedback was identified as one of the main limitations of current apps by González (2012) when analysing mobile apps for learning English pronunciation. However, with the development of technology, we could believe that these limitations will be comparatively easily overcome in the near future.

Finally, according to their content and pedagogic features, the current mobile apps for learning English speaking could be grouped into five categories: pronunciation, conversation, video lesson, reference, and authentic content. Very interestingly, they are in accord with the categorisation of apps in the SO-CALL-ME project by Arús-Hita's research team (2013). Their identified five groups were games, referential functions as dictionaries or handbooks, practices, app version of online courses, and apps exploiting the use of language in context. Since this study particularly focuses on speaking, pronunciation group actually represents the practices group in the SO-CALL-ME context. Conversation group is similar as the
group of apps exploiting the use of language in context. Video lesson apps are similar to app version of online courses. Reference group is the same as apps with referential functions found by Arús-Hita et al. The only difference is the authentic content category. The unique app in this category is Learn English - Voxy. In their research, Arús-Hita et al have grouped this app into the group of apps that exploit the use of language in context. Because of the importance of authentic learning materials in language learning, I named another group as authentic content, although there was only one such app.

5.3 The Novel Concept of MapALL

To the best of my knowledge, the concept of MapALL is first introduced in this study. The rationale for formulating this novel concept is to name the relatively new research field that is rapidly growing. Depending on the technological attributes available and more sophisticated mobile apps provided with new pedagogical opportunities, it seems imperative to establish a new concept for MALL concerning mobile apps for researchers and educators. However, further understanding of the highly dynamic and emerging field is necessary before a concise definition of MapALL and a final theory can be determined.
As MapALL is definitely included in MALL, the mobility of MapALL is one of the main features and should be studied further to create more opportunities for better use of mobile apps in assisting with language learning. The participants' feedback on their experiences of learning English speaking via mobile apps in this study has demonstrated the advantages of the mobility of these apps. In terms of the spatial movement of the learners, all of the participants have mentioned the flexibility and ubiquitous access of the mobile apps. They used them either at home, in the office, or on the go. Most participants preferred to practice their speaking at home. This result may seem contradict to Chu's (2011) research on Korean college students' user patterns of the vocabulary apps. In her research she conclude that most of the students used the vocabulary apps while moving and made the best use of mobile learning via the smartphone apps. However, since learning English speaking may acquire a quiet and stress-free place, it is reasonable that a slightly more learners preferred to use apps at home where is more suitable.

In order to analyse and evaluate the pedagogical features of the current mobile apps for English language learning and to investigate their learning paradigms in relation to theories of MALL, an analytical framework of MapALL has been developed in this study. Based on the reviewed literature (Hubbard, 1988, 2006,
2011; Kim & Kwon, 2012; McGrath, 2013) and practical issues, I have deleted the technological features criteria but added the apps' popularity among users and their received evaluation into the framework. The analytical framework of MapALL is only a prototype of framework for analysis and evaluation, because it was developed mainly target for mobile apps for English speaking learning. Further development is needed to broaden the scope of the analytical framework for investigating other English skills or other language learning via mobile apps.

5.4 Learning Theories and Paradigms in relation to MapALL

The learning theories and paradigms in relation to MALL as reviewed in Chapter Two mainly include behaviourist, constructivist, situated, collaborative, informal and lifelong learning, in addition to learning and teaching support. Because no learning theories have been mentioned in the selected apps' online descriptions, I attempted to identify them according to the apps' instructional activity and individual exercise. The results indicated that the overwhelming majority of the assessed apps were based on behaviourist learning theory. This is because most of the apps provide 'drill and feedback' activities. Same as Keskin and Metcalf's (2011) conclusion, 'drill and feedback' is one of the most popular activities in language learning application through mobile phones in the behaviourist paradigm.
Collaborative and situated learning theories in addition to informal and lifelong learning paradigms were founded in only a couple of apps. Based on the situated learning theories and paradigms, the GPS technology in smartphone can help to find the user's location and the app could tell them the English expressions to be used in that context. Although the output is rather limited as some words or isolated sentences, the idea of offering learners what they need in the specific context has a great potential. For the apps claimed to provide opportunities for collaboration with others or to engage in authentic contexts, there were still limitations of collaboration and interaction among learners or between learners and tutors via mobile apps. More collaborative learning opportunity and active use of authentic context, socially interactive tasks, and situated materials are needed.

Since this study focused on mobile apps for learning English speaking, the selected apps are mainly for learning materials delivery or learning practice for improving pronunciation and speaking skills. Hence, the constructivist learning theories and learning and teaching support paradigms were not found among the assessed apps.
5.5 The Strengths and Weaknesses of Utilizing Current Mobile Apps for Effective MapALL

In general, learners have shown favourable attitudes towards using current mobile apps for language learning. This may because MapALL is an innovative approach to learning and smartphone users are willing to see the potential functions of their smart mobile devices can offer for learning. Interestingly, Chu's (2011) study on students' continued use of smartphones for learning revealed that they were still not prepared or ready to use the new devices but seemed to be satisfied and intend to continue to use it for learning. The participants in my study have already shown their readiness for the new ways of learning.

The learners have found that mobile apps could provide a learner-centred learning opportunity with flexible resources and activities. The mobile apps offer personalisation as they can be customised to the individual's unique learning pathway. In addition, the learners could easily access language learning materials anytime and anywhere. This seems to enhance their learning motivation and confidence in English speaking, and encourage learners to develop life-long learning habits.
On the other hand, there were still limitations on the technical aspects as the participants pointed out, such as voice recognition function. However, the small screen size did not appear to be a problem for language learning according to the participants' response. On the contrary, some participants like the screen size limitations which make the amount of learning materials more manageable than that of other learning materials. This result is in accord with earlier research by Chen et al (2008) on the use of mobile phones for the delivery of vocabulary learning materials to Taiwanese learners of English. A possible reason behind users' tolerance of small screen size may be that they have already been used to it as they use their smartphones for numerous daily activities such as browsing websites, social networking, etc.

Although it is a fact that the current mobile apps for language learning tend to provide rather fragmented language practices, some apps assessed do provide more contextualised practices. And learners seem to be happy with different types of apps on the market from their reports on future use of apps for English learning.

5.6 Conclusion

In this chapter, I have discussed the findings of the study by considering the
relevant literature and provided some possible explanations. Research findings in theoretical aspects include the novel concept of MapALL, the newly developed analytical framework of MapALL, and behaviourist learning theories and paradigms underpinning the most English speaking apps on the market. The current features of mobile apps for English speaking learning and the strengths in addition to the limitations of using mobile apps for language learning are discussed from the practical aspects. The following chapter provides final conclusions of this study.
6 Conclusions

6.1 Introduction

The final chapter draws conclusions from this study. First, it summarises the whole research conducted in the present study. Then the contributions of the research are highlighted. After that, the limitations of the research are discussed. Finally, future work is proposed.

6.2 Summary of the Research

With the mobile technologies being gradually integrated into learning and the evolutionary development of smartphone, the market of educational mobile apps, especially for second/foreign language learning, has been rapidly growing. However, the research on mobile apps with regard to the learning theories or second language pedagogy remains scant. Therefore, this study attempted to investigate the pedagogic features of the current mobile apps for English learning and the evaluations of the apps from learners' perspective. This study examined the pedagogic features of the current mobile apps for English speaking learning, identified the existing learning theories in relation to these apps, and analysed the strengths and limitations of utilising the mobile apps for English language speaking from the learners' points of
view in addition to their perceptions of using mobile apps for language learning in general. English speaking was particularly focused on because pronunciation and speaking skills are one of the most challenging aspects for the language learners to master, and mobile apps seem to be ideal to support speaking practice.

To examine the current mobile apps for speaking learning, I first searched and selected 34 apps on Google Play. These apps were then analysed according to my analytical framework of MapALL. After that, 5 representative apps were identified for further evaluation. Open-ended questionnaires were sent to five participants and group interview was conducted to collect the learners' feedback on these apps.

The research findings have shown that most of the target learners of the current mobile apps for English speaking learning are adults with intermediate or lower proficiency levels and general interests in English speaking. The apps covered a variety of topics and were mainly organised into small units of data like sentences or dialogues. Moreover, most of the apps provided drill and practices on linguistic skills. Accordingly, behaviourist learning theory was the dominant theory underpinning the current mobile apps for English speaking learning. Five categories were identified for the English speaking apps, namely pronunciation, conversation, video lesson, reference, and authentic content.
In terms of learners’ feedback on these mobile apps, both the users’ online reviews and the research participants’ comments have shown their positive attitudes toward using current mobile apps for English language learning in spite of a couple of technological limitations. Mobile apps were considered to provide opportunities for personalised and learner-centred environments with flexible access to learning materials anytime and anywhere. This new and playful way of learning would have great potential to increase learning motivation and encourage lifelong learning habits.

6.3 Contributions of the Research

This study has introduced the concept of MapALL for the comparatively new research field of mobile apps-assisted language learning. To the best of my knowledge, this is the first time that the fresh idea of MapALL is devised. Although further understanding of the dynamic concept is needed to give a precise definition of MapALL, this novel concept gives researchers and educators an idea of the increasing trend of using mobile apps to assist in language learning.

The analytical framework of MapALL developed in this study provides a starting point for the development of analysis and evaluation framework for mobile
apps-assisted language learning. This framework was particularly designed for apps for English speaking learning, but could be expected to perform the prototype of framework for analysing and evaluating MapALL for learning other English skills, learning English in general, or even other languages.

The learning theories and paradigms reviewed in this study and the result that the behaviourist learning theory underpinning most of the current mobile apps for English speaking learning provides an overview of the learning theories and second language pedagogy in relation to the current mobile apps-assisted language learning. This could not only help app developers to better understand the underpinning theories, but also signify new directions to design more sophisticated apps. Similarly, the study can provide app users reliable reference for choosing suitable apps for learning English, particularly for speaking learning.

This study has also shed light on users’ perceptions of the current mobile apps for English speaking learning and using mobile apps for leaning a foreign language in general. Since learners’ decisions about what they learn, how they should learn, and what they should learn through or with are very important in learner-centred approach, the learners’ feedback would be of great value to researchers, educators, app developers, and policy makers.
6.4 Limitations of the Research

It is beyond the scope of this study to synthesize the theories presented in the literature that are relevant to learning English with mobile apps. Nevertheless, there is no overarching 'theory of mobile learning'. We need to work on an integrated pedagogy for the use of mobile apps for assistance in language learning.

With regard to the newly developed analysis and evaluation framework of MapALL, there is a limited scope of the investigation on the current mobile apps-assisted language learning. Since the present study was specifically focused on the apps for English speaking, the pedagogical approaches and the theoretical features of the English-learning apps for other language skills may have been overlooked. Moreover, the technological specifications of the apps were not yet included in this framework.

This study might also have limitations with researcher bias. As described in the methodology chapter, each app was analysed according to the adapted analytical framework based on my own good judgement. The analysis would be more reliable if the assessment of these apps had been done by more than one examiner.
6.5 Future Work

To extend the present study, some future work could be undertaken. First, a more comprehensive literature review could be conducted to identify other possible theories that are connected to mobile apps-assisted language learning. Also, as the young fields of mobile learning and MapALL continue to grow, the theories and paradigms that this study have reviewed will need to be constantly revised and revisited.

With regard to the analytical framework of MapALL that this study has developed, an advanced version needs to be produced. Therefore, the amended analysis and evaluation framework could be used to examine not only mobile apps for English speaking learning, but also other language skills like listening, reading, writing, or learning general English and even other second/foreign languages. The future framework would also include technological aspects of mobile apps for a more thorough evaluation.

In terms of possible suggestions for future development of mobile apps for English speaking learning, one possible type of apps could be Context-aware mobile apps. More context awareness could be embedded when developing the content of a
mobile application. This is inspired by the context-aware learning which is considered to be related to the situated learning paradigm. Through information collection from the environment, the application will be able to measure what is happening around the user with a smartphone. Then learning activities and content that are specifically relevant to that environment will be made available. This kind of context-aware applications would well support English learners by performing function of scaffolding. They would be able to enhancing language learning activities while the learners in different contexts. For example, a learner sitting in a restaurant may receive some appropriate assistance from his or her context-aware English learning application, such as sample dialogues on ordering food in English or some speaking tips for that specific environment.

Furthermore, learners' feedback on the current mobile apps for language learning could be investigated with more participants and longer using periods to obtain deeper comprehension. The participants could be encouraged to keep a learning diary for better understanding of their needs and the perceptions of MapALL. If possible, more researchers getting involved when analysing the mobile could provide a more reliable assessment of the both pedagogic and technological features of the examined apps.
6.6 Conclusion

In conclusion, this study has presented an overview of the learning theories and paradigms that are linked to the current mobile apps for English speaking learning. The new concept of MapALL and an analytical framework have been proposed. The learners' feedback on their MapALL learning experiences has clearly indicated the continuing potential of mobile apps for ubiquitous and flexible learning. The new and effective forms of language learning should continue to be studied.

(Word count: 13300)
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Appendices

Appendix A

Open-ended Questionnaire for Evaluation of Apps for English Speaking Learning

Your Name: Gender: □ Female □ Male Age:
Occupation:
English proficiency level: □ Beginner
□ Pre-Intermediate
□ Intermediate
□ Upper-Intermediate
□ Advanced

Please give the names of the apps you used in the last week?

a: b:

1. Please summarize briefly when, where, how often, and for how long did you use the apps during the last week.

a: b:

2. Please list three things you like and three things you dislike about the apps.

a: b:

3. What aspects of English speaking do you think you have improved by using the apps?

a: b:

4. Do you have any suggestions for further development of these apps?

a: b:

5. Please rate the apps.

a: ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 (1=dislike, 5=like)
b: ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
Appendix B

Information Sheet

Department of (details removed)

Title of Study: Analysing and Evaluating Current Mobile Applications for Learning English Speaking

Name of researcher:

The study is being done as part of my master's degree in the Department of (removed). The study has received ethical approval.

This study wants to analyse pedagogic features of the current mobile applications for learning English speaking and evaluate their effectiveness from the app users' perspective.

If you agree to participate you will use two of the chosen apps at any time for one week. You will complete an open-ended questionnaire and agree a convenient time for a group interview for about half an hour. You are free to withdraw at any time.

A code will be attached to your data so it remains totally anonymous.

The analysis of the questionnaire data and our interview will be written up in a report of the study for my degree. You will not be identifiable in the write up or any publication which might ensue.

The study is supervised by Dr (name removed) who may be contacted at the above address and telephone number.