Seminar sub-theme: Computer Assisted Language Learning.

TITLE:
Using *Chinese Word Processor software* in learning *Chinese characters* among non-native learners.

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Abstract

Every Chinese character has it own *stroke* and *radical* and because of this, learning Chinese character has been considered by the non-native learners as the hardest learning process. The traditional method of practicing Chinese characters by hand has caused many students to lose their interest in studying the Chinese language because it is time consuming. With an advancement of technology, learning Chinese characters will not be harmful experience anymore. This paper will console the non native learners because now they need not have to learn how to write Chinese characters, they can learn the Chinese characters through the method of recognizing the characters and then "writing "the character by using the computer (*Chinese Word Processor software).* This paper will also discuss the reasons why teaching and learning Mandarin is a must in the context of UUM and suitable Chinese Word Processor software would be suggested in the learning Chinese characters.

1.0 Introduction

Writing Chinese characters （汉字） has been recognized as the hardest learning activity in the learning of the Chinese language. When writing, by hand, each character should be drawn with a series of strokes （笔画）and certain radicals（部首）. So, it is not easy to write Chinese characters especially in the views of non-native speakers.

According to Wang (2003), the difficulties of Chinese characters are due to theirs own characteristics – difficult to write, difficult to remember, difficult to recognize and difficult to read. Although many experts and teachers had thought of ways of writing the Chinese textbook and exercise books, the outcomes are not stimulating.

Xu (2000) cited a recent survey of Chinese language students at Baruch College who said that, the difficulty in writing Chinese was cited as the number one reason why students decide not to pursue Chinese language studies beyond the first year, 91 % of the students

who dropped Chinese after the first year of study complained about the amount of time dedicated to character writing.

Writing Chinese characters has become a phobia to the students especially the non-native learners. Due to the difficulties caused by the Chinese characters, some institutions simply avoid teaching students any Chinese characters at all and rely entirely on the romanized – *Pinyin*, to develop students' speaking, listening and reading skills. However, learning the Chinese language without its characters is incomplete because it is the Chinese characters, not the Romanized schemes that are used in written communication in all Chinese-speaking communities.

In order to develop the students' capability in character writing, the Chinese Inputting software in learning Chinese characters is recommended. Instead of writing Chinese characters by hand, students can now rely on the computer to reproduce Chinese characters.

2.0 Background

The use of computers to teach Chinese character is not a new concept. In fact, in USA, several colleges have proposed and have started to use the computer to teach Chinese characters. One project proposed by Baruch College and Bryn Mawr College in 2000 is called the "pen-less" approach. The principal participants of this project include Dr. Theresa Jen, Assistant Professor of Chinese and Chair of East Asian Studies program of Bryn Mawr College, Dr. Weimin Liu, Software Engineer of Unisys Corporation, Dr. Ping Xu, Assistant Professor of Chinese, Modern Languages Department of Baruch College and Dr. John Yu, Assistant Professor of Chinese and Director of Chinese Program of Baruch College. They specially designed a Chinese word-processing software called "Penless" to help students develop their character-writing rather than hand-writing the characters, after they realized that the later is extremely tedious and highly ineffective at the early stages of the language learning process. With the Penless software, students will be able to "write" Chinese character on the computer screen as long as they can understand (a) *Pinyin* (Romanization Chinese); and (b) recognize the intended character from among a small group of different characters with the same sound. The "Penless" software is free to download at http://www.penlesschinese.org.

Xie (2001) also suggested the use of Chinese word-processor software in teaching Chinese characters. In his paper, Xie has discussed few issues such as, the need to use Chinese word-processor software in teaching Chinese characters to non-native speakers. He suggested a few methods to input the Chinese characters and how to use Chinese word-processor software. Xie is using NJstar in teaching Chinese characters. He has asked his

students to use the sentence modes and tone numbers to input Chinese character. For example, by inputting "zhong1guo2, xue2xi2", the computer will convert it into Chinese character "中国， 学习". He found that American students like to use computer and Chinese word-processor software. After he had implemented computer method to teach Chinese characters, he found that the students are able to complete their assignments in a shorter time, *Pinyin* error reduced (not including tone error), students' ability in reading has improved, the speed in reading has also improved, students' ability in writing are also improving and through the exercises, students are able to know more Chinese characters. In 2003, Dr Xie had done a research on Chinese characters error analysis through the use of NJstar and the response of students towards the use of computer in inputting Chinese characters. In his questionnaire, Questions 1 to question 5 are on the use of software (NJstar) as follows.

1. Does the use of NJstar in inputting Chinese characters help in learning?
   62.5% strongly agree, 25% agree, 12.5% fairly agree.
2. Does the use of NJstar in inputting Chinese characters help to improve the ability to speak?
   18.8% strongly agree, 25.0% agree, 25.0% fairly agree, 31.3% disagree.
3. Does the use of NJstar in inputting Chinese character help to recognize Chinese characters?
   37.5% strongly agree, 56.3% agree, 6.3% fairly agree.
4. Does the use of NJstar in inputting Chinese characters help in text and vocabulary memorization?
   31.3% strongly agree, 50% agree, 18.8% fairly agree.
5. Does the use of NJstar in inputting Chinese characters help in writing Chinese characters?
   12.5% strongly agree, 6.3% agree, 37.5% fairly agree, 37.5% disagree and 6.3% strongly disagree.

The last question is regards to the satisfaction level in using computers to input Chinese characters. Xie used a 7 points scale to indicate the satisfaction level, 7 representing the most satisfied and 1 representing the least satisfied. The results are as follows.

7	6	5	4	3	2	1
31.3%	37.5%	25.0%	6.3%	0.0%	0.0%	0.0%

Overall, the students had shown a positive attitude towards the use of Chinese word-processor in learning Chinese characters.

The idea of using computers in teaching and learning of Mandarin has also been raised in China. Wang (2003) has suggested using the computer to learn Chinese characters by

non-native students to recognize Chinese characters rather than teach them how to write. Wang was speaking to two American students who are studying in mainland China. Both of them can speak and listen to Mandarin pretty well after they have learned Mandarin for just a year. These Americans could also recognize the Chinese characters that they had learned but the number of Chinese characters that they could write is limited. According to these two American students, Chinese characters are difficult to remember due to the different strokes and it is time consuming. They have since given up Mandarin and have no further interest in learning Chinese characters. In order to reduce the phobia in learning Chinese characters, Wang has suggested a strategy, avoid writing Chinese characters by hand, and replace the writing by computer.

Liu (2002) has also stated that at least 80 percent of students who learn Chinese in Mainland China know how to input Chinese characters into the computer after they had finished their language study. Many Chinese courses in the U.S. teach students to use computers to input Chinese characters as well.

From the above studies, we strongly believe that teaching Chinese characters to non-native learners is possible with the help of computers. Since the world is moving towards teaching Mandarin only for communication purposes into teaching Mandarin for a communication purposes with it characters, we have decided to start our first move in UUM. We shall be teaching Chinese characters in UUM.

3.0 Teaching Chinese character in UUM

In UUM, three levels of Mandarin are being offered, Mandarin level I, Mandarin level II and Mandarin level III. Mandarin level I is elementary, level II is intermediate and level III is higher level. The courses focus on 4 language skills, i.e. speaking, reading, writing and listening. Previously, an exercise book for writing Chinese characters at Mandarin level I level II and level III was used. Students were taught to write Chinese characters stroke by stroke. However, due to the time constraints and the characteristics of Chinese characters themselves, teaching Chinese characters using the traditional method (hand-writing the characters) was considered not effective. The process is time-consuming because writing Chinese characters depends on repetitive drills, memorization and lots of individual work outside class. Besides the difficulties in remembering the characters, the complexity of the strokes and radicals causes phobia to the non-native students and thus they lose interest in learning Chinese characters.

According to Xu (2000), there is no direct phonemic linkage between spoken Chinese and written Chinese. Though one can speak Chinese word, one is still far from being able to

read them when they appear as characters. Learning to hand-write Chinese characters is no doubt the greatest difficulty facing students of Chinese, beginning students in particular. In order to expose the students to the beauty and the uniqueness of the Chinese characters, starting from this semester, semester July 2005/2006, we have started using the computer to teach the Chinese characters. The Chinese Word Processor software that we are using is Microsoft simplified Chinese Input Method Editors (IME) version 3.0 （微软拼音输入法 2003 版）. Instead of teaching the non-native learners to write Chinese characters by hand, we are focusing on teaching the students to use the Chinese Word Processor to "write" Chinese characters on the computer. Our objective is to help the non-native students to recognize the Chinese characters through the use of Microsoft simplified Chinese Input Method Editor (IME) version 3.0. We are using the *Pinyin* input method. With this inputting method; students can type *Pinyin* of the characters from the keyboard and the computer will convert *Pinyin* into Chinese characters. Using the computers to learn Chinese characters will also help the students to improve their pronunciation because this method requires the students to know the pronunciation of the characters they want to input.

Teaching Chinese characters is a must in UUM. This is because in the very near future, Mandarin courses will become a minor course for a new program in UUM, in which the non-native students have to study Mandarin courses for six semesters. The students have to learn not only communication skills in Mandarin but also have to know how to write in Mandarin. So, there is a need to teach non-native students to learn Chinese characters instead of just teaching them *Pinyin.* Before the existence of the technology, teaching non-native learners to write Chinese words and essays in Chinese characters was a "mission impossible" task, but, with the help of the advanced technology, and the wide use of the computer, this mission will turn into reality.

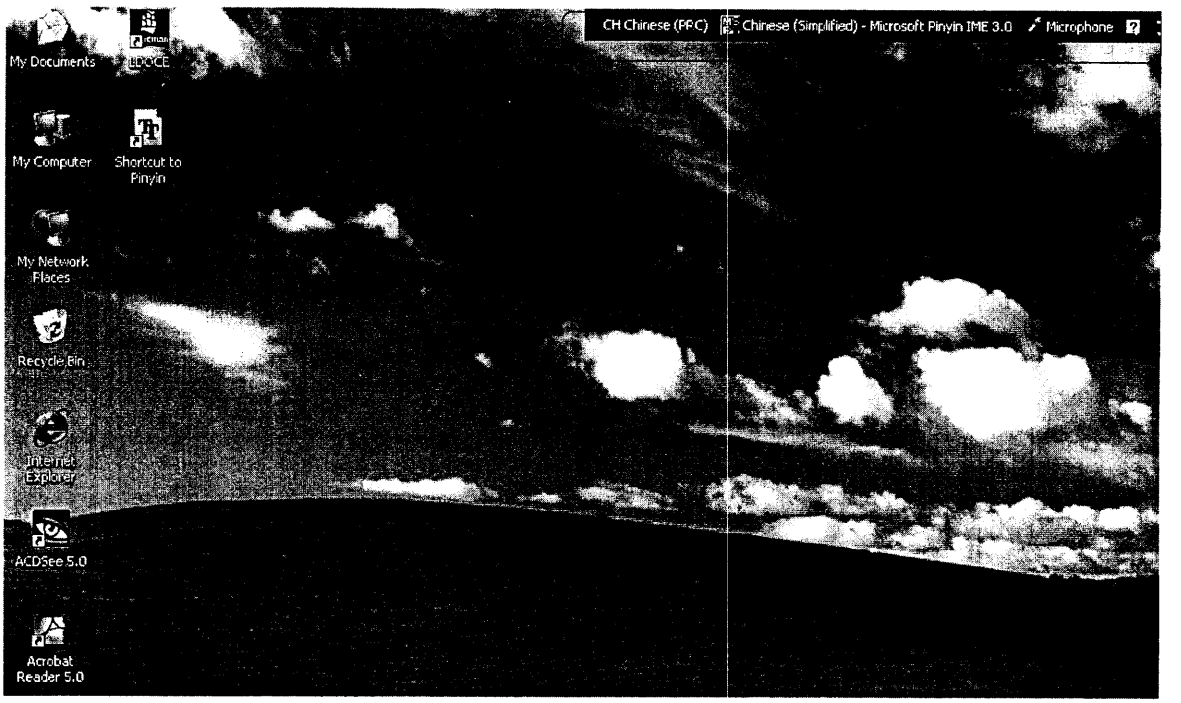
4.0 Microsoft simplified Chinese Input Method Editor (IME) version 3.0 微软拼音输入法 2003 版

Simplified Chinese characters can be entered by radical, by stroke count, by phonetic representations, or by typing in the character's numeric encoding index. The phonetic input is based on what is called Pinyin. An input method editor (IME) is essentially a means by which we can enter Chinese characters using a standard vanilla U.S. keyboard. Simplified Chinese IMEs' composition window is a combination of characters displayed in-line along with a reading window to display the keystrokes entered with the surrounding text. (Helmer Aslaksen,2005)

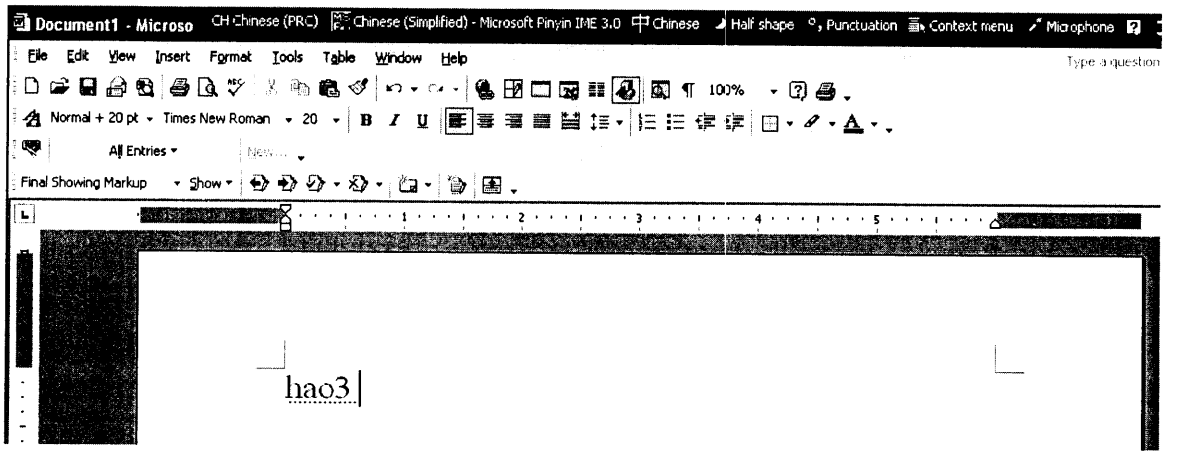
Why did we choose to use Microsoft simplified Chinese Input Method Editor (IME) version 3.0 instead of other softwares that are sold in the market? This is because Microsoft simplified Chinese IME is user-friendly. Students can use it as long as they have Window XP professional program and it is free of charge.

Students have been taught to use the software in the computer. Among the steps are

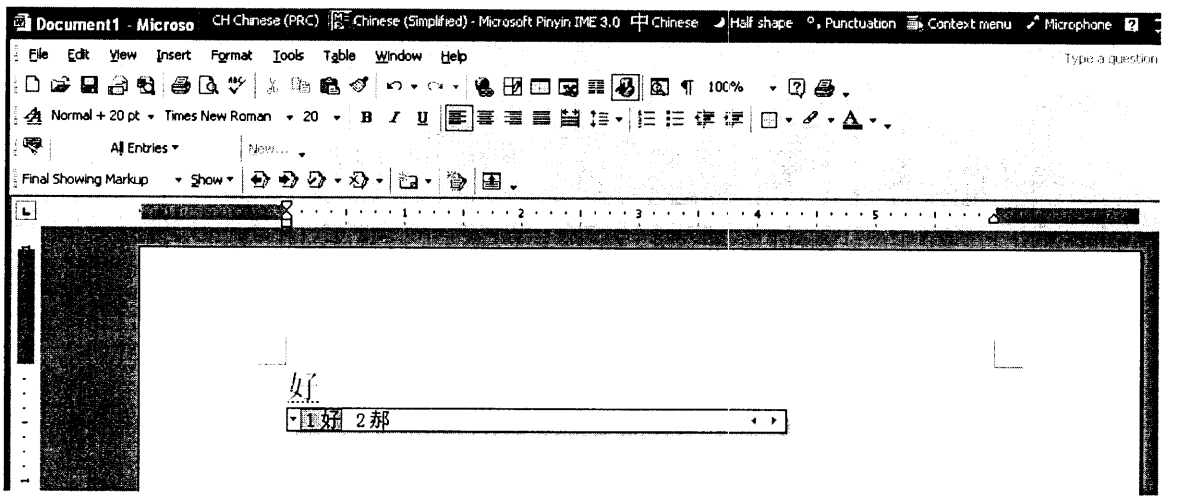
(i) Students are taught the installation procedure of Microsoft simplified Chinese IME. The language bar below shows that the Microsoft simplified Chinese IME has been installed.



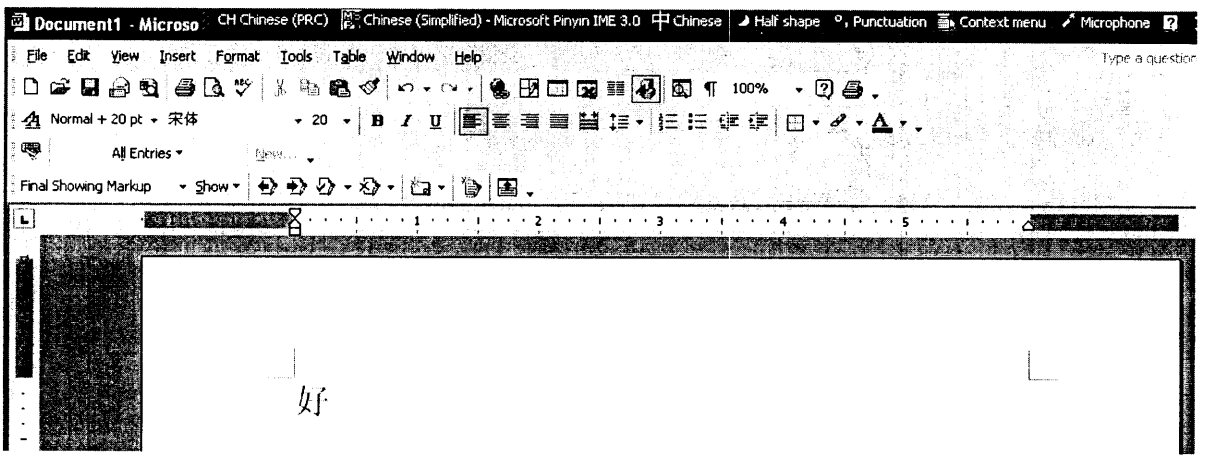
(ii) By using the *Pinyin* input method, students can type *Pinyin* of the characters from the keyboard. The computer will convert *Pinyin* into Chinese character. Microsoft simplified Chinese IME enables the user to add tone after every syllable as segment mark. The digits 1,2,3,4 represent the four tones of modern standard Chinese pronunciation, and 5 represents the light tone. For example, being good in Mandarin is 好 (hǎo) which is the third tone; the students can type the syllables together with the tone as below.



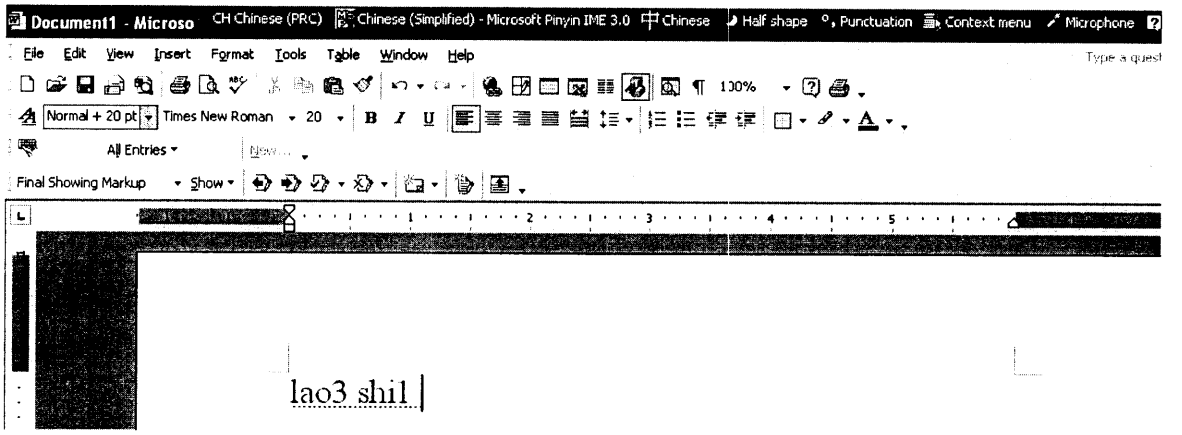
A group of characters with the same pronunciation will appear as below,



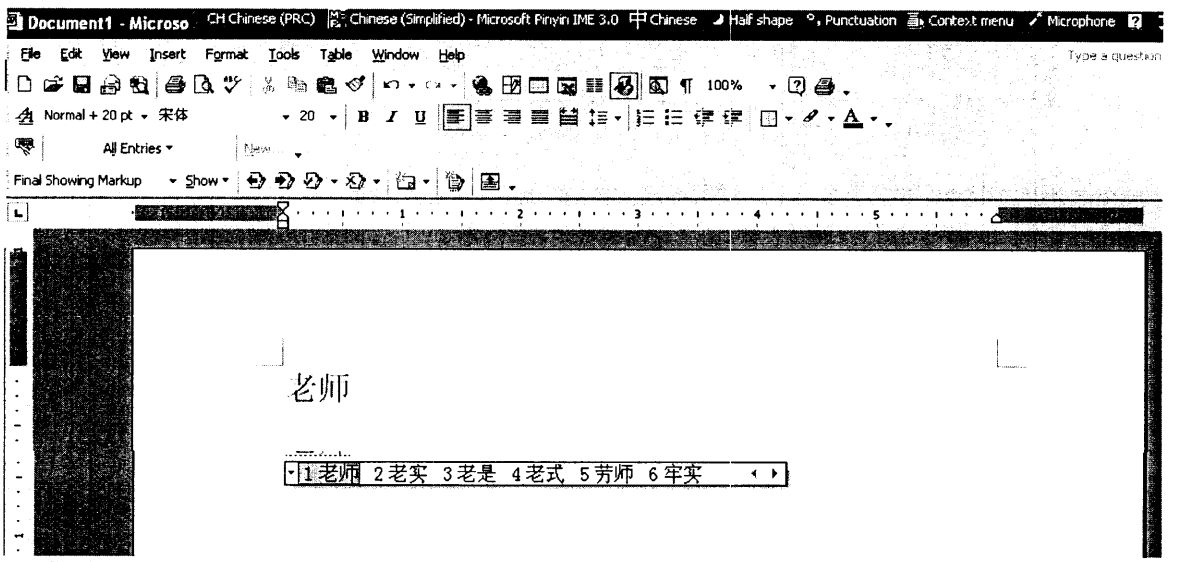
The students have to identify the proper one from homonyms, by typing 1, the character 好 will appear as follows.



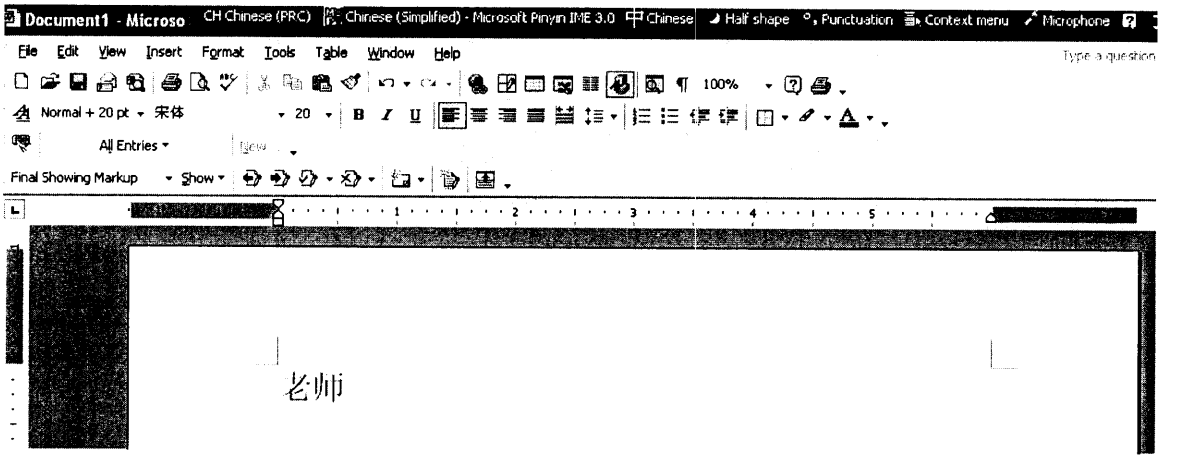
The students can also type two words at the same time with their own tones which can bring one meaning in the computer. For example, teacher in Mandarin is 老师 (lǎoshī), as shown below.



A list of word will appear as below.



To find out the Chinese characters of teacher, students have to type 1, the characters will appear as shown below.



5.0 Implementation

The participants in this project will comprise all the students who have registered for Mandarin level I, level II and level III in semester July 2005/2006. They comprise a total of 109 students. For Mandarin level I, there are 90 students, 60 of them are Malay students, 13 are Indian students, 8 are Thai students, 8 are Chinese students (without any basics in Mandarin) and 1 is a Indonesian student. There are 15 students in Mandarin level II, 13 of them are Malay students and 2 of them are Indian students. There are only 4 students in Mandarin level III, 3 of them are Thai students and 1 is a Malay student

In order to teach the students how to input the Chinese characters, the software of simplified Chinese Input Method Editor has been installed into 25 computers in a computer lab. However, the students have also been encouraged to install the software into their personal computer.

All beginning students have been exposed to the Chinese phonetic system (*pinyin)*, 4 tones and the basic writing strokes in Chinese characters. To build up their writing skills, two types of writing assignments are to be given to the students;

(i) Building sentences – This is a weekly assignment. 10 words will be given after each chapter. The aim of the assignment is to teach the students to build the sentences in Mandarin. The answers must be written both in pinyin and Chinese characters and must be printed out. By using simplified Chinese IME, the students are able to "write" the Chinese characters. Below is an example done by a student.

好 hao3 :

- Ni1 hao3 ma5? Wo3 hen3 hao3.
- 你好吗？ 我很好。

- How are you? I am fine.

(ii) Chinese characters practice – This is also a weekly assignment. The students will be given words and sentences in Chinese characters in each chapter. The students will have to find out the meanings and *Pinyin* of the Chinese characters from the text book and have to type the given Chinese characters with *Pinyin* and the meanings. The students are also encouraged to write passages in Chinese characters (please refer to Appendix).

6.0 Discussion and Initial result

At this moment, we are doing a research entitled ***An investigation of the attitude and learning effectiveness of the Chinese Word-processor in learning Chinese characters among students at UUM.*** This research will be completed at the end of November 2005. In order to know whether the use of Chinese IME can enhance the students' ability in recognizing and memorizing Chinese characters, the following instruments will be used:

(i) Results of recognizing Chinese characters in the mid semester examination.

(ii) Results of recognizing Chinese characters in the final examination.

The examination questions will be structured into 9 sections for Mandarin level I, level II and level III.

Out of nine sections, 3 sections (section 7, section 8 and section 9 in the examination paper) will test the knowledge on Chinese characters.

90 students had sat for Mandarin level I in the mid semester examination. The mid semester examination covered chapter 1 to chapter 4. A total of 132 Chinese characters were tested. The formats in testing Chinese characters are as follow:

Section 7 – Six questions tested the recognition of Chinese characters in vocabulary, the students had to write out the meanings of the characters in English or Bahasa Melayu, options were given.

The full mark for this section is 9. The achievements of students in Mandarin level I are as follow.

Marks	0	1	2	3	4	5	6	7	8	9	**Total**
Number of students	1	3	0	1	12	0	16	7	1	49	**90**
Percentage	1.11	3.33	0	1.11	13.33	0	17.78	7.78	1.11	54.44	**100**

Section 8 – Eight questions tested the Chinese characters in sentences. Students were asked to write the *Pinyin* and the meanings of each sentence. The full mark for this section is 16. The achievements of students in Mandarin level 1 are as below.

Marks	0	1	2	3	4	5	6	7	8
Number of Students	1	1	2	0	3	2	2	4	4
Percentage	1.11	1.11	2.22	0	3.33	2.22	2.22	4.44	4.44

Marks	9	10	11	12	13	14	15	16	Total
Number of Students	2	5	2	10	7	11	14	20	**90**
Percentage	2.22	5.56	2.22	11.11	7.78	12.22	15.56	22.22	**100**

Section 9 – Eight questions tested the recognition of Chinese characters in vocabulary. Students were asked to underline the correct Chinese characters in the options based on the meanings given in Bahasa Melayu. The full mark for this section is 12. The achievements of students in Mandarin level 1 are as follow.

Marks	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of students	0	0	0	0	0	2	2	0	4	19	0	63	**90**
Percentage	0	0	0	0	0	2.22	2.22	0	4.44	21.11	0	70	**100**

For Mandarin level II, 15 students sat for the mid semester examination. The mid semester examination also covered chapter 1 to chapter 4. 138 Chinese characters were tested. The formats in testing Chinese characters are as below:

Section 7 – Six questions tested the Chinese characters in sentences. The students were given options which were written in Bahasa Melayu. The students had to match the Chinese characters in sentences with the options given.

The full mark for this section is 12. The achievements of students in Mandarin level II are as follow.

Marks	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of student	0	0	0	0	0	0	0	2	0	1	0	12	**15**
Percentage	0	0	0	0	0	0	0	13.33	0	6.67	0	80	**100**

Section 8 – Eight questions tested the recognition of Chinese characters in vocabulary, students were asked to tick (/) the correct Chinese characters based on the meanings given in Bahasa Melayu (options were given). The full mark for this section is 8. The achievements of students in Mandarin level II are as follow.

Marks	1	2	3	4	5	6	7	8	Total
Number of students	0	0	0	0	1	1	3	10	**15**
percentage	0	0	0	0	6.67	6.67	20	66.67	**100**

Section 9 – Eight questions tested the Chinese characters in vocabulary. Students were asked to write the *Pinyin* and the meaning of each sentence. The full mark for this section is 12. The achievements of students in Mandarin level II are as follow.

Marks	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of students	1	0	0	3	1	0	2	0	2	1	1	4	**15**
percentage	6.67	0	0	20	6.67	0	13.33	0	13.33	6.67	6.67	26.67	**100**

For Mandarin level III, 4 students sat for the mid semester examination, the mid semester examination covered chapter 1 to chapter 3, 171 Chinese characters were tested. The formats in testing Chinese characters are as below:

Section 7 – Six questions tested the recognition of Chinese characters in vocabulary. The students were asked to write out the meaning of the characters in English or Bahasa Melayu, options were given.

The full mark for this section is 12. The achievements of students in Mandarin level III are as follow.

Marks	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of students	0	0	0	0	0	0	0	0	1	2	0	1	**4**
Percentage	0	0	0	0	0	0	0	0	25	50	0	25	**100**

Section 8 – Eight questions tested the recognition of Chinese characters in vocabulary. Students were asked to tick (/) the correct Chinese characters based on the meanings given in Bahasa Melayu (options were given). The full mark for this section is 8. The achievements of students in Mandarin level III are as follow.

Marks	1	2	3	4	5	6	7	8	**Total**
Number of students	0	0	0	0	0	0	2	2	**4**
percentage	0	0	0	0	0	0	50	50	**100**

Section 9 – Eight questions tested the Chinese characters in sentences. Students were asked to write the *Pinyin* and the meaning of each sentence. The full mark for this section is 12. The achievements of students in Mandarin level III are as follow.

Marks	1	2	3	4	5	6	7	8	9	10	11	12	**Total**
Number of students	0	0	0	0	0	0	0	0	1	1	0	2	**4**
percentage	0	0	0	0	0	0	0	0	25	25	0	50	**100**

From the above data, we would like to say that the initial results of the students in testing of their Chinese characters are encouraging.

7.0 Conclusion

Some scholars worry that using the computer in teaching Chinese characters will decrease the students' abilities in character writing, and influence the recognizing of characters in the long term (Zhang, 1998). Liu (2000) thinks that Chinese word-processors play a positive role in helping students to learn Chinese characters, but she thinks it should not completely take the place of writing characters by hand.

However, in our opinion, since we are teaching Mandarin as a foreign language, and our target students are non-native speakers, it is fine if these students are not able to write Chinese characters at all. Our aim is to help them to know how to pronounce the characters, recognize the proper characters and understand the ways to input the characters, so that they are able to produce their own essays using Chinese characters. If writing Chinese characters is a painful process for non-native speakers, we can avoid it by using computer. If computers can help in learning, let us use it by all means.

Although we can make use of the computer in teaching and in learning Chinese characters, some problems still exists. Some mistakes have been found in the students' assignments. When typing *Pinyin,* from the keyboard, group of characters with the same pronunciation will appear, and students may make the wrong selection of characters from the list of homophones. We discovered the problem in this semester, so we are going to improve our teaching technique in the coming semester.

8.0 Reference

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Appendix

Here are some samples of students' essays in Chinese characters.

1. 这间餐厅卖很多种饮料， 有橙汁、苹果汁、西瓜汁、木瓜汁、咖啡、中国茶， 还有柠檬茶。我最喜欢喝橙汁。我最不喜欢喝咖啡。我每天喝橙汁。（By Phatchariwan Koeithong）

2. 今天是公共假期。我打算先去图书馆借书，然后才去银行提款。我的朋友要去巴刹买东西。我跟他一起去巴刹。（By Noorul Sharinaz bt. Mohd Noor）

3. 今天的天气很热， 我口渴了。我要喝点儿饮料。我喜欢汽水。但是， 我爸爸说汽水不好。所以， 我去超级市场买饮料。我爸爸要喝冷的咖啡， 妈妈要喝红罗卜汁， 哥哥要喝冷的绿茶， 弟弟要喝冷的可可， 我要喝橙汁。一共八十块了， 很贵。爸爸说：我们喝白开水， 最好了。(By Katesaraporn Jongwilaikasem)

4. 今年是 2005 年。上个星期是我的生日。我的生日是 9 月 8 号。我今年 23 岁了。我是 1982 年生的。今年屠妖节是 11 月 1 号。我很高兴因为我得到红包。我也探望我的亲戚。 (By Sittartiny Selvarajoo)