Identifying the Level of Perceived Learning Engagement and Motivation in Mandarin: An Application of Mobile-Assisted Language Learning (MALL) Classes

Nurul Ain Chua, Azza Jauhar Ahmad Tajuddin, Che Hasniza Che Noh, Mohd Yusri Ibrahim, Roswati Abdul Rashid and Mazlina Ahmad,
Center for Foundation and Continuing Education
Universiti Malaysia Terengganu
21030 Kuala Nerus, Terengganu, Malaysia
ain.chua@umt.edu.my, azzajauhar@umt.edu.my, roswati@umt.edu.my, mazlinaahmad@umt.edu.my,

Goh Ying Soon
Universiti Teknologi MARA
54000 Kuala Lumpur,
Wilayah Persekutuan Kuala Lumpur, Malaysia
gohyiI41@tganu.uitm.edu.my

Jumadil Saputra
Faculty of Business, Economics and Social Development
Universiti Malaysia Terengganu
21030 Kuala Nerus, Terengganu, Malaysia
jumadil.saputra@umt.edu.my

Abstract
Educators are the crucial factor in teaching and learning activities. They should find numerous approaches to assist, engage, and motivate the students. As teachers, they need strong content knowledge and understand students' uniqueness, whether in person or learning preferences. Today, the mobile phone is an excellent tool to conduct online learning activities. The present study seeks to identify the level of perceived learning engagement and motivation in learning Mandarin based on Mobile-Assisted Language Learning (MALL). This study used a quantitative approach through a survey. All the Level II mandarin students have participated in this study. The data was analysed using descriptive statistical analysis, including frequency and percentage, to describe the level of perceived learning engagement and motivation in learning Mandarin. This study indicates that students enjoyed using the apps to enhance and ease them to learn Mandarin. Students nevertheless thought that language practice was helpful. Language games also took place during the process, as well as the use of mobile apps. After integrating mobile apps in the Mandarin lesson, the learners had oral experiences with native speakers to test their oral performance. Also, three categories of mobile apps were identified. Besides, this study discusses how the resources and other language activities affect students' interest, enthusiasm, and commitment to pursue Mandarin. In conclusion, this study successfully identified the level of perceived learning engagement and motivation in learning Mandarin based on MALL.

Keywords
Mobile-Assisted Language Learning (MALL), smartphone applications, learning engagement and motivation.

1. Introduction

Educators are concerned with finding approaches to help, engage and motivate students to learn (Ramsden, 2003). It is now vital that a teacher acquires a strong knowledge of content and understands the differences between students, whether in person or learning preferences (Ghazali et al., 2019; Talib et al., 2019; Ibrahim et al., 2020). Also, he/she also implements and adjusts appropriate instruction skills based on the knowledge of the uniqueness of each child (Sagor, 2000). As a new foreign language educator, there is a desire to suggest a practical teaching approach to engage and inspire students to improve self-pedagogical skills. Today, everybody uses the most advanced smartphone regularly, and carrying a mobile device has become a habit.

Nevertheless, Z-generation is now mostly higher education graduates. Besides, many studies have shown that these digital natives can make mobile use of their learning. The teaching and learning process on mobile phones has been successfully improved (Norazah, Mohamed & Melor, 2010). The outcomes of mobile learning activities are effective ways to motivate students and promote interaction. There have been quite a few research speeches about the use of technology in learning Mandarin. However, teachers' teaching methods (Teh, Saedah, & Wong, 2014) still to be blamed for students' inability to perform good oral performances. In the study, the educators were dedicated and motivated to provide the students with a content area. However, the teachers needed to offer all the material quickly, which has always made the students lack time to practice their oral skills.

The same situation happened in China; Zhang (2009) pointed out that English learners in China could not speak English fluently because they lacked experiences that created a lack of motivation for speaking. As a language teacher, how can we ensure that students are exposed regularly to teaching and learning resources everywhere and anytime? Therefore, how could we ensure that the students can cope with their learning difficulties and get support to improve their learning of Mandarin? It could perhaps the advanced mobile technologies can be the solution. Therefore, the teacher cum researcher would like to explore students' motivation in Mobile-Assisted Language Learning to determine how this approach can resolve teaching method and time constraint problem.

2. Literature Review

2.1 Second Language Acquisition (SLA)

The age of globalising mobile technology affects every aspect of human life. Therefore, higher education requires innovative pedagogical practices to produce more competitive students. Yedla (2013) found that technology has supported the consistency and productivity of the teaching-learning process and the accessibility of accurate knowledge at any time and anywhere compared to conventional classes. Mobile learning means taking place when the learner is not at a set, predetermined location or the learner 'takes advantage of the learning opportunities provided by mobile technologies' (O'Malley et al., 2003). Mobile Learning is about learner mobility (Kukulska & Traxler, 2005), which means learning can happen anywhere and anytime (Kukulska, 2013). These excellent characteristics can solve the problem of traditional teaching method and time constraints.

Flanders Classroom Research (1970) supported the claim that time is a factor in acquiring a second/foreign language. The details showed the teacher and students' involvement in classroom activities. Seventy per cent of the teachers spoke, leaving just 30 per cent of the 70 per cent of the students ' talking time and 21 per cent of the students' speaking time. Translated into real-time, four years of 15-semester and 60-minute class meet five days a week, resulting in 600 hours of teaching time in the classroom. Suppose 21 per cent of the speaking time was split evenly between 25 students per class, giving each student a mere 5.04 hours of speaking time in class over four years of language instruction. The result showed that speaking in practice is the crucial part that teachers often overlook.

2.2 Mobile-Assisted Language Learning(MALL) Pedagogical Skill

Based on mobile pedagogy by Kukulska-hulme, Norris, & Donohue (2015), the mobile pedagogy language teaching approach is based on the belief that teachers and learners are active respondents in developing language learning. Students are encouraged to engage with the learning materials through experimentation, group discussion, and other language activities. In language teaching and learning, according to Kukulska-hulme et al. (2015), an active participant refers to learners who assume responsibility for their education, while instructors allow this to be a long-standing philosophy of good language teaching.

In mobile pedagogy, students carry powerful advanced portable devices that enable the implementation of active learning philosophy. Multi-tasks could be accomplished, like creating and sharing multimodal texts and casual contact with anybody from anywhere. Also, capture language usage outside the classroom, analyse language production and learning needs, construct artefacts and share them with others. Besides, there is, of course, evidence of progress in various settings in a variety of media (Kukulska-hulme et al., 2015).

2.3 Principles of MALL

Based on many MALL studies, Stockwell & Hubbard (2013) identified ten principles as recommendations for virtual pedagogy. These laws aimed at directing and preventing errors and deviations from happening. Table 1 presents ten principles that teachers will recognise as guidelines for implementing their mobile teaching in the classroom (Stockwell & Hubbard, 2013).

Table 1: Principles of mobile pedagogy

PRINCIPLE	ITEM
1	Distinguish the affordances and limitations
2	Limit multi-tasking and environmental distractions
3	Push, but respect
4	Strive to maintain equity
5	Differences in language learners
6	Existing and cultural usage
7	Short and succinct of activities and tasks
8	Concept of mobility
9	Guidance
10	Recognise and accommodate multiple stakeholders

Principle one applies to all communication activities, tasks and applications that should differentiate between the strength and weakness of mobile devices, the situation, language learning research and theory in achieving the learning objective (Reinders & Hubbard, 2013). Principle two suggests that teachers can restrict many activities and distractions to the classroom, as many digital natives are not successful at multi-tasking (Ophir, Nass, & Wagner, 2009). Three theory is alluding to travelling with thought. Principle three, a push, has the potential to encourage students to learn (Stockwell, 2013), but students have their views on it. The practitioner should, therefore, be in charge of the push motion. Efforts to preserve equality (Elias, 2011) are the fourth principle. Besides having a mobile device and computer, the researcher should consider the reliability, availability, usability, and cost during the training process.

Principle five, for all possible situations, an alternate plan must be in place. The researcher should consider the disparities in learning between learners (Chun, 2001; Heift, 2002) and the variations between expensive and inexpensive devices. The sixth principle refers to the current use of mobile devices. The instructor needs to lead the students to develop the new skills necessary to prepare them for school. The activities and tasks of MALL should be short, and the following principle should be concise. Elias (2011) advised adding more extensive tasks or activities should be divided into smaller, more coherent parts, as any common obstacles will arise during m-learning. The 8th principle is the need to consider learning mobility and technological mobility (Kukulska-Hulme, 2013). The instructor should also adopt all language learning activities to technology and the environment. Teachers need to develop tasks that can offset the expense of all mobile learning devices and the time allocated to each job. Principle nine states that students need guidance on how to apply (Chen, 2013). In his research on the argument for apprenticeships in other Computer-Assisted Language Learning contexts, Hubbard (2013) showed that it was not excluded from this challenge either. The last principle is, a teacher needs to recognise and accommodate multiple stakeholders.

2.4 The previous study in MALL

Mobile devices have changed teaching methods and strategies for learning foreign languages (Abdous, Camarena & Facer 2009). Technology also positively impacts student test scores; mobile phones can shape student positive behaviour (Fryer, 2014). For example, Levy and Kennedy (2005) also provided a short message service (SMS) for Italian vocabulary instruction to send word pieces of knowledge and request feedback. 94.4% of students responded positively to the project. Kiernan and Aizawa (2004) examined the use of mobile phones for task-based language learning. They concluded that the integration of tasks could promote the acquisition of L2 and the emphasis on meaning among learners.

Many studies explored the application of technology in the Mandarin language. For example, Tian et al. (2010) found that mobile learning games can play a vital role in acquiring Chinese literacy skills. They found that mobile games could improve children's knowledge of Chinese characters during gameplay through group learning activities such as controversy, judgment, and self-correction. Niu, Liu, Lin, Zhu, & Wang (2014) researched mobile-assisted Chinese character game in learning Chinese characters. Wang (2013) found that providing materials using mobile devices is a positive language experience when reading and learning grammar. However, other specific factors have limited the effectiveness of mobile learning, such as providing attractive learning materials, proper coaching, student participation, the need for incentives, respect for privacy, and a secure and secure mobile technology learning environment. In oral proceedings, Lin, Kao, & Lan (2016) found that the knowledge level of Mandarin students

affected the changes and attitudes of learners within the real-world context community. Finding means the use of mobile apps influences Mandarin learning outputs and views. In a nutshell, several efforts proved that technology helped in second - language learning.

There is also much work going on MALL in language learning, but there is not much emphasis on oral analysis. The explanation is that many educators seem to believe that computer software and the internet could not easily support listening and speaking or that it was no better than face-to-face contact (Egbert, 2005). However, Egbert (2005) also pointed out that computer technology could help students interact with others and native speakers in various forums, enabling learners to practice and develop their listening and speaking skills. Networking enables learners to be bilingual, such as Skype or MSN, online or video conferencing, enabling learners to communicate with native speakers and more experienced second-language learners worldwide. Besides, Klassen and Milton (1999) found that students improved their listening skills more significantly in multimedia-enhanced mode than traditional. Moreover, Lu, Hou, & Huang (2010) perceived that a teaching model incorporating a student-centred approach and a technology-aided learning environment was instrumental in improving students ' communicative language skills, particularly their ability to speak.

2.5 Oral performances

Foster and Skehan (1996) suggested oral success in three respects: fluency, precision, and difficulty. Te measurements of complexity, including the T-unit complexity ratio and the dependent clause ratio. The calculation of the value of global grammatical consistency (i.e., recognition of all forms of error) was (1) the proportion of error-free T-units, and (2) the score of 70%. (Skehan & Foster, 1998). Fluency was measured using two indices named breakdown and fluency repair (Skehan, 2001). While pause was the basis for fluency breakdown, fluency repair was the interruption of the expressed message. For the scope of this study, the researcher will analyse the fluency and accuracy aspects (Foster and Skehan (1996) produced by each student.

3. Methodology

The preliminary study was a survey that examined the respondents' satisfaction with their experience after attending the MALL Mandarin lessons. It was because Sharples (2000) suggested that a helpful way to approach the assessment of MALL technology is to address its usability (does it work?), effectiveness (does it improve learning?) and satisfaction (do you like it?). The questionnaire distributed to students in the 14th week, which is the final lesson of their Mandarin class. This research aims to include the explanations and interpretation of a small community that went through the MALL Mandarin lesson for the entire semester. Questions on an open-ended, multi-choice and interval scale created to uncover the smartphone apps used during lessons. Also, to explore their level of motivation and satisfaction with mobile apps for learning Mandarin.

3.1 Respondents

A group of 14 Mandarin Level II students participated in this survey. Mandarin is an elective course at this university, and all students are accessible and willing to register for the class from different programmes. The study aimed to gain students' view on how MALL can overcome the barriers of traditional delivery methods and time constraints during the Mandarin instruction process. Can the appropriate smartphone applications ease Mandarin teaching, engage and motivate the learners to pursue excellent oral performance in Mandarin.

3.2 Instrument and procedure

This study is cross-sectional research. The researcher developed the questionnaire based on MALL implementation that formed in a mandarin class. There are 56 questions divided into four sections with open-ended, multiple-choice, and interval questions. Section A is about students' history; part B is regarding smartphone applications use during the MALL lecture. The relationship between smartphone applications usage and learners' behaviour is in part C. The last segment concerned respondents perceptions of MALL's effectiveness and satisfaction in the Mandarin class. The questionnaire was distributed to the students through their smartphones after the lecture. The researcher used a quantitative approach to evaluate students' answers.

4. Results and Discussion

4.1 Demographic Information

The respondents were Science Stream students. There were four Indians, and eleven are Malays. All of the respondents had previously taken Mandarin I. Seven of them scored A, and four scored A-, one scored B+, B and B-

and the student scored C for her Mandarin I. The result showed that most of them performed well in their Mandarin I. More than half (57%) of the students agreed that they were studying Mandarin for use in their future careers and could speak the language fluently with the other. The result indicated that most of the respondents learn Mandarin because of their future, not curiosity.

4.2 Smartphone Applications Usage

In this study, all applications were categorised into three leading applications, Software Application (SWA), Web-Based Application (WBA) and Socialization Application (SCA).

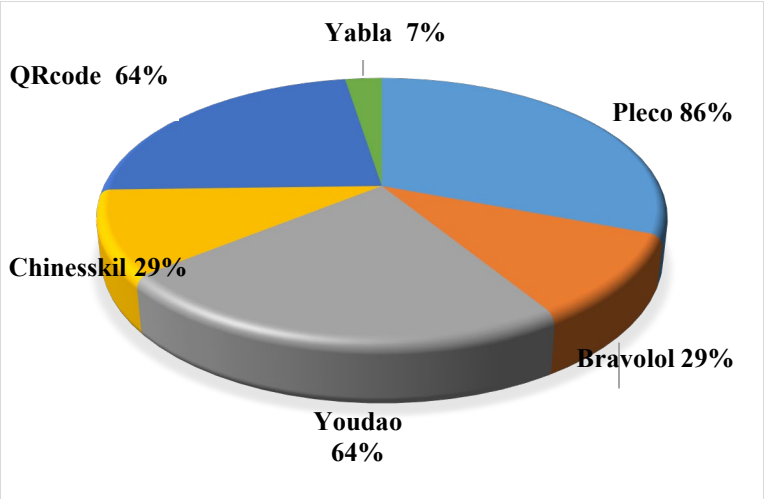

Figure 2. types of SWA

Figure 2 shows that Pleco (86 per cent) was the most favoured SWA found, accompanied by Bravolol (29 per cent), Youdao (64 per cent), Chinesskill(29 per cent), QR barcode scanner (64 per cent) and Yabla (7 per cent). Pleco was the most common SWA among respondents. 71% appreciated using convenient, comfortable, beneficial and friendly apps for learning Mandarin. The students saw that Pleco supported them a lot in discovering and learning new words. This study method is fitting and helpful as most of the reviews have concluded that learning vocabulary is the critical and most challenging aspect of Mandarin learning (Fang & Legault 2015).

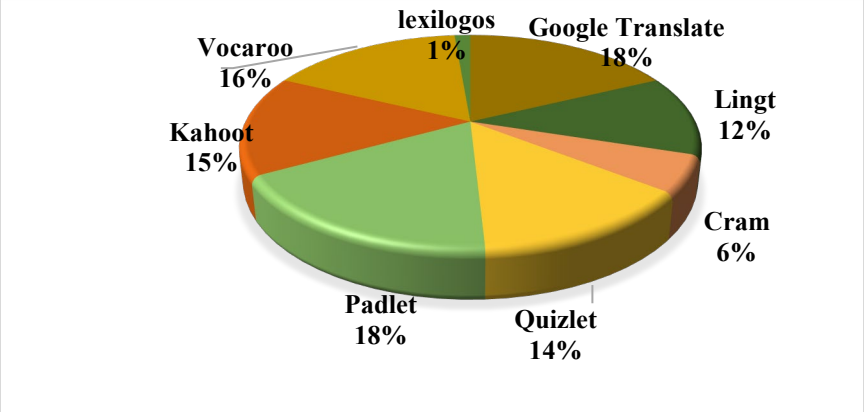

Figure 3. types of WBA

Figure 3 captures the student SWAs used were Chinese-Tools (43 per cent), Google Translate (93 per cent), Lingt (63 per cent), Cram (29 per cent), Quizlet (71 per cent), Padlet (93 per cent), Kahoot (79 per cent), Vocaroo (86 per cent), and Lexilogos (7 per cent). Students found many apps from the survey, and all the apps helped students learn and accomplish work faster and easier. During the lesson, the students were active and enjoyed their work. The result shows that students engaged in contributing their ideas and that static learning has changed to a dynamic condition. This active learning has aroused the interest of students compared to traditional static aided teaching tools.

As far as the SCA is concerned, all respondents mentioned most of the time, they used WhatsApp during the instruction process. As of today, WhatsApp was one of the essential tools (Ma, 2017), which did not bound by time and space but took place anywhere and at any time with access to the internet. WhatsApp also allows users to share text, voice recordings and files, and easy access to telecommunications services provided in Malaysia. Quick and easy access to WhatsApp enables users to send all the information and content needed. Also, students can share and monitor their collaborative work via the WhatsApp web, which is available online. One of the efforts in this study was that the teacher sent a flashcard link before the face to face lessons. Students were requested to learn new vocabulary. The apps promoted their understanding of new content. To sum up, SCA seems able to address the shortfall in time, particularly by reviewing and revising all the material added to motivate students in learning Mandarin.

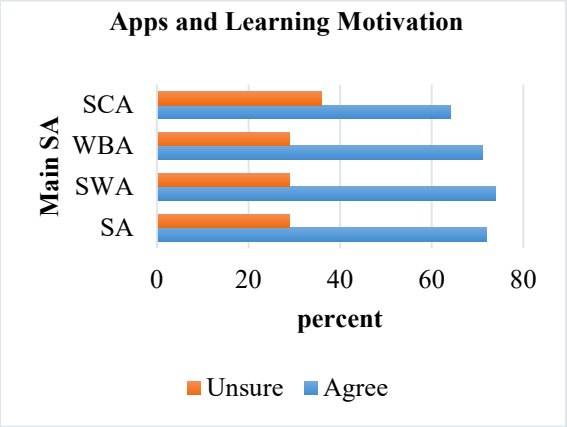

Figure 4. Apps and Learning Motivation

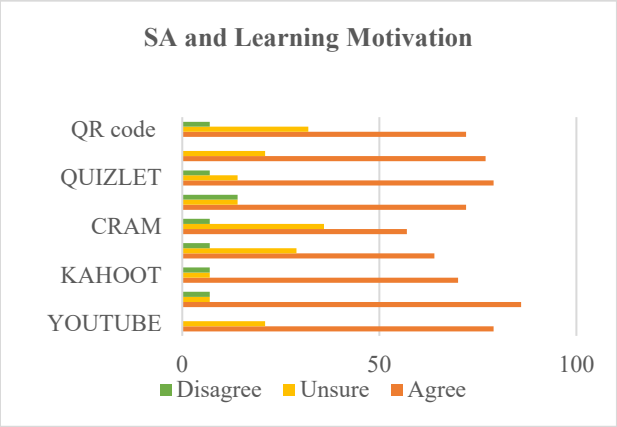

Figure 5. Smartphone Apps(SA) and Learning Motivation

Figure 4 shows the motivation perceptions of students in the use of SWA, WBA and SCA apps. The majority of students (74 per cent) viewed that they enjoyed learning Mandarin using SWA apps. Twenty-nine per cent of them were not optimistic about the motivational effect of the devices. Seventy-one per cent agreed they were motivated by the WBA. However, 29 of them unsure about that.

In contrast, in SCA: 64 per cent accepted, 36 per cent were unsure. In short, all apps used during Mandarin lessons helped students to learn Mandarin. The students saw SWA in detail as practical, fantastic, fun, exciting, and beautiful apps, making them easy to use and complete their learning tasks. However, they desired instructions on how to use them. WBA always supported students' learning. They could discover and know more software, and the way to learn became faster and easier. The SCA helped students to communicate and exchange information easily. As a result, applications selected by teachers and students fulfil the need for MALL model to concentrate on the unique versatility of mobile devices. All feedback indicated a positive effect on Mandarin learning.

Figure 5 shows the students ' views on the details of all WBA types. The apps used included QR code: 72 per cent agreed, 21 per cent unsure, and 7 per cent disagreed; Mynemo: 77 per cent agreed, 21 per cent unsure; Quizlet: 79 per cent agreed, 14 per cent unsure, and 7 per cent disagreed, Vocaroo: 72 per cent agreed, 14 per cent unsure and 14 per cent disagreed, Cram: 57 per cent agreed, 36 per cent unsure and 7 per cent disagreed, Lingt: 64 per cent agreed, 29 per cent agreed. Responses to open-ended questions show students' voices on the use of apps. The apps were accessible to share, access, and send all of their tasks and assignments online or offline. Besides, students can submit all recorded audios or videos by merely sending a barcode that saves much storage on smartphones. Students argued that apps eased their work, assigned tasks to them, eased to share, downloaded, modified, and saved their smartphone data. The QR barcode scanner is an app that follows the principle of mobility. However, when a file is changed and sent, a secure Wi-Fi connection is required. To conclude, all the WBAs inspired the respondents to learn Mandarin.

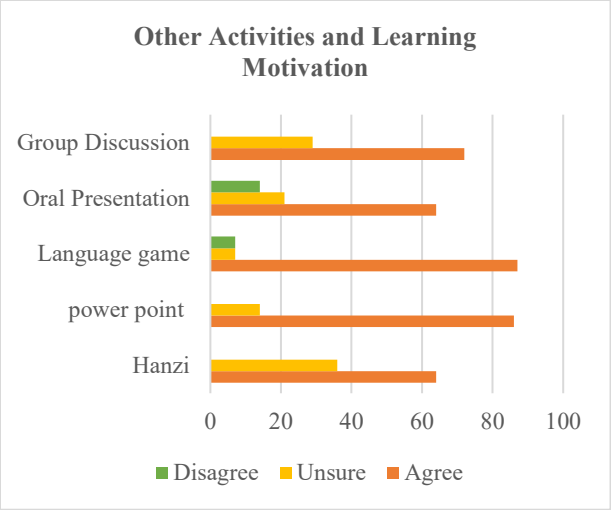

Figure 6. activities and motivation

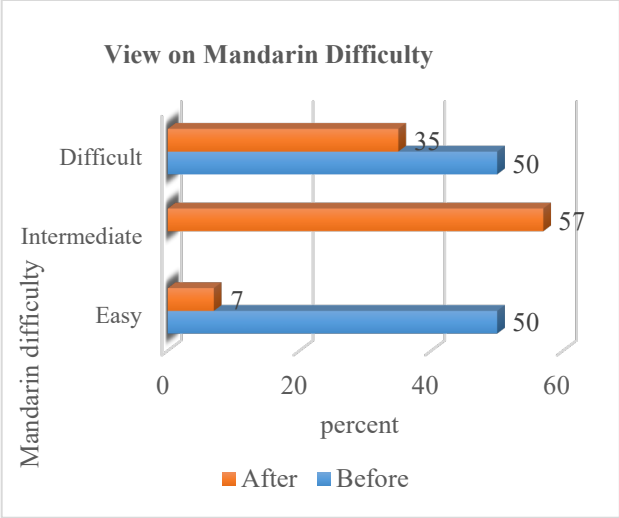

Figure 7. Mandarin difficulty

Figure 6 shows that the other MALL teaching tasks include group conversation, student oral presentation, language game, PowerPoint and Chinese learning characters. All of these learning activities required students to use a smartphone. Fourteen per cent of students agreed that they were motivated by group discussions, and 29 per cent disagreed with their views. The students found that the power of the group discussion provided them with an opportunity to talk, share information and encourage them to understand. Many of the students (64%) accepted that this action was beneficial in learning Mandarin in the oral presentation. Students saw that they had a chance to learn and understand Mandarin comfortably. The other ratings were linguistic games: 87 per cent agreed, 7 per cent disagreed, and 7 per cent were uncertain. They saw that it was inspiring. PowerPoint learning: 86% approved, and 14 were unsure. Students thought it was a conventional approach, but most of them liked this way of learning. The result of the question and response score was 79 per cent agreed, 14 are unsure, and 7 per cent disagreed.

Most of them thought it would give them a chance to remember what they learned. Finally, the activity of Chinese character learning (Hanzi): 64 per cent of students agreed that Hanzi learning was a motivation factor for learning Mandarin. In summary, all the students like the MALL Mandarin learning experience. The result shows that 50 per cent of students considered Mandarin is relatively easy to learn before studying Mandarin. However, after a semester of Mandarin learning, perceptions have changed. Only a few (21 per cent) thought it was not easy. No one believed that Mandarin was simple, 35 per cent recognised Mandarin, and most of them were unsure about their points of view.

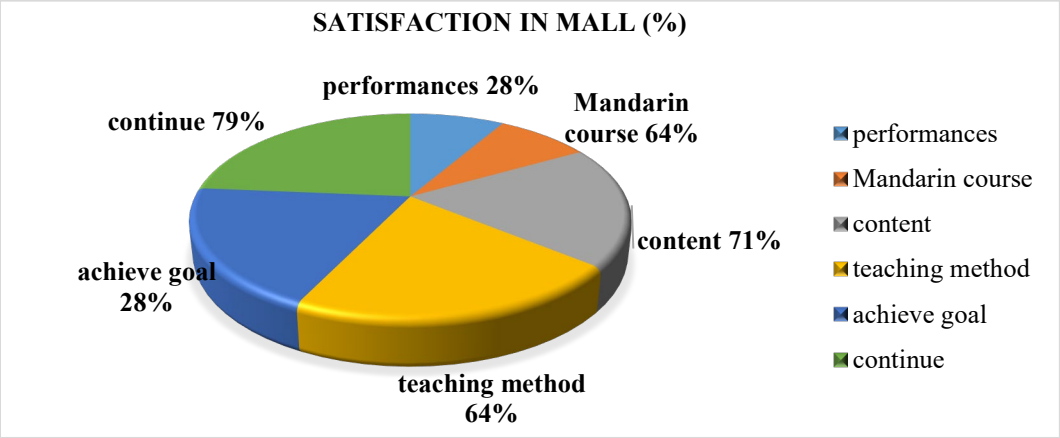

Figure 8. Students' Satisfaction in Learning Mandarin

Figure 8 shows that over half (64 per cent) of students were satisfied with the Mandarin course. There was only 7% disagreement with that. For those who were pleased with the teaching process, 64 per cent agreed that they were happy with the material. Students were not very sure of their achievement in terms of performance, as only 28 per cent agreed with the statement. Only a few of them (28%) have achieved their learning goals. However, most (79 per

cent) felt that they would continue learning Mandarin. MALL was a forward-looking approach to teaching foreign languages, particularly students of digital natives. Some critical factors such as teaching skills, content knowledge, technical skills and student preferences need to be taken into consideration to engage and inspire students in a long - term learning process,

5. Conclusion

Mandarin mobile phone use is beneficial, and learning happens much easier and faster. MALL was an inspiring approach to transform the traditional environment into an active learning environment in the Mandarin classroom. This approach has responded to Ramsden's Theory 3, in which the teacher must provide the content in a more attractive manner that engages the student. The finding showed that all students want to continue to learn Mandarin at the next level. This learning method gave access to a wide variety of apps via a mobile phone, allowing learning everywhere and at all times. All students can complete their language tasks in a shorter time, record and load all videos more conveniently in the entire setting. The results showed that the majority of students learned and spoke through SWA and WBA. Therefore, this study seeks to improve students' performance through the MALL approach and enhance the researcher's pedagogical skills. Educators need to be alert with multi-tasking is limited, respect is encouraged, and students diversity. Their learning preference is different and unique. To involve and inspire students in language learning, an instructor needs to continuously find ways to stimulate various MALL learning activities that promote interests and encourage students to learn.

References

Abdous, M., Camarena, M. M., & Facer, B. R. (2009). MALL technology: Use of academic podcasting in the foreign language classroom. *ReCALL*, 21(1), 76–95.

Chen, X.-B., (2013). Tablets for informal language learning: Student usage and attitudes. *Language Learning & Technology*, 17(1), 20-36.

Chun, D. (2001). L2 reading on the web: Strategies for accessing information in hypermedia. *Computer Assisted Language Learning*, 14(5), 367-403.

Egbert, J. (2005). *CALL Essentials*: Principles and Practice in CALL Classrooms. Alexandria, VA, the USA: Teachers of English to Speakers of Other Languages, Inc.

Elias, T. (2011). Universal instructional design principles for mobile learning. *International Review of Research in Open and Distance Learning*, 12(2), 143-156. Retrieved from http://www.eric.ed.gov/PDFS/EJ920738.pdf.

Fang, Y. L. S., & Legault, J. (2015). Second language acquisition of Mandarin Chinese vocabulary: context of learning effects. *Educational Technology Research and Development*, 63(5), 671–690. http://doi.org/10.1007/s11423-015-9380-y

Flanders, Ned. (1970). *Analysing Teaching Behaviour*. Reading, MA: Addison Wesley.

Foster, P., & Skehan, P. (2013). Anticipating a post-task activity: The effects on accuracy, complexity, and fluency of second language performance. *Canadian Modern Language Review/ La Revue Canadienne Des Langues Vivantes*, 69(3), 249–273. doi:10.3138/cmlr.69.3.249

Fryer Jr., R. G. (2013). Information and Student Achievement: Evidence from a Cellular Phone Experiment. *NBER Working Paper*.

Ghazali, N., Omar, M.C., Saputra, J. (2019). Teachers' knowledge, skill and self-importance in the implementation of english literacy. Opcion, 35(Special Issue 19), pp. 1787–1797.

Heift, T (2002). Learner control and error correction in ICALL: Browsers, peekers, and adamants. *CALICO Journal*, 19(2), 295-313.

Hubbard, P. (2013). Making a case for learner training in technology enhanced language learning environments. *CALICO Journal*, 30(2), 163-178.

Ibrahim, R.Z.A.R., Saputra, J., Rohaizad, N.A.A., Johar, S.S. (2020). The effects of work-family conflict on teachers' job satisfaction: A study in the East Coast of Malaysia. International Journal of Innovation, Creativity and Change, 13(3), pp. 542–556.

Kiernan, P. J., & Aizawa, K. (2004). Cell phones in task based learning: Are cell phones useful language learning tools? *ReCALL*, 16(1), 71-84.

Klassen, J. and Milton, P. (1999) Enhancing English language skills using multimedia: Tried and tested. *Computer Assisted Language Learning*, 12(3): 289–308.

Kukulska-Hulme, A. (2013). *Mobile-assisted language learning*. In C. Chapelle (Ed.), The encyclopedia of applied linguistics (pp. 3701-3709). New York: Wiley.

Kukulska-Hulme, A., & Traxler, J. (2005). *Mobile Teaching and Learning. Mobile Learning: A Handbook for Educators and Trainers*, 42–61. http://doi.org/10.1111/j.1467-8527.2009.437_6.x

Kukulska-hulme, A., Norris, L., & Donohue, J. (2015). *Mobile pedagogy for English language teaching* : a guide for teachers Other Mobile pedagogy for English language teaching : a guide for teachers.

Levy, M. and Kennedy, C. (2005). *Learning Italian via mobile SMS*. In A. Kukulshka- Hulme and J. Traxler (eds.), Mobile Learning: A handbook for educators and trainers. London: Routledge. 76-83.

Lin, Y. T., Kao, C. L., & Lan, Y. J. (2016). The effects of mobile learning on students' oral performance in Mandarin Chinese and their attitudes. *International Journal of Mobile Learning and Organisation*, 10(1-2), 78–101. http://doi.org/10.1504/IJMLO.2016.076191

Lu, Z., Hou, L. & X. Huang. (2010). A research on a student-centred teaching model in an ICT-based English audio-video speaking class. *International Journal of Education & Development using Information & Communication Technology*, 2010, Vol. 6, Issue 3, pp. 101─123.

Ma, Q. (2017). A multi-case study of university students' language-learning experience mediated by mobile technologies: a socio-cultural perspective. *Computer Assisted Language Learning*, 30(3-4), 183–203. http://doi.org/10.1080/09588221.2017.1301957

Niu, J., Liu, Y., Lin, J., Zhu, L., & Wang, K. (2014). Stroke++: A new Chinese input method for touch screen mobile phones. *International Journal of Human Computer Studies*, 72(4), 440–450. http://doi.org/10.1016/j.ijhcs.2014.01.001

Norazah Mohd Nordin, Mohamed Amin Embi, Melor Md.Yunus (2010). Mobile learning framework for lifelonglearning. International Conference on Learner Diversity 2010. *Procedia Social and Behavioral Sciences* 7 (C), 130–138.

O'Malley, C., Vavoula, G., Glew, J., Taylor, J., Sharples, M. & Lefrere, P. (2003) *Guidelines for learning/teaching/tutoring in a mobile environment*. Mobilearn project deliverable. Available from http://www.mobilearn.org/download/results/guidelines.pdf

Ophir, E., Nass, C., & Wagner, A.D. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences*, 106(37), 15583-15587. Retrieved November 26, 2012 from http://www.pnas.org/content/106/37/15583.full.pdf.

Ramsden, P. (2003). *Learning to Teach in Higher Education* 2nd edition. http://doi.org/10.1080/03075079312331382498

Reinders, H. & Hubbard, P. (2013). *CALL and learner autonomy*: Affordances and constraints. In M. Thomas, H. Reinders, and M. Warschauer (Eds.). Contemporary computer assisted language learning (pp. 359-375). London: Continuum Books.

Sagor, R. (2000). *Guiding school improvement with action research*. Alexandria, Va.: Association for Supervision and Curriculum Development. www.ascd.org/.../Guiding-School-Improvement-with-Action-Research.aspx

Sharples, M. (2000): "The design of personal mobile technologies for lifelong learning". *Computers & Education*, 34(3), (2000), 177-193.

Skehan, P. (2001). Tasks and language performance. In M. Bygate, P. Skehan, & M. Swain (eds.), Researching Pedagogic Tasks: Second Language Learning, *Teaching, and Testing*, p.167–185. London: Longman.

Skehan, P. 1996. A framework for the implementation of task-based instruction. Applied Linguistics, 17(1), 38-62.

Stockwell, G., & Hubbard, P. (2013). *Some emerging principles for mobile-assisted language learning*. Monterey, CA: The International Research Foundation for English Language Education. Retrieved from http://www.tirfonline.org/english-in-the-workforce/mobile-assisted-language-learning

Talib, NZ, Ramli, N.B., Hussin, Z.B., Jamaluddin, S.B., Saputra, J. (2019). Transformational leadership and teacher's performance: the mediating role of motivation and commitment. Opcion, (Special Issue 21), pp. 306–322.

Teh, H.S, Saedah, S., & Wong, S.L.(2014). Penilaian kurikulum pengajaran bahasa mandarin komunikatif: satu kajian pendekatan iluminatif. *Jurnal Kurikulum & Pengajaran Asia Pasifik*, Bil 1(2), 20–31.

Tian, F., Lv, F., Wang, J., Wang, H., Luo, W., Kam, M., Canny, J. (2010). Let's Play Chinese Characters – Mobile Learning Approaches via Culturally Inspired Group Games. *Work*, 9, 1603–1612. http://doi.org/10.1145/1753326.1753565

Wang, S. (2013). Reading and Grammar Learning Through Mobile Phones. *Language Learning & Technology*, 17(173), 117–134. Retrieved from http://llt.msu.edu/issues/october2013/wangsmith.pdf

Yedla, Suneetha, 2013. "Classroom to Smart Room: Need of the Hour for English for Engineering" Contemporary Research in India: *An International Peer Reviewed Journal*, Vol. 3, Issue 1, Pg: 115-117. ISSN: 2231-2137.

Zhang, S. (2009) 'The role of input, interaction, and output in the development of oral fluency', *English Language Teaching*, Vol. 2, No. 4, pp.91–100.

Acknowledgements
We would like to thank Universiti Malaysia Terengganu for granting this research with Scholarship of Teaching and Learning (SoTL) with VOT No: 55199.

Biographies
Nurul Ain Chua Binti Abdullah is a PhD holder and works as a senior lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia. She has published numerous articles Scopus/ WoS indexed. Her research interests are in education, language learning, curriculum and linguistic, Chinese or Mandarin Language.

Goh Ying Soon is a senior lecturer, and he currently teaching Mandarin as the third language to non-native learners at MARA University of Technology, Malaysia. He is a member of the International Society for Chinese Language Teaching. Dr Goh has taught Mandarin at the primary, secondary and tertiary level for more than 25 years. He has been actively presenting papers at national and international conferences. His research interests are on educational technology in Mandarin teaching and learning, web-based instruction, translation, etc.

Jumadil Saputra is a PhD holder and works as a senior lecturer in the Department of Economics, Faculty of Business, Economics, and Social Development, Universiti Malaysia Terengganu, Malaysia. He has published 125 articles Scopus/ WoS indexed. As a lecturer, he has invited as a speaker in numerous universities, the examiner (internal and external), the reviewer for article journal and proceeding, the conference committee, journal editorial board, and others. He is a professional member of the International Business Information Management Association (IBIMA), Ocean Expert: A Directory of Marine and Freshwater Professional, and Academy for Global Business Advancement (AGBA). His research areas are Quantitative Economics (Microeconomics, Macroeconomics, and Economic Development), Econometrics (Theory, Analysis, and Applied), Islamic Banking and Finance, Risk and Insurance, Takaful, i.e., financial economics (Islamic), mathematics and modelling of finance (Actuarial). His full profile can be accessed from https://jumadilsaputra.wordpress.com/home-2/.

Azza Jauhar Ahmad Tajuddin is a PhD holder and works as a senior lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia. He has published numerous articles Scopus/ WoS indexed. Her research interests are in the areas of education, language learning, curriculum and linguistic.

Che Hasniza Che Noh is a senior lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia.

Mohd Yusri Ibrahim is a senior lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia.

Roswati Abdul Rashid is a PhD holder and works as a senior lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia. He has published numerous articles Scopus/ WoS indexed. Her research interests are in the areas of education, language learning, curriculum and linguistic.

Mazlina Ahmad is a lecturer at the Center for Foundation and Continuing Education (PPAL), Universiti Malaysia Terengganu, Malaysia. She has published numerous articles Scopus/ WoS indexed. Her research interests are in the areas of education, language learning, curriculum and linguistic.