Mobile Applications in Mandarin Pedagogical Practice

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Abstract. Teaching is a complicated and comprehensive task. Teachers may spend many years of practice to learn how to teach well, and most of us will not have learned enough. It would be a continuous process to be a good teacher. Instead of keeping on learning what we do not know about teaching the subject, it is better to know what the real problems are happening in the class, reflect what is the cause and come out with an action plan as nobody starts well at teaching. Furthermore, in fulfilling the worldwide demand for Mandarin language acquisition occasioned with the advance affordances of technology, most of the researchers focused on technology impact than the pedagogical aspects. And there is still too little action research regarding teaching pedagogy that has been done on enhancing Mandarin learning, especially in the local context. Thus, it is the right time the researcher cum instructor examines Mandarin pedagogical practice through individual action research to examine to what extent technology-enhanced Mandarin instruction could impact teacher’s pedagogical practice besides assisting students’ learning. A total of fourteen Mandarin non-native learners have participated in the study. The triangulation method was used to ensure the trustworthiness of this qualitative study. The data was collected through students’ diaries, reflective journals, focus group interviews and oral assessment. Then they were analyzed through content and thematic analysis to ascertain the themes regarding teacher pedagogical practice which influenced smartphone usage in Mandarin learning. The results revealed that the human aspect was the most crucial factor in ensuring the success of technology integration instruction. The smartphone was found as a promising tool in teaching Mandarin however it is only effective when teachers use it as a pedagogical tool effectively.

Keywords: Mandarin foreign language, smartphone applications, pedagogical practice, action research

1. Introduction

Nearly a decade, smartphone technology is so thriving that people feel stress and inconvenience for the whole day without holding them. The speedy increase in its usage has significantly impacted education. The way of learning has changed across the setting and time. This mobile learning approach has been following by all the academic institutions in various disciplines. The special features enable users to make
phone calls, use GPS for directions, take pictures, play music and keep track of daily activities and have contacts. There were also many advanced mobile applications designed for teaching and learning Mandarin using these modern and sophisticated mobile devices. In addition, the installation of apps, all humans’ daily activities can be done quicker and easier by using this rapidly evolving mobile technology. As a result, plenty of efforts has been done to stimulate language learning through Mobile-Assisted Language Learning. All these efforts have generated positive impacts and impose some restrictions on mobile language learning compared to the traditional classroom or e-learning. Although mobile devices have transformed education sectors drastically, nonetheless, there has not been a comparable in mobile learning (m-learning) scholarship which focuses on pedagogical approaches. Undeniably, there were also some discrepancies among differing mobile devices like the unclear sound, slow download speeds, limited devices, and the quality of screen display.

In fact, besides technology usage in teaching, a teacher needs to consider teaching skills, students’ learning, the interaction among them and the learning goals and tasks[1]. They suggested that teachers should update their concept of teaching. The technology-enhanced instruction should shift the focus from teacher-centred to student-oriented; students should update their concept about learning, students’ metacognitive strategies, updating students’ concept of learning, cultivate their independent thinking and self-study ability. Other than these, the curriculum should assess students’ development which includes all the aspects of human development besides intellectual improvement. In Mandarin learning, [2] proposed that the curricula planners need to strengthen students’ engagement in the present curriculum as motivations were one of the ways to encourage learners to devote more effort to their learning.

Clearly, effective or ineffective instruction is based on the pedagogical knowledge which stands in front of the use of technology and technology was powerless without creative and imaginative use [3]. Remarkably, a foreign language teacher holds a crucial role to plan, decide and design pedagogically technology-advanced instruction. However, there were only a few MALL studies in Mandarin instructions and most of the studies focused on what are the effects of technology use. All these views contribute a basic question in language teaching from what to teach to how it can be taught better in a self-practice technology using the environment. Thus, this study seeks to examine to what extent the smartphone usage affects Mandarin teacher’s pedagogical practice.

2. Literature Review

Teaching is an art where there are plenty of approaches can be employed by teachers to make learning meaningful and last longer. Mostly, to apply innovative approaches, the teacher tries to integrate advanced technology into teaching. However, to have a significant result, a teacher needs to equip him/herself with the technology-knowledge besides great content-knowledge. Educators should put equivalent attention on content, instruction and look for opportunities to incorporate pedagogical knowledge in handling the instructional process of electronic learning (e-learning), m-learning or even blended learning. Additionally, teachers need to consider the motivation factor even in digital education [4]. The most important thing is an educator should always explore and understand the educational theory and its relationship with technology. And the same for the power and potential of the technological and the skills of the teacher should be blended to offer a totally great learning experience to learners at all levels [5]. The integration of advanced technology and Mobile Assisted Language Learning may be a challenge to some of the instructors. But, the main challenges to the educators are the management of students, content, strategy, technology during the process of the transformational stage.

The new norms of learning such as hybrid texts, still and moving images, sound, colour, hypertext, instantaneous links, and multidirectional referencing deeply felt by Mandarin foreign language learners. In other words, the changes occur on mobile devices like iPads and tablets and smartphones, embedded with an array of e-learning tools-virtual life-worlds in which the very term mobility itself takes on new
meaning [6]. Mandarin foreign instruction is moving concerning the management of various uninterrupted online and accessible language input materials. And teaching innovation in promoting Mandarin learning becomes a great challenge. In short, to make innovation occur, efforts are needed to modify and alter pedagogy, to understand students and teachers, and to be conscious of the implications for the teaching of new kinds of communication itself in the new transnational spaces and discourses [7]. This means under different contexts, teaching alignment is needed to suit the diversity of students.

In ensuring the effectiveness of teaching, Mandarin teachers always encountered pedagogical challenges like traditional teaching methods [5] and failed to guide their students[7], unaware of the benefits of technology on learning, or perhaps unfamiliar with technology [8]. Indeed, teachers’ readiness to use mobile devices in teaching practice was still at a low stage [9]. This is perhaps due to the fact that the teachers lack pedagogical knowledge to well integrate the advanced technology in teaching or still unready to employ it in their practices. Therefore, it is pertinent to conduct action research that investigates the advance technology approach pedagogically and identify the effective actual factors that improve students’ learning performances through technology-supported self-practice rather than taking for granted that all advance technology or tools impact positively on students’ learning achievement.

Regarding Mandarin students’ achievement, the previous study found that the inability to converse in Mandarin was caused by the factors of time and traditional approach [8]. The study found the Mandarin educators were dedicated and motivated in delivering the content in the short and limited given time. However, the students were always lack of time to practice their oral skills. In a regular class, two to four hours per week is not enough for a teacher to conduct many language activities especially speaking skill which requires longer practice time. Furthermore, some researches revealed that lack of time to practice orally would cause a problem in pronunciation [8] [10], [11,12]. Thus, to overcome the time issue, it is feasible by employing mobile devices pedagogically with the content able to cater to learners’ learning needs as the special feature of ‘mobility’ in mobile learning [13,14] enables time-shifting and boundary-crossing [15].

Lastly, lack of vocabulary is another factor that caused foreign learners unable to produce their language fluently [16,17]. Studies showed studying vocabulary via mobile phone SMS text messages retrieved more vocabulary in the post-tests than the other group learning through paper material [18,19] in a similar experimental study to investigate the effectiveness of vocabulary learning via SMS. However, most of the studies on mobile learning were focusing on English vocabulary learning [20, 21] on the structures of Mandarin characters [21, 22], and hence there is still too little research done on Mandarin learning.

3. Research Methodology

Action research was chosen as it is known as the most familiar and important research methodology in educational research to improve the quality of the teacher practitioners. One of the attractions of action research is it suits the ordinary practitioners as well as principals, managers, and administrators. Second, action research is always relevant to the participants as the focus of each research is determined by the researcher who is also the participant of the finding. The more important fact is it trains educators to be more effective at their teaching and the development of their students [23]. Thus, this study employed a systematic, reflective study of personal actions and effects in an educational context. This study requires a deep inquiry into personal professional practice. The study investigates a Mandarin foreign language instruction via smartphone applications as a teaching method in enhancing Mandarin foreign language learners’ oral performance and seeking opportunities for improvement. Multiple sources were employed to help analyse reactions to the actions taken as evidence of this study. Throughout this study, views of participants were gathered to develop an understanding of the issues from multiple perspectives. The data
then were used to characterize the factors that can be shared with other practitioners. The reflective phase formulates new plans and actions during the intervention process.

The action research was conducted for three cycles. The smartphone applications used for each of the cycles were shown in Table 1. The smartphone applications used for the first cycle were Software Applications (SWA, Dictionary-Based) and Web-Based Applications (WBA), e.g. Padlet and Oceania. In the second cycle, three other applications were added including Socialization Applications (SCA, WhatsApp), audios and videos. And in the third cycle, Lingt application was added to use it together with the same applications that were used in cycle two. Different apps were chosen after the reflection of each of the cycle as to address the main issue that emerged in the particular cycle.

Table 1. Types of Smartphone Applications

| First cycle                  | Second cycle                  | Third cycle                  |
|------------------------------|-------------------------------|------------------------------|
| SWA (Dictionary-based)       | SWA (Dictionary-based)        | SWA (Dictionary-based)       |
| WBA (Padlet and Oceania)     | WBA (Padlet and Oceania)      | WBA (Padlet, Oceania, and Ling) |
| SCA (WhatsApp)               | SCA (WhatsApp)                | Audio, videos                |
| Audio, videos                |                               | Audio, videos                |

The Dictionary-Based Applications used was such as Pleco. It is an online and offline Chinese Dictionary. Users can use it to learn Mandarin (pinyin – Chinese pronunciation and hanzi – Chinese characters). Bravolol is another English Chinese Dictionary. User needs to download iOS or Android version for free via their smartphones to use it. Besides, some other apps based on the functionality of their smartphones. These dictionary-based applications were used when they wanted to learn new words, Chinese characters, the pinyin pronunciations, to construct simple sentences or dialogues for their oral outputs. While the Web-Based Applications included Padlet served as a platform for users to gather ideas, share them and modify them later. Users can add links, I Tube videos, files, and images to Padlet notes via their smartphones. Another one is Oceania. It is the Learning Management System of the University of Malaysia Terengganu. It allows the practitioner to send messages, images, videos, audios, assignments and group conversations among multiple users at anytime and anywhere. Socialization Application was WhatsApp. All the apps used when it was needed during the instruction. These apps were used together to get more authentic materials, to share, to upload as well as to get feedback.

In this study, data was collected through Self-Reflective Journals, Students' Diaries, Focus Group Interviews and students' oral assessments (before and after the intervention). Then the data was analysed using ATLAS.ti8 to answer the research questions. The process of coding, categorizing and theme forming was eased by the software. The themes were then generated through qualitative analysis.

4. Result

4.1 Mandarin Foreign Language Learners – initial conformation of learners’ learning difficulties

All the participants were Mandarin II non-native learners. All participants obtained different grades for their Mandarin I. Four of them were males and 10 were females. There were three Indians and eleven were Malay students. All of them were from different programs with a mean age of 21 years old. All the students were chosen as the research participants as all of them were having problems in pronouncing the correct Pinyin pronunciation [24]. The study confirmed that the students were having difficulty in mastering the pronunciation of different Mandarin tones.

4.2 Effects on Teacher’s pedagogical Practice
After coding and analysing the qualitative data collected using ATLAS.ti8, four major themes had emerged which included 12 sub-themes. The sub-themes were learning preferences, students’ readiness, motivation, self-regulated learning, the functionality of smartphones, applications and an internet connection, grammar, oral practice, authentic content, flipped classroom, teaching method, the role of teacher, teacher’s readiness and implicit learning.

The finding showed that the students had emphasized the necessity of mobile apps in learning Mandarin. The students were willing to accomplish all the tasks given and most of the works can be done in a quicker manner. This is clearly shown in the Mandarin Teacher’s Self-Reflective Journal: students were able to complete the task faster and easier; teaching process was going more smoothly, jobs were easier done and the apps were very helpful; the students were able to learn on their own; not many questions were asked during the instruction; there were not many mistakes made by the students. Regarding the teaching method, the students enjoyed it very much and wanted this method to be used in future lessons. Their feedbacks were: I like it because it makes my work easier, I like the method of learning, it is an excellent way to learn the language faster and I am able to write in Mandarin either in pinyin – Romanized Chinese, or hanzi – Chinese character. The students were able to complete the tasks given independently, and most of them perceived that their oral performances have improved. They were found to be self-regulated learners. For example, the students were able to construct more Mandarin sentences in their oral assignment and they were able to understand, respond and communicate with the native speakers during the oral assessment. The results showed that learning via apps has stimulated students’ interest in Mandarin; even Mandarin is ranked as one of the most difficult languages to learn in the world. However, there were three students had complained about the apps. The negative comments were: It was quite complicated, very difficult to handle, and so many apps to be learned. Pertaining to the reflection on the learning activities, the students were interesting, they proposed to have more varieties of language activities, additional Chinese words (hanzi and pinyin) written on the board, use movie and songs during the lessons to learn Mandarin and to have more conversations with the native speakers. The finding reiterated that students’ learning preferences were the most crucial factor to be given concerns during the first planning step. However there were contradictory finding in which some students might not get ready for this way of learning as they did complain that the teacher was too fast, and several of them faced difficulty with their smartphones as theirs were not able to function well with some of the apps besides the problem of internet connection. A few of them blamed themselves for not working hard enough in their learning.

Other than that, it was found that the instructor should aware with self-delivering speed, to adjust and tailor the teaching to suit the students learning preferences, to plan more interesting learning activities, to have alternative plans such as language games, to have class at the computer lab, or having flipped classroom and etc. The teacher needs to understand the students and to facilitate them in learning as it was found that the teacher is the most important factor to ensure the effectiveness of mobile learning. In short, the readiness of teachers along with the students were found as the dominant factor for a successful MALL lesson.

5. Discussion and Conclusion

The pedagogical finding was aligned with the research of Hong and Zhao in [6] who mentioned that the appropriate or a diversified adaptation to each context; is more effective in the twenty-first century. The improvement can only be made through efforts to diversify pedagogy, to understand students and teachers, and to comprehend the implications for the teaching of new kinds of communication itself in the new transnational spaces and discourses that we all increasingly inhabit [6]. Hence, besides using mobile apps; the teacher may also employ language games, flashcard drilling, oral presentation, group discussion, questioning and answering, and teacher tutorial to tailor self-teaching to students’ learning preferences.
During the instructional process, students were regularly asked to use mobile apps to create dialogue, record and upload videos to Padlet in Oceania; either inside or outside the class. Numerous videos were created during the instruction and the findings showed that the students' oral performance and confidence level in speaking Mandarin was improved by having these activities. This finding was consistent with the study of Gromik [25] in Japan. The study found recording a video via portable devices have improved learners’ oral confidence. Furthermore, the students of this study were found more active and more self-regulated. Most of the time, students were able to accomplish the tasks given individually or in a group with little guidance from the teacher. These findings were consistent with the previous literature on the topic of MALL. In language teaching and learning, MALL learners are active participants and they feel responsible for their own learning [26], while the instructors need to manage this by providing proper and sufficient guidance. These findings also echo the research of Richards and Rodgers [27], who stated that Communicative Learning Teaching aims to allow learners to develop communicative competence in order to use the target language in communication to interact primarily with each other, not just with the teacher. In this study, it was also found that the teacher needs to tailor all the existing factors with the use of apps in the teaching process to enhance students’ learning. This is a challenging task as the integration of technology into teacher education, improvement is often required [28].

On the contrary, the main deterring factors in employing mobile technology were the functionality of the smartphone and the internet. This finding was similar to the report of Uwizeyimana and Bergman [29] that the students loved using mobile apps, but sometimes their appetite was bothered as they were unable to carry out all the planned activities by using their smartphones. The complaints of ‘not easily portable’ by PC users were the most prominent obstacle, while the comments of smartphone users that learning via smartphone was costly, and the ‘uncomfortable to drag/move’ were also found to be the limitation. Another deterring factor was that there were too many tasks that needed to be done in a lesson. Thus, in future MALL lesson, the teacher needs to pedagogically reduce the multitasking and environmental distractions [30], as this may weaken students’ learning. According to Ophir, Nass, and Wagner [31], the digital natives were not good at multitasking and the negative side of MALL learning includes raises students’ stress levels, increases error rates, and lowers productivity. Hence, the findings of the current study revealed that the pedagogical practice by the language teacher was the determining variable in generating satisfactory and positive learning outcomes.

In summary, several pedagogical aspects were found by the researcher cum practitioner found that should be given due consideration while integrating MALL into the teaching process. The teacher needs to be well-prepared with the knowledge of content, students, technology, and the skill in integrating the use of mobile technology to suit the millennium students. The curriculum needs to be refined to get maximum learning effects. The process of reflection during or after the class was essential and a must as it provides a solution for the problems emerged during the process of learning. The continuous reflections encouraged self-regulated learning to improve personal-pedagogical practice; as it wasn’t anyone else to tell us about our class, our strength, weakness as it was our own self discovering about that and all that will make the whole difference[32].

Reference
[1] L. Yang, J. Kantola, and A. De Hoyos, “MOOCS: Where the Learning Process and Use of It Technology Resources Are Heading Toward,” in Proceedings of the 11th International Conference on Innovation & Management, 2014, pp. 1022–1028.
[2] F. T. H. & C. C. H. Teow Ghee Tan, Hairul Nizam Ismail, “The Motivation of Undergraduates Learning Mandarin as a Foreign Language,” e-Academia J. UiTMT, vol. 5, no. August, pp. 1–11, 2016.
[3] K. M. Bailey, “Competitiveness and anxiety in adult second language learning: Looking at and
through the diary studies,” *Classr. oriented Res. Second Lang. Acquis.*, pp. 67–102, 1983.

[4] T. T. Ghee, L. T. Heng, and G. C. Shuang, “Students’ perception on using podcast in learning Mandarin,” *2012 Int. Conf. Educ. e-Learning Innov. ICEELI* 2012, 2012.

[5] S. S. Baharom, “Designing Mobile Learning Activities In The Malaysian HE Context: A Social Constructivist Approach,” *Salford Bus. Sch. Univ. Salford, Salford, UK*, p. 395, 2013.

[6] H. L. Moloney, R. & Xu, *Exploring Innovative Pedagogy in the Teaching and Learning of Chinese as a Foreign Language*, vol. 15. London: Springer Singapore Heidelberg New York Dordrecht London, 2016.

[7] S. S. & W. S. L. Teh Hong Siok, “PENILAIAN KURIKULUM PENGAJARAN BAHASA MANDARIN KOMUNIKATIF: SATU KAJIAN PENDEKATAN ILUMINATIF,” *J. Kurikulum Pengajaran Asia Pasifik*, vol. 2, no. 3, pp. 52–59, 2014.

[8] Y. Tai and Y.-L. Ting, “Adoption of mobile technology for language learning: Teacher attitudes and challenges,” *JALT CALL J.*, vol. 7, no. 1, pp. 3–18, 2011.

[9] I. Ismail, S. F. Bokhare, S. N. Azizan, and N. Azman, “Teaching via Mobile Phone : a Case Study on Malaysian Teachers’ Technology Acceptance and Readiness,” *J. Educ. Online*, vol. 10, pp. 1–38, 2013.

[10] M. E. M. Akoorie, Q. Ding, and Y. Li, “A passion for learning Chinese?,” *Chinese Manag. Stud.*, vol. 5, no. 4, pp. 460–479, 2011.

[11] L. Yahong, “How Can I Help My Students Promote Learner-Autonomy in English Language Learning?,” *Educ. J. Living Theor.*, vol. 2, no. 3, 2009.

[12] X. Xu, A. M. Padilla, and D. Silva, “The time factor in Mandarin language learning: the four-week intensive versus the regular high school semester,” *Lang. Learn. J.*, vol. 42, no. 1, pp. 55–66, 2012.

[13] A. Kukulska-Hulme, “Mobile usability in educational contexts: what have we learnt?,” *Int. Rev. Res. open Distrib. Learn.*, vol. 8, no. 2, 2007.

[14] J. Traxler, “Defining, Discussing and Evaluating Mobile Learning: The moving finger writes and having writ… In: The International Review of Research in Open and Distance Learning, Vol. 8, Issue 2,” *Online http://www. irrodl. org/index. php/irrodl/article/view/346/882,(Accessed 03 Sept. 2008)*, 2007.

[15] A. Kukulska-Hulme, “Will mobile learning change language learning?,” *Recall*, vol. 21, no. May 2009, pp. 157–165, 2009.

[16] T. Nottingham, “Ahmad Tajuddin , Azza Jauhar ( 2015 ) A Malaysian professional communication skills in English framework for English for occupational purposes courses . PhD thesis , University of Nottingham. Thesis submitted to the University of Nottingham,” *Phd Thesis*, 2015.

[17] V. Busse and C. Walter, “Foreign Language Learning Motivation in Higher Education: A Longitudinal Study of Motivational Changes and Their Causes,” *Mod. Lang. J.*, vol. 97, no. 2, pp. 435–456, 2013.

[18] M. Lu, “Effectiveness of vocabulary learning via mobile phone,” *J. Comput. Assist. Learn.*, vol. 24, no. 6, pp. 515–525, 2008.

[19] H. Zhang, W. Song, and J. Burston, “Reexamining the effectiveness of vocabulary learning via mobile phones,” *Turkish Online J. Educ. Technol.*, vol. 10, no. 3, pp. 203–214, 2011.

[20] R. Godwin-Jones, “Mobile apps for language learning,” *Lang. Learn. Technol.*, vol. 15, no. 2, pp. 2–11, 2011.

[21] V. Tam and C. Huang, “An intelligent e-learning software for learning to write correct Chinese characters on mobile devices,” *Interact. Technol. Smart Educ.*, vol. 9, no. 4, pp. 191–203, 2012.

[22] L.-H. Wong and C.-K. Looi, “What seams do we remove in mobile-assisted seamless learning? A critical review of the literature,” *Comput. Educ.*, vol. 57, no. 4, pp. 2364–2381, 2011.

[23] D. Kember and L. Gow, “Action Research as a Form of Staff Development in Higher Education,”
1992.

[24] D. A. Friedman, “10 How to Collect and Analyze Qualitative Data,” *Res. methods Second Lang. Acquis.*, p. 180, 2012.

[25] N. A. Gromik, “Cell phone video recording feature as a language learning tool: A case study,” *Comput. Educ.*, vol. 58, no. 1, pp. 223–230, 2012.

[26] A. Kukulska-hulme, L. Norris, and J. Donohue, *Mobile pedagogy for English language teaching: a guide for teachers* Other Mobile pedagogy for English language teaching: a guide for teachers. 2015.

[27] J. C. R. and T. S. Rodgers, *Approaches and Methods In Language Teaching*, 15th ed. Melbourne: Cambridge University Press, 1986.

[28] B. B. Mcclanahan, “Education with Digital Technology: An Informative Journey,” *Cult. Proficient Leaders*, pp. 15–24, 2017.

[29] V. Uwizeyimana and E. K. Bergman, “AN INVESTIGATION INTO THE CONTRIBUTION OF MOBILE-ASSISTED LANGUAGE LEARNING TO THE ACQUISITION OF ENGLISH AS A SECOND LANGUAGE IN RWANDA,” Stellenbosch University, 2015.

[30] G. Stockwell and P. Hubbard, “Some Emerging Principles for Mobile-assisted Language Learning,” *Int. Res. Found. English Lang. Educ.*, no. 2013, pp. 1–15, 2013.

[31] E. Ophir, C. Nass, and A. D. Wagner, “Cognitive control in media multitaskers,” *Proc. Natl. Acad. Sci.*, vol. 106, no. 37, pp. 15583–15587, 2009.

[32] J. D. D. Pinheiro, “Self-observation: a teacher development approach,” *GLOSAS DIDÁCTICAS*, vol. 11, pp. 192–206, 2004.