

# The Development and Evaluation of an e-Workbook for Learning Mandarin

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**Abstract-** Owing to the importance of Mandarin in current years, the number of Malay students in UiTM who signed up for Mandarin courses is increasing dramatically. This increase, however, has brought about many problems including problems of logistics, insufficient contact hours, lack of target language environment and the lack of appropriate learning tool (courseware) that can capture and enhance learning motivation especially among learners that have no prior knowledge in Mandarin. To help overcome these problems, it is felt that an e-learning tool should be developed. With this in mind, the researchers created an e-workbook that students can use as a self-learning material. The e-workbook consists of four levels with seven types of exercises in each level. Students are required to read, type in their answers, and they also have an option to listen to the recordings that are included. The general feedback obtained indicated that the e-workbook has managed to help students improve on their language skills. In this paper, a brief description on the development of the e-workbook is given. A brief discussion on the students' feedback on the e-workbook is also presented.

**Keywords-** Mandarin Language; Motivation; e-Learning; e-Workbook; Student Centred Learning

## I. INTRODUCTION

The emergence of China as a new economic giant has indirectly resulted in more people rushing to learn Chinese. In 2006, it was reported that about 30 million people were already learning Mandarin and this number was expected to rise to 100 million in a few years [1]. In another report published by Modern Language Association in 2010, it was revealed that the total enrolment of Chinese learners in United States Institutions of Higher Education stood at 60,976 – an increase of 18.2% from 2006 [2]. Back in Malaysia, the number of Malay students learning Mandarin is also increasing. For instance, in 2010, it was reported that a total of 55975 Malay were studying in Chinese vernacular primary schools which cater for students between 7-12 years old [3]. In the same year, approximately 15000 Malay students, aged between 13-17 years old, were learning Mandarin in Chinese vernacular secondary schools [4].

Presently, Mandarin is also offered as a foreign language to non-Chinese students at institutions of higher learning. At UiTM, a public university which only caters for Bumiputera (the Malay and indigenous people), students are required to learn a third/foreign language. In an earlier study carried out by Tan and Ooi [5], it was discovered that UiTM students learned Mandarin for instrumental purposes. Among the reasons stated are for them to have easier and more effective

business dealing upon graduation as well as to be able to communicate in a foreign language and thus be more competitive in the corporate world.

At UiTM Cawangan Pulau Pinang (UiTMPP), one of the state campuses of UiTM, Mandarin courses are offered to students of Hotel Management and Tourism. It is hoped that these Mandarin courses will be able to equip students with basic communication skills so that they will be able to communicate with their colleagues as well as clients. With this purpose in mind, the Mandarin courses at UiTMPP are rather elementary and emphasize on the skills of listening and speaking. Throughout the course, students learn situational dialogues and simple sentence patterns. Since writing skills are not emphasized, students are only taught some basic Chinese characters. The total lecture hours per semester amount to sixty hours. The diploma students of Hotel Management and Tourism are required to learn Mandarin for four semesters.

The UiTMPP students who registered for Mandarin courses have the following criteria:

- i. They are of 18 years old and above.
- ii. They have no background knowledge of Mandarin language.
- iii. Their mother tongue is Malay.
- iv. Their medium of instruction at primary and secondary school was Malay.
- v. They studied English as a second language.

The teaching and learning of Mandarin to adults who have no previous knowledge of the language is a formidable task. At UiTMPP, this challenging task is compounded by: 1. the reduction of contact hours between the lecturers and the students; 2. the lack of target language environment; and 3. the lack of suitable learning tools that can cater to the needs of the students [6]. The researchers are of the opinion that these problems must be overcome, and one of the ways is to provide students with a learning tool that can 1. motivate them to embark on self-learning without the need to depend too much on the lecturers or contact hours in class; 2. offer them some language environment so that they can assimilate themselves with the 'sounds' of the language; and 3. be used by them to learn Hanyu Pinyin (Romanised Mandarin). With this opinion in mind, an e-workbook was developed.

In this article, a description of the development of the e-workbook is given. This is followed by students' feedback on the e-workbook.

## II. DEVELOPMENT OF AN E-WORKBOOK

In this section, a summary on the development of the e-workbook is given. This section begins with a short description on why the e-workbook is created and how it can be used. This is then followed by the description on the development of the e-workbook.

### A. Why Create an E-Workbook?

Computer assisted language learning (CALL) and its effectiveness in language teaching has been a subject of study for many researchers. Among the areas that have been delved into are the use of computers in the teaching of essay writing, comprehension and vocabulary. The results obtained thus far indicate that these interactive coursewares are generally interesting, efficient and effective in helping students learn, and learning is thus improved [7]-[9].

Applying computer-assisted language learning techniques in the teaching and learning process is the very first step to modernize the teaching of Mandarin as a second language [10]. The inclusion of multimedia technology in e-learning is often useful to stimulate internet-based long distance learning. E-learning is defined as an instruction that is delivered on a computer by way of CD-ROM, internet or intranet [11]. It has been postulated that e-learning can be an effective method in teaching and learning. Among the reasons for this is e-learning often includes the content relevant to the learning objective(s). The contents are often developed based on the learning syllabus of the targeted group. In e-Learning, instructional methods such as examples and practices that can aid learning are employed. Ample practices that a language learner needs are provided. Besides that, these examples and exercises are usually presented in vivid colours, with relevant accompanying pictures and multimedia. These features are often able to capture the attention and interest of learners. These characteristics can be incorporated into an e-workbook. This is why an e-workbook is used in this study.

### B. How Can E-Workbook be Used?

Blended learning is commonly regarded as an approach that incorporates face-to-face learning and the use of online resources [12]-[14]. This means blended learning comprises both synchronous and asynchronous learning. In synchronous learning, both the teachers and students are required to be at the same time and usually the same place for learning to occur. Traditional classroom teaching and learning that is widely practiced in the world of education is a good example of synchronous learning. For learning to take place, both the teachers and the students must be present. If either party is absent, learning will not take place. In e-learning, synchronous learning also requires both parties to be present at the same time though they may not be at the same place. An example of this situation is the use of online chat. If either of the party is not online, then communication does not take place.

In asynchronous learning, however, the teachers and the students need not be at the same place at the same time and it is different from synchronous learning in that it can cut

across temporal and geographical barriers [15]-[17]. This means it is not necessary for both the teachers and the students to be present together at the same venue and time for learning to occur. Students can be at anywhere they wished and study at anytime convenient to them. There is no necessity for either party to be in the same lecture theatre, tutorial room, workshop or laboratory. For asynchronous learning, each participant only needs to have a computer and internet access. The teaching and learning materials can be uploaded to a website by the teachers. This can be done at anytime and anywhere the teachers desire. Students, on the other hand, can access the same website at anytime and from anywhere to retrieve the materials which have been uploaded earlier. Should they have any questions or comments, they can post them on the same website to be answered by teachers or any other students at a later time. To obtain the answers or feedback, the student who posted the question(s) will only need to log onto the same site. In the same manner, a discussion can be held by the participants.

It has been postulated that the use of asynchronous e-learning can bring many advantages to students as well as instructors [18]. One of the advantages to students is they can study on their own at a pace determined by themselves. Students will be the master of their own learning in that they can decide on where, when and how fast they want to study. They can study and revise their work without any hindrances [19]. This method of learning is of utmost importance to 'reflective learners' [20] and also the weaker students who need to study at a slower pace. If the students have any questions after reviewing and reflecting on the lessons, they can post their questions on online forums for their friends or instructors to provide feedback. Besides online forum, emails can be used as a tool for this purpose too. These postings indirectly encourage the students to engage in collaborative learning whereby they can share opinions and/or information among themselves and also to collaborate in projects [19]. The instructors can play the role of facilitators to ensure that the students are on the right track. Instructors can also monitor the progress of the discussions and contribute when necessary. Through constant monitoring and facilitation, the instructors can identify the weaknesses of each student and take appropriate actions to help each of them to overcome those weaknesses.

The instructors, on the other hand, can determine when and where they want to prepare the teaching and/or learning materials. They may do it in their office, at the comfort of their own home or at any other places as long as there is internet access. Once the materials are ready, they will need to upload the materials to the designated website. An announcement can be posted to inform students of the new learning materials. The students can then log on to the system at any time convenient to them to download the lessons. They will have the pleasure to read and reflect on the materials at anytime and anywhere they like.

In the event of the instructors being away on courses or official duties, classes can still go on. Lessons can be uploaded to the system, and students can download the materials and study on their own. There is no need to cancel

any classes. By not cancelling classes, the course schedule will not be disrupted. Likewise, students who are unable to attend class will not miss the lessons. They can log on to the system to retrieve the lessons of the day and complete whatever tasks given by the instructors.

Furthermore, the time allotted for the face-to-face interaction in the traditional classroom can be spent on getting the students to do other more exciting activities such as role play and hands-on. This indirectly prevents boredom and encourages active participation too.

Due to these advantages and also the current scenario at UiTMPP, it was thought that an e-workbook would be appropriate as it can be used both synchronously and asynchronously. It is hoped that with the use of e-workbook, the problems of insufficient contact hours as well as the lack of target language environment can be minimized, and students will be more motivated to learn.

### C. The Content of E-Workbook

Although the Mandarin courses offered in UiTMPP focus on communicative ability, students are still required to sit for a written examination at the end of the semester. It has been noticed that students often have problems answering those questions. Hence, in order to prepare students for the written test, it was decided that the exercises in the e-workbook should be modelled after the final examination. With this in mind, seven types of exercises namely comprehension, question construction, reconstructing sentence, filling in the blank, translation, dialogue sequencing and vocabulary exercise are developed. The exercises are divided into 4 sets – Elementary I, Elementary II, Lower Intermediate, and Upper Intermediate.

To develop the exercises, Hot Potatoes Suite, a freeware available at <http://hotpot.uvic.ca/>, is used. This software comprises six applications – JQuiz, JCloze, JCross, JMix, JMatch, and The Masher. By using them, users are able to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-filling exercises. Each question can be equipped with hints and answers, and each set of exercise can have a time limit for completion. Students can have multiple attempts of the exercises. Should they need some clues to help solve or answer the questions, they can obtain hints via the links given. If the answer given is wrong, students can try to answer again. If there is a need to know the correct answer immediately, students can click on the 'Answer' button. Sound files can also be included in the courseware for students to practise listening. To practise their speaking skills, students may also use the recordings as models. They can listen to the recordings again and again. After every attempt of answering, students will be shown their score. The score will be lowered every time a wrong answer is given, or when the 'Hint' button is clicked on.

For this e-workbook, three types of applications from the Hot Potato Suites are used. JQuiz is used to develop exercises on comprehension, fill in the blank, question construction and translation. JCross is used for vocabulary exercises, and JMix is used to develop exercises on

reconstructing sentence as well as dialogue sequencing. To ensure that students really need to reconstruct sentences based on the words given, and also to read and understand the sentences given in the dialogue sequencing, the exercises on reconstructing sentence and dialogue sequencing are set to reshuffle mode upon loading. This means the words as well as the questions are displayed in random order each time they are loaded. For the vocabulary exercises, crossword puzzles are used and students need to provide the Hanyu Pinyin of the lexical items given in their mother tongue namely Malay language.

### D. The Process of Preparing the E-Workbook: Sentence Reconstruction Exercise as an Example

To prepare the e-workbook, firstly, we need to select the content. To ensure that the content of the teaching material is ideal, the materials must be able to activate students' learning interest and learning passion [21]. If students do not understand the material, the students' learning passion will cease. Another point of concern is the vocabulary used must be of those in the syllabus as well as within the students' working knowledge, and the sentence structure must be familiar to students. In developing the reconstructing sentence exercise, these considerations are adhered to. After selecting the appropriate content, JMix is used to construct the e-Learning material. Figure 1 shows the 'Hot Potato' software interface, while Figure 2 shows JMix application interface.



Fig. 1 Hot Potato interface

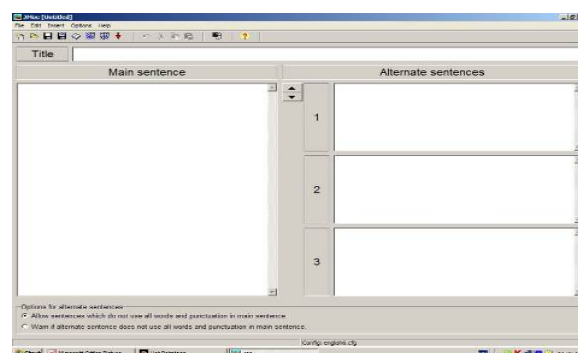


Fig. 2 JMix application interface

To create the exercise, the first thing to do is to enter the title, rubrics and answers into the respective slots on the JMix application interface as shown in Figure 3. In each exercise, an audio file is attached and a link is created via

“Insert” on the menu bar. This link when clicked on will play the audio recording. Students will be able to use these recordings to help them in the reconstruction of the sentence. They can also use it to familiarize themselves with the ‘sounds’ of Mandarin and/or to practice listening and speaking.

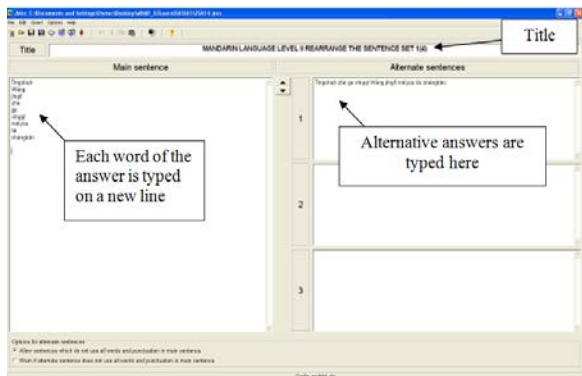


Fig. 3 JMix interface

The appearance of the webpage to be created can be configured via the configuration screen. Among the items that can be configured are the appearance (refer Figure 4), the title, instruction, timer and feedback/prompts (refer Figure 5). For the appearance, we can among others change the background colour of the page and the exercise; the type, size and colour of the font; as well as the colour of the navigation bar and also the links.

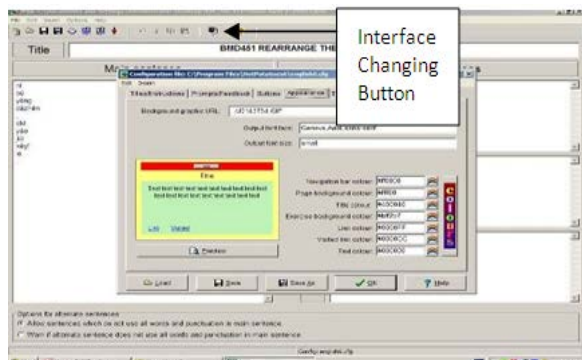


Fig. 4 Making changes to the output appearance

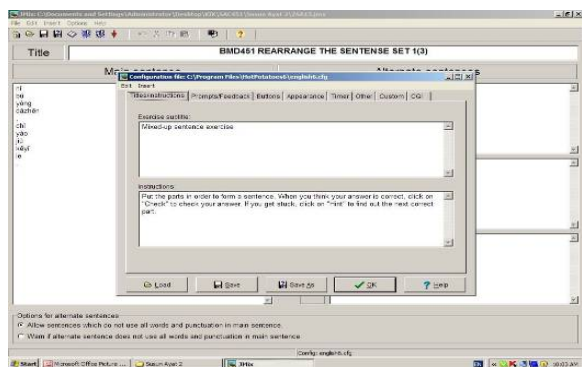


Fig. 5 Configuration screen

Once the configuration of the webpage output is completed, we can click on the “Create Web Page” under the ‘File’ menu or the “Export to Create Webpage” icon on

the toolbar to convert the exercise into a webpage. As shown in Figure 6, a preview of the webpage could also be obtained.

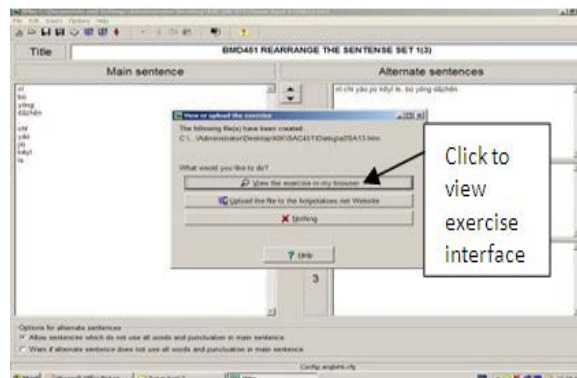


Fig. 6 Converting the exercise into a webpage

Figure 7 shows the webpage obtained after the conversion. Students can click on “Check” to check their answer, “Hint” to obtain hints on the question, and “Restart” to re-do the exercise.

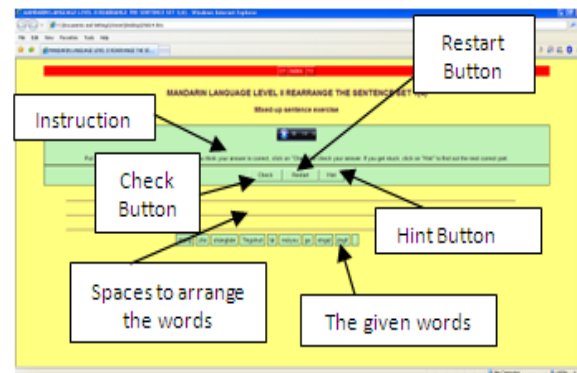


Fig. 7 The exercise interface

Figure 8 shows an example of the hint. For this exercise, when the “Hint” button is clicked, students will be informed how much of their answer is correct and the next correct word will also be given.

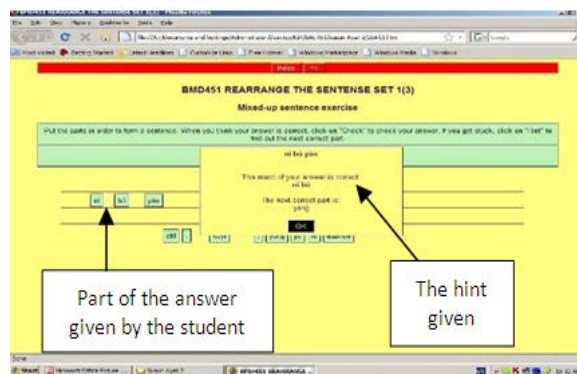


Fig. 8 An example of hint

Figure 9 shows a displayed message when a wrong answer is given. As soon as the “Check” button is activated, students will see the feedback. The feedback message of “Sorry! Try again” can be reconfigured to show any other messages as desired.



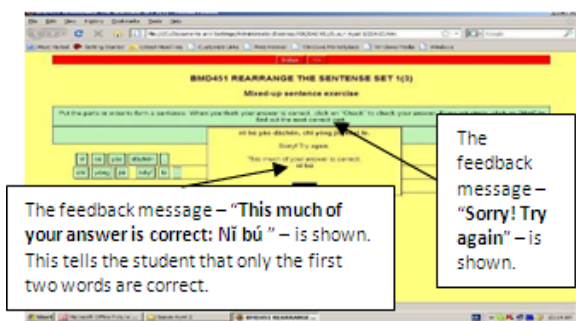


Fig. 9 A message for wrong answer

When a correct answer is given, a different message will appear as shown in Figure 10. Students will be shown the correct answer as well as any other alternative answers besides their cumulative score and a congratulatory message. The congratulatory message can again be configured to show the desired message.

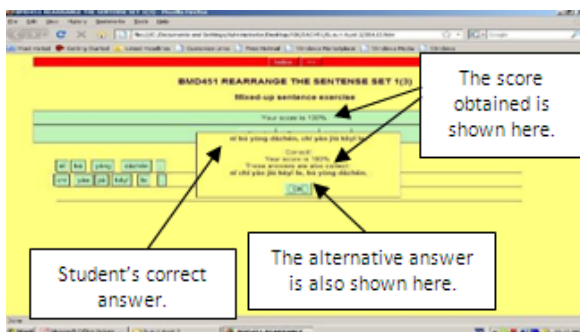


Fig. 10 A message for a correct answer

E. The Process of Preparing the E-Workbook: The Final Step

Each individual exercise can be linked to one another. When this is done, students can click on the 'forward' button to go on to the next exercise or the 'back' button to go back to an earlier exercise. Once all the individual exercises are ready, converted and linked, an index page is created. The index page can be developed by using any web design software. On the index page of this e-workbook, information such as the aim and objectives of the e-workbook are given. There is also a description on how to operate the e-workbook, a short summary of each type of exercise as well as some brief information about the authors. Links to all the exercises can be found on this index page. Figures 11 and 12 show the Index page and the Table of Content of the e-workbook.



Fig. 11 The index page



Fig. 12 The table of content

III. FINDINGS AND DISCUSSIONS

At the end of the study, students' feedback on the e-workbook was obtained via an interview and students' written reflection.

From the information gathered, three of the twenty-six students in the experimental group claimed that they did not own any personal laptop. They had to rely on the computers in the library to gain access to the e-workbook. They found this a little inconvenient and thus their learning motivation was affected. As for the others, they were of the opinion that they did not face any problems or difficulties in using the e-workbook. They, in fact, found it rather easy to use.

Generally, all the students were of the opinion that using the e-workbook was fun. They gave comments akin to those given by Sample 5:

*"It was interesting and enjoyable to use the e-workbook because it has music, and colourful. It was not boring to use it compared to the printed workbook."*

*Comments by Sample 5*

On the question "If you are given the opportunity to choose, would you like to use the interactive courseware or printed workbook in the following semester?" which was asked during the interview, 61.54% of the students stated that they would like to continue using e-workbook. The general reason given by them was that it was more enjoyable as the e-workbook was colourful and has background music. Furthermore, the audio recordings were rather useful in helping them to be accustomed to the 'sounds' of Mandarin. By playing the embedded audio recordings, they could hear the correct pronunciation and intonations of words and sentences. This was extremely helpful for their listening and pronunciation practices. They also liked the idea of being able to get immediate result/feedback.

Apart from that, the students also commented that the possibility of being able to re-take the exercises as many times as they like was a positive encouragement. They could work on their own and there was no need to wait for their lecturer to mark their work. If in the past, they had to wait till the following class to get the correct answers, with the courseware, they could obtain the answer immediately. They could also get hints that are useful in helping them answer the questions.

Even though there was a general consensus that the e-workbook was easy to use, a few of the students (38.46%) made known that they still preferred the printed workbook. They maintained that they were not interested in trying repeatedly to get the correct answers. To them, it was a time consuming process. They preferred to discuss with friends and also to wait for the instructor to provide them with the correct answers just like what they had gone through in their secondary schooling. They preferred to have direct coaching from their instructor and not to stare at the computer monitor. There was also a student who said that he did not like to use the e-workbook because he could not write notes/annotations on the exercises.

When the students were asked to single out the one aspect of the e-workbook that they would like to see improvement in, a majority of them said that they would want the e-workbook to be more flexible in that minor errors in spelling and punctuation should be allowed. It was rather frustrating to see that their answers were marked wrong just because of a single mistake in spelling or punctuation.

When the students who were not happy with the use of the e-workbook were probed further, they revealed that the main reason for their dislike was they wanted the face-to-face interaction. They preferred to be in class listening to the instructor explaining, translating and teaching in the traditional way. Learning via discovery on their own was just not their learning style.

#### IV. CONCLUSION AND RECOMMENDATIONS

This article is divided into two parts. The first part presents a brief outline on how an e-workbook was developed for the use of Bumiputera students learning elementary Mandarin at UiTMPP. The exercises in the e-workbook are modelled after the final examination. The exercises are grouped into four levels of difficulties and each level consists of seven types of exercises that students can use in their learning of Mandarin via Hanyu Pinyin. The e-workbook can be used as a learning material for self-directed learning. Upon completing each question or exercise, immediate feedback is given, and with it, students will know how much of the answer is correct. The audio recordings that are embedded in each exercise enable students to listen to how each word/sentence is pronounced. Students can also use them to practice their listening and speaking skills.

In the second part of this article, a brief presentation of some findings is given. The findings highlight two pertinent issues. The first indicates that students who are not self-directed do not like the use of e-workbook. They want to study in a traditional classroom with the instructor standing in front of the class teaching, translating the words or sentences that they cannot understand, and explaining the lessons. They want the teacher to tell them what is right and wrong without having to do much thinking themselves. Perhaps the use of e-workbook is not aligned to their learning strategies and learning styles. Further investigation into this matter and the efforts need to be taken to help this group of students are necessary.

The second issue is related to those who are self-directed learners. This group of learners is in direct opposite to the group mentioned in the previous paragraph. They enjoyed learning using the e-workbook. To them, learning using the e-workbook is fun as the e-workbook contains music, colours and also audio recordings that can be played again and again. This had helped to improve their listening skills and pronunciation. The ability to retry the exercises and to figure out the reason(s) behind each error in their answers reinforces their learning.

Finally, the findings of this study indicate that e-workbook is a useful tool that can be used in the teaching and learning of Mandarin to self-directed learners. As for the non self-directed learners who rely much on their instructors, a possible strategy is to incorporate e-workbook into the lessons slowly. This may also be a way to wean these students off the dependence they have on their instructors. It would also be interesting to look at whether non self-directed learners who use both types of learning materials – the printed workbook and the e-workbook – can actually yield better results than non self-directed learners who use either one type of learning material.

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