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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

LEARNING MANDARIN AS A THIRD LANGUAGE AMONG NON-NATIVE SPEAKERS BY USING ALPHA M (AN EDUCATIONAL CARD GAME)

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ABSTRACT

Learning Mandarin as a third language (MTL) becomes more challenging as learners progress to a higher level yet they are still expected to be able to recognize, comprehend, write, and pronounce more Chinese characters. The typical traditional drills which are commonly practised often make the lessons dull and subsequently, kill the interest in learners. Hence, there is a need to incorporate engaging activities as a platform for the learners to communicate by using Mandarin and at the same time, apply the knowledge that they have been taught. This gave birth to Alpha M (an educational card game) which comprises 80 Chinese characters and 3 punctuation marks for novice of a MTL course. It is most suitably used as a manipulative for the teaching-and-learning sessions. The main goals of Alpha M are to enhance the learning experience of learners in a few ways, namely Chinese characters recognition and comprehension, Chinese phonetic system (*Hànyǔ Pīnyīn*) practice, and construction of meaningful phrases, clauses as well as sentences for daily communication. Evaluation on the effectiveness of Alpha M shows learners of MLT had fun and engaging experiences during their learning process. A pre-post test has been conducted to evaluate the effectiveness of the Alpha M. The pre-post tests show significant improvements in the identification of Chinese characters among the samples. Since it has proven to be effective, the subsequent move will be the commercialization of Alpha M.

Keywords: Alpha M, educational game, Mandarin, third language, non-native speakers

INTRODUCTION

Since a few decades ago China's economy is undergoing an exponential growth until today and she emerges as the second top global economic giant. Directly associated to this growth is the unprecedented popularity of her national language worldwide. In China alone, there are more than one billion people communicating by using their national language called "Putonghua" or Hànyǔ. According to Chai and Wang (2017), it has been estimated that there are more than 100 million people outside China who speak Mandarin, as their native language for Chinese descendants, or as their second or third language. In Malaysia, Hànyǔ is considered as third language because it is learned besides the Malay Language and English (See and Ching, 2013). In UiTM context, Mandarin or Hànyǔ is offered as the third language for students who are non-native speakers, thus qualifying UiTM as one of the earliest public universities to offer Mandarin courses to prepare her graduates for the huge global market.

PROBLEM STATEMENT

Generally, learning Mandarin as a third language (MTL) becomes progressively more challenging. The learners are expected to be able to recognize, comprehend, write, and pronounce more Chinese characters. Among these, recognizing Chinese characters is the most challenging and it is also the first step towards mastering the language. Traditionally, oral and writing drills of Chinese characters were the typical teaching-learning strategies. They are still commonly practised today, but this mundane rote learning often kills the interest in learners. There is a need to incorporate group activities in order to engage the learners in communication by using Mandarin, to utilize various teaching aids, to entice them to be active participants, and to retain their interest in learning the language. Unfortunately, an innovative teaching aid that could capture the attention and interest of the learners to achieve the goals in a typical MTL course could hardly be found. Consequently, Alpha M was innovated to fill this gap.

OBJECTIVE

Alpha M is a set of educational game card that comprises 80 Chinese-character cards for beginners of a MTL course, to be used as a manipulative for the teaching-and-learning sessions. The objectives of Alpha M are to enhance the learning experience of learners in recognizing the Chinese characters, practising the Chinese phonetic system (*Hànyǔ Pīnyīn*), comprehending the Chinese characters, and stringing meaningful words, phrases, clauses and sentences in the language.

NOVELTY

Alpha M is an educational card innovated in Malaysia tailored to suit beginners of any MTL course. It aims to be used as a manipulative for teaching and learning Mandarin as a third language for non-native speakers. The carefully designed features of Alpha M make it possible for learners to recognize all the 80 Chinese characters. MTL learners are able to practise the Chinese phonetic system (*Hànyǔ Pīnyīn*) and thus, pronounce the Chinese characters correctly. In addition, they are able to comprehend the Chinese characters and hence, able to collocate the Chinese characters to form meaningful words, phrases, clauses, and sentences.

IMAGES OF ALPHA M

The Alpha M in Figure 1 below is designed as a box of 140 pieces of cards. It is made up of 80 common Chinese characters retrieved from the UiTM Introductory Mandarin Level 2 writing book (Mok and Lau, 2021) and 40 punctuation cards. In each content face of the card, there is a Chinese character (labelled as CD and a>). The smaller font on the top left and top right sides are for easy reference. The *Hànyǔ Pīnyīn* is also included to assist learners with their pronunciation (labelled as Q). Twenty characters are in duplicates due to higher frequency of usage (Table 1). Each character is assigned with a score (labelled as ®) that is based on the degree of difficulty in collocating with other characters, for example, numerical characters are assigned one mark as they are easy to recognize and collocate with many other characters while characters assigned with five marks are otherwise. A pre-posttest survey was conducted to evaluate the effectiveness of Alpha M. The results showed that the performance of the participants in the posttest was significantly difference from their performance in the pretest.

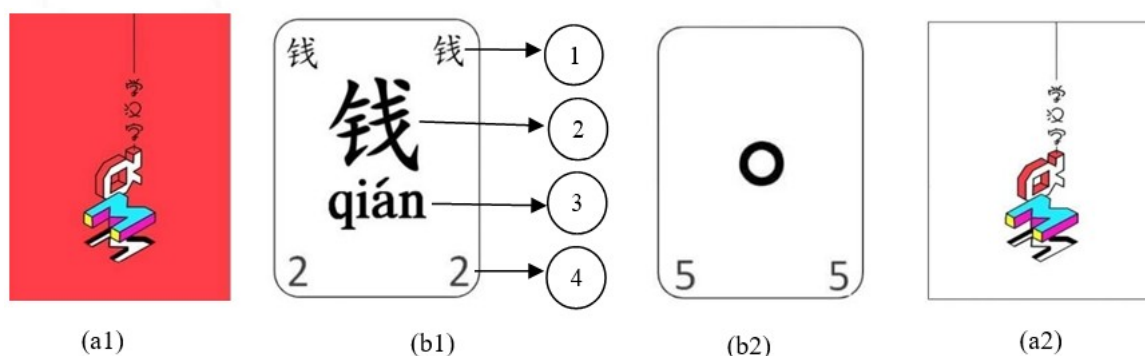


Figure 1. (a1) and (a2) Standard Face for a Character and a Punctuation Mark Respectively and (b1) and (b2) Content Face of Alpha M

Table 1. Brief Description in a Deck of Alpha M

SUMMARY OF ALPHA M	
Number of characters assigned 1 mark	10
Number of characters assigned 2 marks	53
Number of characters assigned 5 marks	17
Number of characters in duplicates	20
Total number of characters	80
Number of punctuation marks	3
Punctuation mark assigned 5 marks	40
Total number of cards in a set	100

COMMERCIALIZATION POTENTIAL AND IMPACT

Alpha M has been copyrighted (CRLY2022@03943) with the Intellectual Property Corporation of Malaysia (MyIPO) under the Malaysia Copyright Act 1987. Commercialization of Alpha M will take off in the near future and it will be printed and packaged locally as showed in Figure 4 below. Each set of Alpha M package includes 100 pieces of cards, a copy of instructions, and a list of suggested answers. The main targets of Alpha M are beginners of any basic MTL courses at learning institutions ranging from primary school to university.



Figure 2. A Translucent Box of Alpha M

CONCLUSION

Alpha M has great potential in assisting beginners of any elementary MLT courses at all levels of education. It is an effective educational tool which helps learners in their recognition, pronunciation, comprehension, and collocation of Chinese characters. Since Alpha M is a group game, learners experience a fun, non-threatening, and engaging learning process. It inevitably encourages collaboration and peer learning as well. The evaluation on Alpha M's effectiveness through pre-post tests have proven its suitability for any pedagogical setting.

REFERENCES

Chai,R.J & Wang Z, Y. (2017). 汉语有多火? 全球学习使用汉语人数已超 1 亿

Guangming Daily Press. Retrieved from

<http://m.xinhuanet.com/edu/2017-10/28/c-129728266.html>

Mok, S.S., Lau S.K., Goh C.S., Tengku Azeezeen Tengku Shamsudden, Lee, S.Y., Neo Y.F. (2021). Belajar Aksara Cina Bahasa Mandarin Permulaan 2. Selangor. Pusat Percetakan UiTM. 5-10.

See,S.Y.& Ching,T.H. (2013). Mandarin as the chosen foreign language course among learners of foreign languages: A case study. *Journal of Arts, Science & Commerce*, IV (3-1). 80- 88.

2uXX&ust=1690775293770000&source=images&cd=vfe&opi=89978449&ved=0CB
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