Benefits of Using Mobile Apps as a Support for Mandarin Language Learning

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Abstract. Conventional face-to-face learning is not enough to keep up with the demands of today's internet-based technology. Along with the emergence of the industrial revolution 4.0, the term education 4.0 also appears in the world of education, where conventional face-to-face learning is considered to be unable to fully support the latest learning. Mandarin is the second largest language after English, so mobile apps that support Mandarin learning are growing more and more diverse. Therefore, foreign language learners make mobile apps as supporting learning. This study uses a survey method to determine the use of mobile apps in learning Mandarin, data were collected from questionnaires distributed to 149 students of the Chinese Literature program. Respondents stated: Most of them downloaded 1-3 apps on their smartphones; the majority of mobile apps used are in the form of dictionaries and translators; there are relatively many mobile apps available, but only a few can help them learn effectively; they prefer mobile apps with material that is presented in an audiovisual manner; they use mobile apps to support classroom learning and independent learning; supporting self-learning at any time and any place is the main reason they use mobile apps in learning Mandarin.

1. Introduction

Digital platforms that support Mandarin learning based on content and resources can be divided into 4 types, namely web-content based platforms, mobile apps based platforms, video streaming based platforms, and e-learning courses based platforms [1]. One of them, mobile apps based platform becomes one of the main choices for Chinese as foreign language learners to support learning. Mobile apps that are downloaded for free or paid can generally also be accessed online and offline. According to the results of a survey conducted by the association of Indonesian internet service providers in 2018, the professions that use the most internet are 100% teachers from a total of 5900 respondents, following
university students and high school students by 92.1% and 71.8%. The reason for using the internet is focused on communication and social media, but as many as 11.5% of the total respondents use the internet to find information related to their work. As many as 15.2% of the total respondents made "free time" the second reason for using the internet.

Seeing the results of the survey, education is more connected to the internet, and all activities in education are starting to depend on the internet. Based on data from statista.com, smartphone users in Indonesia in 2017 reached 62.69 million people, and it is predicted to continue to increase until 2022 to 89.86 million. This proves that the learning style that is suitable for today is learning through smartphones[2]. Besides, the use of mobile apps has become a trend, where teachers and policymakers should be able to pay attention to the use of smartphones to support classroom learning and independent learning. Based on the results of a survey of high school students in Gorontalo, most students believe the use of smartphones should be integrated with the teaching and learning process [3]. A study of internet-based flipped classrooms states students tend to use smartphones to access learning material, this makes self-learning easier [4]. Mobile learning apps whose material is sourced from a textbook are the top choices for students. An ideal textbook can improve student learning, competence, and achievement in mastering language [5]. With the textbook companion mobile apps, it is easier for students to preview and review learning material [6].

2. Methods
This study aims to determine the use of mobile apps in supporting Mandarin learning among Chinese as foreign language learners. This study used a survey method, by distributing closed questionnaires to 149 students of the BINUS University Chinese Literature program. Survey data taken in April 2020 will be analyzed with a descriptive-analytical approach, which uses survey data to describe and provide an overview of the use of mobile apps to support Mandarin learning.

3. Result and Discussion
3.1. Mobile Assisted Language Learning (MALL) concept
Mobile-learning (m-Learning) is based on mobility-based learning. This mobility is technological mobility which supports the mobility of learners and learning, which is more important than technology [7]. Computer-assisted Language Learning (CALL) is computer-based learning that has two main uses, namely two-way learning and individual learning with computers facilitating language learning [8]. Mobile assisted language learning is a subdivision of m-learning and CALL [9], which uses mobile application software to do language learning.

Mobile learning includes all learning related to mobile equipment or buildings with wireless infrastructure [10]. With increasingly modern communication tools, educational experts try to take the initiative to apply the use of these tools in teaching and learning. Mobile devices allow students to share information, align their tasks more broadly and function more impressively in situations that require collaboration between experts [11] [12] [13] [14].
3.2. Survey result

Based on the results of a survey of 149 students from the BINUS University Chinese Literature study program, 64.4% (96 respondents) stated that they installed 1-3 mobile apps on their smartphones. While those who installed 4-6 mobile apps and more than 6 mobile apps were 17.4% (26 respondents) and 18.1% (27 respondents). From this result, students tend to install less than three mobile apps.

Mobile apps supporting Mandarin learning available on the Google Play Store and Apple App Store are very diverse. The survey results show that the majority of students feel that only a few can support effective learning, which is as much as 57.7% (86 respondents). 13.4% (20 respondents) stated that mobile apps are few and do not support learning. From these results, there are already many mobile apps available, but only a few that support effective learning.

Mobile apps that are generally available based on content can be categorized into Chinese-English dictionaries, flashcards, Chinese pinyin, writing Chinese characters, structured lessons, and learning Chinese through videos [15]. Of the six main categories, 4 of them are learning characters and vocabulary. Survey results show that students tend to use mobile apps in the form of digital dictionaries and translators to support Mandarin learning. As many as 94% (140 respondents) used the Pleco application as a digital dictionary, 81.9% (122 respondents) used online translator machine-based applications such as Google Translate and Baidu Translate.

![Figure 1. Choice of respondents' effective learning styles and forms of material presented by mobile apps](image-url)

Learning styles also influence the selection of what material forms are most preferred on mobile apps. Audiovisual learning style is the most effective learning style in learning Mandarin according to 87.9% (131 respondences). Thus, the most preferred form of material presented by mobile apps is a combination of audio and images (video), chosen by 64.4% (96 respondences). 30.9% (46 respondents) liked the combination of pictures and writing.
Figure 2: Comparison of the frequency of using mobile apps in learning in class and at home

MALL should use a smartphone to improve learner's mobility in learning Mandarin. The frequency of using mobile apps in classroom learning and independent learning is the main focus in the use of mobile apps in supporting Mandarin learning. 34.2% (51 respondents) stated "very often" and 45.6% (68 respondents) stated "often" using mobile apps when learning activities in class. 60.4% (90 respondents) stated "very often" and 30.9% (46 respondents) stated "often" using mobile apps when in independent learning activities at home. Although the response to the frequency of smartphone usage is classified as very good, namely using the indicators "often" and "very often", but it should be noted that the number that states "very often" uses the highest mobile apps namely on independent learning at home. So, it can be concluded that mobile apps are used subjectively to support classroom learning and independent learning at home, one of which is the ability to be used at any time and any place is the main reason for using mobile apps.

4. Conclusion
The use of a smartphone is common in daily activities, with its built-in functions for communication and entertainment. Smartphone has now become one of the language learning media that needs to be taken into account. MALL is one of the choices that can be chosen by teachers and decision-makers to support Mandarin learning at the higher education level. MALL apps available are duly able to support learning in class and independent learning at home.

The survey conducted in this study proves that MALL apps were chosen to support learning in the classroom and at home, with independent learning being the main reason. The results of this study may also provide input to developers of mobile apps to be able to create applications that can at least meet the basic learning needs, namely the characters and Mandarin vocabulary. The form of material displayed can at least involve audio and visual media to support effective learning.

This study provides an overview of the conditions for using mobile apps to support Mandarin learning at higher education levels. The use of MALL apps to support Mandarin learning needs to be
continued through experimental research, where we can test their use in a course subject and other learning models.

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References

[1] Jureynolds and Ying Y 2020 J. Phys.: Conf. Ser.1477 042014
[2] Andreani W and Ying Y 2019 “PowPow” interactive game in supporting English vocabulary learning for elementary students. Procedia Computer Science157 473-478
[3] Machmud K 2018 The Smartphone Use in Indonesian Schools: The High School Students’ Perspectives. Journal of Arts and Humanities7 33-40
[4] Jureynolds and Y Ying 2020 J. Phys.: Conf. Ser.1477 042013
[5] Ying Y, Mursitama T N and Novianti N 2018 Suitability of Textbook for the Improvement of Linguistic Competence in Chinese by International Relations Students in Indonesia Pertanika Journal of Social Sciences & Humanities26 (3) 1241-1252
[6] Ying Y et al 2020 J. Phys.: Conf. Ser.1477 042015
[7] Yurdagül Cand ÖzS 2018 Attitude towards Mobile Learning in English Language Education Educ. Sci.8 142-155
[8] Okonkwo U 2011 Computer Assisted Language Learning (CALL) Software: Evaluation of its Influence in a Language Learning Process. UJAH: Unizik Journal of Arts and Humanities 12 76-89
[9] Gangaiamaran RandPasupathi M2017 Review on the use of mobile apps for language learning. International Journal of Applied Engineering Research12 11242-11251
[10] Lehner F, Nosekabel H, Lehmann H 2001 Wireless E-learning and Communication Environment (Germany: University of Regensburg)
[11] Chien C C 1997 The Effectiveness of Interactive Computer Simulations on College Engineering Students' Conceptual Understanding and Problem Solving Ability Related to Circular Motion PhD Thesis The Ohio State University
[12] Coil R A 1998 Multiple Intelligences and Computer-Assisted Learning with Adult Learners: An Examination of Learner Outcomes PhD Thesis The Union Institute University
[13] Sharples M 2000 The Design of Personal Mobile Technologies for Lifelong Learning. Computers and Education34 177-193
[14] Sharples M et al 2000 Structured Computer-Based Training and Decision Support in the Interpretation of Neuroradiological Images. International Journal of Medical Informatics 60 228-263
[15] Chuang H Y2016 Mobile Assisted Language Learning APPs for the Chinese Classroom. Journal of Technology and Chinese Language Teaching7113-119.