Effectiveness of 'Pocket Mandarin' for Online Learning among Mandarin as a Foreign Language Basic Learners

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Abstract

In the face of difficulties of teaching and learning due to the impact of Covid-19, online lessons have become vital. This has also affected the teaching of Mandarin as a foreign language at universities. Since Mandarin is considered as a difficult language to learn especially to non-native learners, teaching online has posed an even greater challenge to Mandarin language instructors. This study thus examines the use of a combination of platforms and applications online, customised to create an online learning system called 'Pocket Mandarin' to facilitate online Mandarin learning at the beginner level. The purpose is primarily to enable learning to take place in a fun and interactive manner by means of online flashcards, pronunciation, games and quizzes placed in a learning management system (LMS) platform called Padlet. To better understand how 'Pocket Mandarin' can effectively facilitate online teaching and learning among Mandarin as a foreign language (MFL) basic learners at the tertiary level, a survey was applied and it consisted of five parts which are students' motivation, students' attitude, cognitive development, design and interface as well as expectations. An open-ended survey was also administered to further support the research. The results show that 'Pocket Mandarin' was positively accepted by the students who found the lessons motivating, upbuilding, cognitively applicable, with exceptional design and interface and was better than their initial expectations. Thus, there is great potential for 'Pocket Mandarin' to be widely used at a greater scale.

Keywords: *Pocket Mandarin, Online learning, MFL basic learners, online teaching, Padlet*

1.0 Introduction

Since the spread of Covid-19 in early 2020, unprecedented challenges have been encountered in all areas of development including the education sector. The unexpected lockdown has caused educational institutions worldwide to transition to online teaching and learning (Ahmad et al., 2019; Hasan & Bao, 2020). In China as well as other countries worldwide, it was found that the unexpected move of classes from physical face-to-face sessions to online learning raised issues of lack of preparedness (He & Xiao, 2020).

The field of teaching Mandarin as a foreign language to university undergraduates has also been affected. Virtual classes have posed new challenges in terms of lesson preparations online, student interactions and attention, assignments and assessments, students' self-discipline as well as time management. Mandarin lan-

guage learning includes the different sounds and strokes. This means that learning the language requires a lot of practice and memorising. As such, it is not an easy task to teach online.

In the meantime, online learning has spread all over the world as a means to enable learning to take place even without going to school and sitting in a classroom facing the class teacher. In effect, it allows for the flexibility of learning from home in front of a computer or mobile device connected through the internet. So a teacher may be in another part of the world and still be able to have a class session with his or her students. In the current lockdown situation worldwide, this may seem a viable solution as both students and teachers have to practise social and physical distancing.

While learning Mandarin as a foreign language even in a conventional face-to-face classroom has been found difficult, online language learning poses even more challenges for both learners and teachers alike. A study based on the introduction of Chinese as a foreign language in Saudi Arabia for example, found that there were serious concerns by the learners over language difficulty, learner motivation and aptitude, and learner culture (Alshammari, 2020). To meet these challenges, it was decided that a language learning management system (LMS) be used to facilitate students' Mandarin language learning. Thus, the development of the project 'Pocket Mandarin' was set for basic learners of Mandarin at the tertiary level. The main focus for the project included vocabulary learning, basic phrases for everyday use, pronunciation as well as basic sentence structure in Hànyǔ pīnyīn. In relations to this, the objectives of the study are (1) to determine whether 'Pocket Mandarin' motivates students to learn Mandarin; (2) to determine whether 'Pocket Mandarin' facilitate the cognitive development of students; and (3) To find out to what extend 'Pocket Mandarin' is effective in learning Mandarin.

2.0 Literature Review

2.1 Technology and Online Lessons

Technology has become increasingly important in the field of education and is transforming the scene of education especially in difficult times such as the Covid-19 pandemic. Online lessons have become increasingly widespread worldwide. While online learning is not something new and was introduced decades ago, it has become important for the smooth functioning of the learning process. Levis et al. (2016) asserted that online language learning has more advantages than other forms of instruction. For example, online language learning provides exposure to native pronunciation better than some live instructors. Further, online learning also provides individualised learning which leads to more effective learning (Kulik & Fletcher, 2016).

Karuppannan and Mohammed (2020) found that there were predictive factors associated with online learning during the Covid-19 pandemic in Malaysia such as teaching methods, psychological factors, language skills and proficiency level in their study of English language learning. This could also be applied to the teaching of Mandarin online.

One way to support online learning is by incorporating Padlet to support learning tasks and promote student engagement as it can attract students due to its technology-based instructional design. Gill-Simmen (2021) asserted that by doing so, students would find it deeply cognitively engaging. In another study by Jong and Tan (2021), they found that using Padlet as a technological tool for assessment of students' writing skills in online classroom settings had positive feedback and could be recommended as a new pedagogical tool in writing assessment for the current generation of students. Other studies have similarly found that online teaching in disruptive environments could be enhanced through clear cognitions of features, advantages, and limitations (Gao & Zhang, 2020).

Ibrahim et al. (2011) conducted a study on educational games and found that they enriched knowledge and understanding as well as increased motivation. Thus, incorporating online games and quizzes has positive effects on online learning.

Bao (2020) in a case study at Peking University, found that five high-impact principles were applicable for online education which includes high relevance between online instructional design with student online learning, effective delivery, strong support by the faculty, quality meaningful participation by the students and a back-up plan to facilitate unexpected online incidents.

2.2 Use of Flashcards for Mandarin Lessons

Flashcards are normally used in learning a foreign language vocabulary (Komachali & Khodareza, 2012). In a study by Wen et al. (2020), both educational flashcards and board games had a significant positive effect on students' learning motivation. In fact, it was found that the learning motivation and flow experience of educational flashcards were significantly higher than that of the educational board games. Ying et al. (2021) found that the use of online flashcards for learning Mandarin with 5th grade students had positive effects. The study found that students enjoyed learning Mandarin by using the flashcards, and the Mandarin scores as well as vocabulary mastery of the students also increased.

2.3 Students' Motivation and Attitude

Students' motivation and attitude were found to be positively affected by their learning experience when introduced to different online methods such as flashcards and board games (Wen et. al, 2020). However, Gao (2020) found that with the emergence of the Covid-19 pandemic, students were faced with new challenges related to technological and physical barriers and the demands of self-discipline and time management abilities which in turn affected their mental health and motivation for learning. This had significant pedagogical implications to the learning of Chinese character pedagogy and thus it was proposed for improvement in teaching strategies as well as material and resource development for the purpose of online

teaching. Suo and Suo (2020) thus concluded that it was vital to attract students and motivate them to learn online in order to help them overcome difficulties in learning.

2.4 Cognitive Development

In a case study in London, online Mandarin language lessons were conducted due to the sudden close of all schools to curb the widespread of Covid-19 and the study found that the students' experience based on cognitive, social and teaching presence showed that the sense of 'presence' played an important part in creating a meaningful and worthwhile learning experience for the students (Qing & Diamantidaki, 2020).

2.5 Design, interface and expectations

Design, interface and expectations were part of the elements considered for the research by Ibrahim et al. (2011). Their research was based on the Input-Process-Outcome Game Model (Garris et al.,2002 as cited in Ibrahim et al., 2011). The outcome of the research suggested that students were highly motivated, had a positive attitude and acknowledged their cognitive development besides the fact that the interface was considered well done to enable ease of navigation for students to enjoy the games. The design also played an important role in enhancing the educational process. Further, it was found that satisfying the students' expectations encouraged the researchers in the design and interface of the product.

3.0 Method

3.1 Respondents

The respondents of the study consisted of 37 students. The students were selected based on a purposive non-random sampling method to facilitate students who enrolled in the beginner level of Introductory Mandarin for the study. The students were all from a local university taking the course code TMC401 Introduction to Mandarin (Level 1). The respondents were all Malay non-native speakers of the Mandarin Language from a degree programme at the university. They were all in their early 20s.

3.2 Instrument

3.2.1 Development of 'Pocket Mandarin'

Numerous studies have attested to the feasibility of online learning as a means of injecting fun in learning (Wen, Do, Liu, Lin & Huang, 2020; Ying, Marchelline & Wijaya, 2021). Pocket Mandarin is an innovative educational tool kit specially designed for non-native Mandarin learners at the beginner level. It uses a combination of interactive online gaming tools such as Padlet, Quizlet, and Quizizz. It can be accessed by using any IT device such as smart phone, tablet, and laptop. The design using Padlet is the first interface that acts

as an online noticeboard to post shared links of learning materials which have been prepared in Quizlet and Quizizz. The focus at this beginner level is on vocabulary, pronunciation and conversation. Quizlet has been incorporated to learn vocabulary and conversation phrases through flashcards and games while Quizizz tests understanding of vocabulary and short sentences. The Padlet platform is thus customised to the needs of the learners of Mandarin as a foreign language. Pocket Mandarin was introduced to the TMC401 class for the academic session 1 2020/2021 semester. Within the 14-week period, the students were subjected to online learning as the country faced a lockdown due to the Covid-19 pandemic. The sessions were mediated by the lecturers in interactive learning environments.

3.2.2 Google Form Survey

An online Google form survey was used for the study. It was adapted from Ibrahim et al. (2011) in the study of educational games as a learning medium using five constructs: motivation, attitudes, cognitive development, interface and expectations. The Google survey form had 28 items and they were divided according to (1) students' motivation, (2) students' attitude, (3) students' cognitive development, (4) students' perception of the design and interface and, (5) students' expectations.

3.2.3 Open-ended survey

The open-ended survey is a 5-item survey where the respondents can write how they feel about their experience learning Mandarin through 'Pocket Mandarin'. The items are as follows: (1) Is the 'Pocket Mandarin' interesting? (2) Why do you think 'Pocket Mandarin' is interesting? (3) Do you think 'Pocket Mandarin' is an effective method to learn Mandarin? (4) Why do you think 'Pocket Mandarin' is a more effective method to learn Mandarin? (5) How does 'Pocket Mandarin' motivate you to learn Mandarin? The purpose of the open-ended survey was to serve as a support for the answers to the Google form survey.

3.3 Research Procedure

'Pocket Mandarin' was designed and developed prior to the academic session 1 2020/2021. It was then decided that it should be tested on the undergraduates at the degree level that were taking the TMC401 course. After the course, the students were instructed to fill in the Google form survey. They were also given an open-ended survey to answer. This would help determine the effectiveness of Pocket Mandarin as part of their learning experience.

3.4 Data Analysis

The data collected from the survey was descriptively analysed via SPSS (Statistical Package for Social Science) version 21 and presented in tables and charts. The open-ended survey was also descriptively analysed using the MS-Excel package.

4.0 Results

The results of the Google form survey are divided into demographics, students' motivation in using Pocket Mandarin, students' attitude towards using Pocket Mandarin, students' cognitive development in using Pocket Mandarin, students' perceptions of the design and interface of Pocket Mandarin, and students' expectation in using Pocket Mandarin.

4.1 Demographics

The demographic profile of respondents in this study is presented in table 1. A total number of 37 respondents enrolled in the TMC401 Introductory Mandarin (Level I) participated in this study. Table 1 shows that the majority of the respondents were females (94.6%) while 5.4% of the respondents were male. The table also shows that 97.3% of respondents are 21 years old and above while 2.7% of respondents are 20 years old or below. Furthermore, they were all degree students of Malay ethnicity and enrolled for the TMC401 course for the academic session 1 2020/2021.

**Table 1**

Demographic profile of respondents

		Frequency	Percent
Gender	Male	2	5.4
	Female	35	94.6
Age	20 years old or below	1	2.7
	21 and above	36	97.3
Education level	Degree	37	100
Ethnicity	Malay	37	100
Mandarin competency	Beginner	37	100

4.2 Students' motivation in using Pocket Mandarin

Figure 1 illustrates students' motivation in using Pocket Mandarin to learn Mandarin. The findings of this study show that all respondents (100%) found that Pocket Mandarin sparks their interest towards Mandarin as Pocket Mandarin makes learning Mandarin more fun and interesting. 97.3% of respondents agreed that Pocket Mandarin gave them a lot of benefits and they are interested in using Pocket Mandarin in their Mandarin learning process. 97.2% of respondents are keen to participate in using Pocket Mandarin to learn Mandarin.

Figure 1

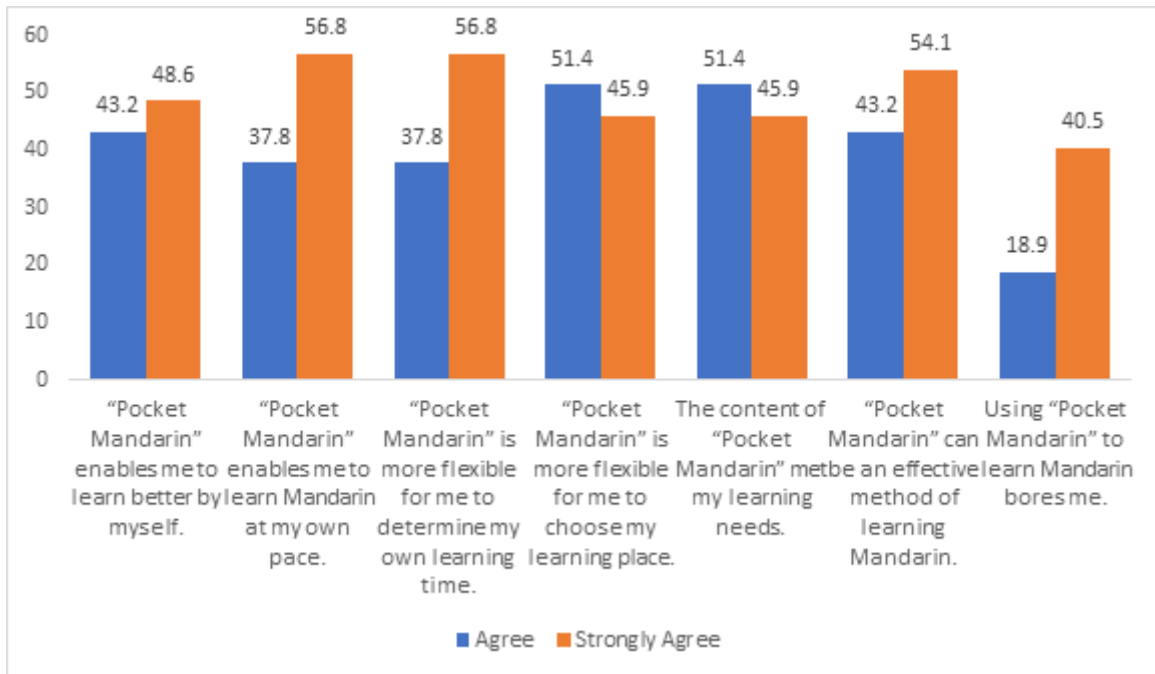*Students' motivation in using Pocket Mandarin*
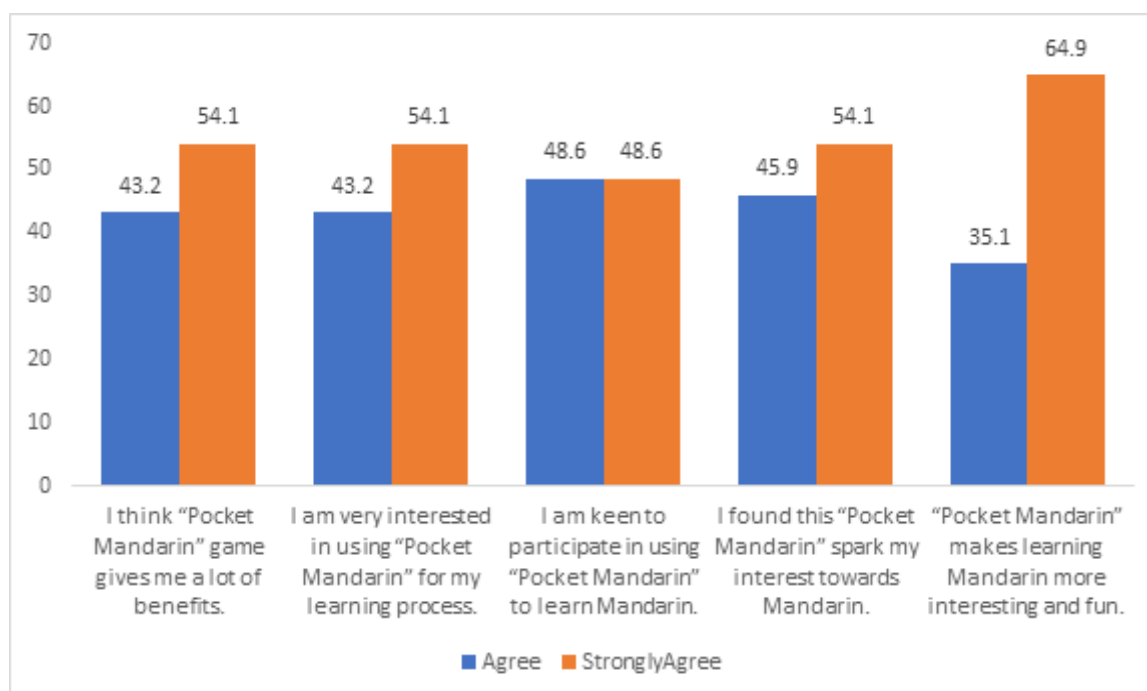
4.3 Students' attitude towards using Pocket Mandarin

Figure 2 shows students' attitude in using Pocket Mandarin. The figure shows that 97.3% of the respondents believed that Pocket Mandarin can be an effective method of learning Mandarin and therefore they agreed that the content of Pocket Mandarin met their learning needs. 91.8% of respondents believed that Pocket Mandarin enabled them to learn better by themselves. Apart from that, 94.6% of respondents agreed that they will be able to learn Mandarin at their own pace by using Pocket Mandarin due to its flexibility for learners to determine their learning time (94.6%) and learning place (97.3%).

Figure 2

Students' attitude in using Pocket Mandarin

4.4 Students' cognitive development in using Pocket Mandarin

Figure 3

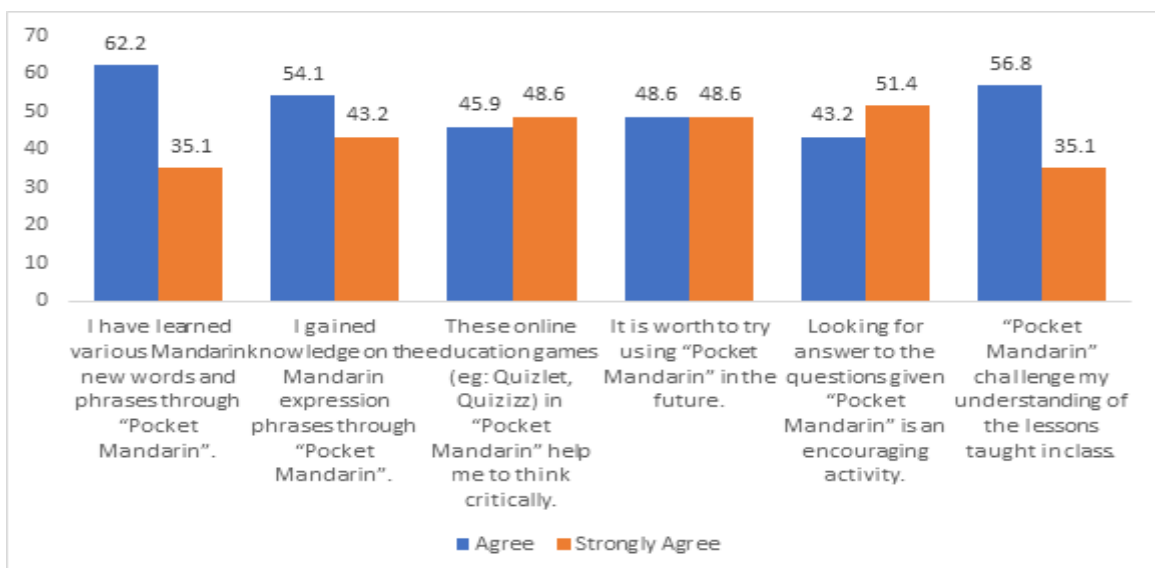*Students' cognitive development in using Pocket Mandarin*

Figure 3 presents students' cognitive development while using Pocket Mandarin to learn Mandarin. The statistics showed that 97.3% responded that they have learned various new Mandarin words, phrases and ex-

pression phrases through Pocket Mandarin. 97.2% responded that it is worth using Pocket Mandarin in future. 94.6% of the respondents viewed that looking at answers to the questions given in Pocket Mandarin was an encouraging activity. Moreover, 94.5% of respondents perceived that online education games included in Pocket Mandarin helped them to think critically and 91.9% of respondents agreed that Pocket Mandarin challenged their understanding of the lessons taught in class.

4.5 Students' perception of design and interface of Pocket Mandarin

Student perceptions of the design and interface of Pocket Mandarin are shown in Figure 4. All respondents agreed that multimedia elements in Pocket Mandarin are interesting and they also agreed that information provided in Pocket Mandarin is informative. 97.3% of respondents viewed the use of colour and design layout in Pocket Mandarin as attractive. Moreover, 94.5% of respondents agreed that they only needed a very short time to know how Pocket Mandarin functions as 94.5% and 97.3% of respondents agreed that the instructions provided in Pocket Mandarin are easy to understand and navigation is easy.

Figure 4

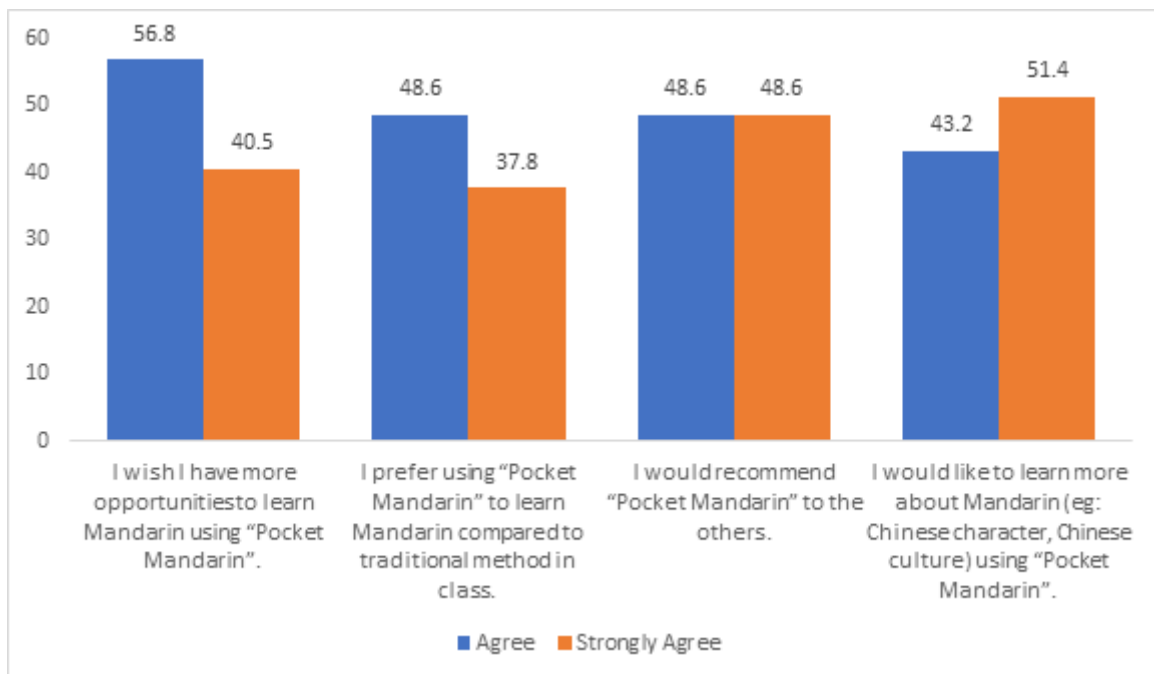*Students' perception towards design and interface of Pocket Mandarin*
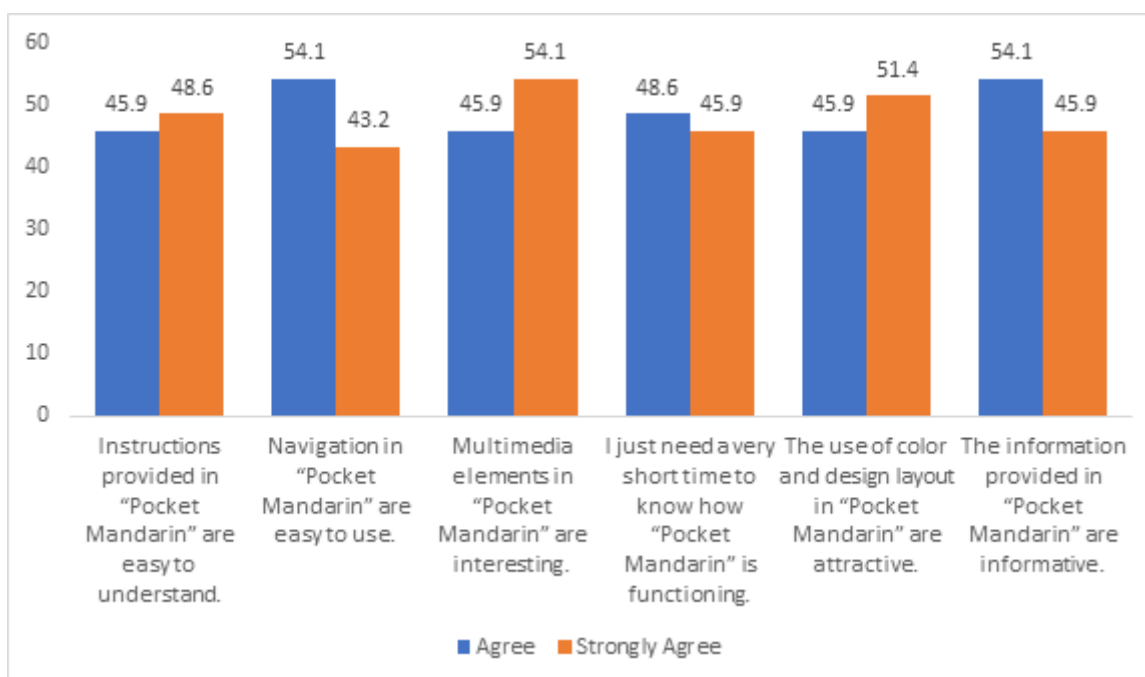
4.6 Students' expectations in using Pocket Mandarin

Students' expectations in using Pocket Mandarin to learn Mandarin are shown in Figure 5. The data shows that 97.3% of the students wished that they had more opportunity to use Pocket Mandarin in learning Mandarin. 86.4% of respondents preferred to use Pocket Mandarin while learning Mandarin compared to traditional methods in class. 94.6% responded that they would like to learn more about Mandarin using Pocket Mandarin. Lastly, 97.2% of respondents would recommend Pocket Mandarin to others.

Figure 5

Students' expectations in using Pocket Mandarin

4.7 Overall results from students' responses

Overall, the data shows that the students provided positive feedback on the use of Pocket Mandarin as a tool for online learning. Table 2 below shows the overall results for responses, together with the mean and standard deviation.

Table 2 shows the overall response of the students in terms of students' motivation (m=4.53, SD=.532), students' attitude (m=4.34, SD=.705), students' cognitive development (m=4.36, SD=.809), students' perceptions of design and interface of Pocket Mandarin (m=4.45, SD=.553) and students' expectations (m=4.37, SD=.597). The mean value shows that overall, the students' responses were favourable for Pocket Mandarin. The data also indicates that the majority of the students also "Agree" or "Strongly Agree" with the use of Pocket Mandarin.

Table 2

Overall results from students' responses

No.	Items	N	A	SA	Mean	SD
1	Students' motivation in using Pocket Mandarin	1.62	43.2	55.16	4.53	.532
2	Students' attitude in using Pocket Mandarin	6.17	40.5	43.2	4.34	.705
3	Students' cognitive development in using Pocket Mandarin	3.6	51.8	43.6	4.36	.809
4	Students' perceptions of design and interface of Pocket Mandarin	2.7	49.0	48.1	4.45	.553
5	Students' expectation in using Pocket Mandarin	6.0	49.3	44.5	4.37	.597

*SA= Strongly Agree, A=Agree, N= Neutral, SD= Standard Deviation

An open-ended survey was also administered to support the findings of the Google form survey. In the survey, all the respondents (100 percent) stated that they found 'Pocket Mandarin' interesting. When they were asked why they thought it was interesting, the students commented, "The note/presentation is so attractive"; "It has a lot of useful and fun games"; "The quiz can sharpen our understanding"; "I am able to understand faster"; "I can learn without getting bored"; "It is an effective learning strategy for me".

The respondents were also asked whether they thought 'Pocket Mandarin' is an effective method to learn Mandarin. All the respondents (100 percent) stated that they think 'Pocket Mandarin' is an effective method to learn Mandarin. When they were asked why they thought 'Pocket Mandarin' is an effective method to learn Mandarin, they replied, "…because it gives me meanings about the words in Mandarin that I do not know, and it is easy for me to remember it"; "…is effective as the flashcards provide clear examples of the words and the pronunciations of the words. The exercises were effective to as it is engaging and fun"; "…is effective because it has activities that caught my attention to learn mandarin more easily and quickly"; "I was also able to play with my classmates"; "As it is an online platform, I can play it anywhere and anytime".

Finally, the respondents were asked how 'Pocket Mandarin' motivated them to learn Mandarin. The respondents replied, "Flashcard is the most impressive tools to me because it makes me know that both words in English and Mandarin, so if I want do the exercise it easy to me to refer at it"; "…teach me step by step and provide pronunciation of vocabulary. So, it's really motivates me to learn Mandarin better"; "The exercises also motivate me as the time limit make it interesting but not too hard".

The open-ended survey thus, supported the results of the Google form survey that students were motivated to learn Mandarin using 'Pocket Mandarin' and their attitude towards it is generally positive.

5.0 Discussion

This study looked at the use of Pocket Mandarin during the Open and Distance Learning (ODL) session. Since the lockdown and the Education Ministry's order that all learning institutions should cease to operate physically, online learning has been vigorously implemented in most parts of the world. The study focused on a solution to ease the teaching and learning of Mandarin among MFL learners at the tertiary level by means of an innovative and interactive online learning platform to manage the learning of Mandarin at the beginner level. Five aspects were considered for the study which included students' motivation, students' attitude, students' cognitive development, students' perceptions of the design and interface of Pocket Mandarin and students' expectations in using Pocket Mandarin. The objectives of the study were (1) to determine whether 'Pocket Mandarin' motivates students to learn Mandarin; (2) to determine whether 'Pocket Mandarin' facilitate the cognitive development of students; and (3) To find out to what extend 'Pocket Mandarin' is effective in learning Mandarin.

5.1 'Pocket Mandarin' and students' motivation and attitude to learn Mandarin

Based on the findings of the Google Form survey, it was found that Pocket Mandarin motivated student learning of the Mandarin language. The students found the games beneficial, they found it interesting for their learning process, and it made them keen to learn Mandarin. Further, their interests were sparked and learning became fun for them. The study also found that students' attitude towards using Pocket Mandarin was positive. They believed that Pocket Mandarin promoted independent learning by themselves, enabling them to learn at their own pace and provided more flexible learning time. The content was suitable and they considered it met their learning needs. They found it effective and not boring to learn. This is similar to earlier findings by Wen et. at (2020) and Suo and Suo (2020) that online flashcards and games can motivate students and provide a positive attitude. Further Suo and Suo (2020) asserted that it was vital to attract students to learn as it would help them overcome learning difficulties. This is especially so in the current home-based online learning environment that students face because of the current Covid-19 pandemic.

The open-ended survey also supported the results of the Google form survey. All the respondents said they found 'Pocket Mandarin' interesting and effective to learn Mandarin. In addition, they also responded that 'Pocket Mandarin' motivated them to learn Mandarin because the tools were impressive, the exercises were easy with step-by-step teaching and there was pronunciation of words to motivate them to learn.

5.2 'Pocket Mandarin' and students' cognitive development

The study found that the students' cognitive development in using Pocket Mandarin was favourable. The students agreed that they learnt various new words and phrases through Pocket Mandarin as well as expres-

sions. They also agreed that the online education games in Pocket Mandarin helped them think critically. They believe it will be useful in future and the activities challenged their understanding of the lessons taught. This is in line with the study by Ying et. al (2021), where online learning through flashcards helped learners increase their Mandarin vocabulary. Building the vocabulary bank to increase words for use in the Mandarin language was said to help students to master the language. Similarly, Qing and Diamantidake (2020) found that cognitive presence was important in creating a meaningful and worthwhile learning experience for students.

Besides that, students felt that the design and interface of Pocket Mandarin was able to provide ease of understanding, ease of use and interesting multimedia. The functions were not complicated and they only needed a short time to familiarize themselves with them. The colours and design as well as layout were attractive and the information was adequate. In a similar case, Ibrahim et al. (2011) found that students were highly motivated, had a positive attitude and acknowledged their cognitive abilities when provided with good design and interface which enabled them to have ease of navigation and enhanced the educational process.

This was further supported by the findings of the open-ended survey where the students found the notes and presentations easy to learn as well as the quiz sharpened their understanding. Further, they commented that the flashcards provided clear examples of the words and the pronunciations of the words. They believed they could learn easier and quicker with 'Pocket Mandarin'.

5.3 Effectiveness of 'Pocket Mandarin' in learning Mandarin

Based on the Google form survey conducted, it was found that the students wanted more opportunities to use Pocket Mandarin to learn Mandarin. They also had a preference for Pocket Mandarin compared to conventional physical classroom lessons. When asked if they would recommend it to others, they agreed that they would. While Pocket Mandarin was developed and designed to suit the specific needs of students during the ODL session where face-to-face classroom sessions were impossible, the students' comments from the open-ended survey assured that they had found it effective in terms of how it made learning Mandarin fun and interesting in an online learning environment. This is attested by research on online Mandarin lessons in London where it was found that students' experience based on cognitive, social and teaching presence played an important part in creating a meaningful and worthwhile learning experience (Qing & Diamantidaki, 2020).

Similarly, the students were asked if they thought 'Pocket Mandarin' is an effective method to learn Mandarin. All the students in the survey answered that they found it an effective method to learn Mandarin for the reasons that it provides meaning to words, the flashcards helped them remember better, it was engaging and fun and they were able to learn easily and quickly. Other research on the effectiveness of flashcards in

learning a foreign language have also attested to this (Komachali & Khodareza, 2012; Wen et al.,2020; Ying et al., 2021).

6.0 Conclusion and Recommendation

It can thus be concluded that there is great potential in using 'Pocket Mandarin' for online learning as the feedback from the surveys showed that students enjoyed the lessons prepared and found it fun. Many studies have testified to the use of online platforms in teaching and learning. In effect, the current pandemic has positioned education to take place in the online mode. Previous studies have attested to the use of online language learning and its advantages (Gao and Zhang, 2020; Jong and Tan, 2021; Kulik and Fletcher, 2016; Levis et al., 2016). Educational games and quizzes have had numerous positive effects on students' learning (Ibrahim et al., 2011). As such, the use of 'Pocket Mandarin' with its multiple interfaces of games, lessons, flashcards, quizzes, audios and videos could provide meaningful and dynamic learning of Mandarin as a foreign language.

It is thus recommended that more lessons be prepared using the same formats as 'Pocket Mandarin' not just for the beginner level but also for the intermediate and advanced levels as well. This study only focused on students at the tertiary level taking a degree course and learning Mandarin as a foreign language. In future, it should also be extended to students at diploma as well as high school levels where the Mandarin language is offered as a subject.

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