



Chinese in The Classroom: Initial Findings of The Effects of Four Teaching Methods on Beginner Learners

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Abstract

The following is an article documenting the researcher's initial findings examining the effects of four different teaching methods on beginner CFL (Chinese as a foreign language) learners in terms of their ability to not only recall and recognize Chinese characters but also to use these characters for understanding and creating texts. The researcher is currently teaching approximately 98 students, aged 14-16, for one academic year. They are divided into four groups which each deploy a different teaching method. Depending on their groups, the participants are learning Chinese via rote memorization, delayed character introduction, character color-coding, and the method currently used in some Irish institutions, which focuses on the reading, writing, speaking and listening of Chinese as a whole. Therefore, participants in the fourth group are taught via integrated learning, without specific focus on the learning of characters as in the case of the other three groups. The outcomes of formative and summative evaluations throughout the year will highlight each group's progression and therefore the effectiveness of each method, not only in terms of character recall and recognition, but also the use of the language. At the time of writing (November 2016), the researcher has completed approximately ten weeks of teaching (to continue until May 2017). This paper therefore presents a background to the study, a condensed literature review, methodology, preliminary findings and analysis of the first formative evaluation, and a summary of the project thus far, including correlations between theory and practice. So far, results from the first formative evaluation have suggested that the rote memorization group is the most successful in recalling and recognizing characters, whereas the character color-coding group has displayed positive results in terms of character use as well as character recall and recognition. The control group has shown strengths primarily in conducting exercises such as cloze tests and reordering sentences, and the delayed character introduction group has shown positive results in the use of and recognition of Chinese Pinyin, however it remains to be seen how this group will perform once the characters have been introduced. As the data collection will continue until the end of the academic year in May, further results of the remaining formative and summative evaluations will allow for more concrete correlations between teaching methods and learning outcomes to be established.

Keywords: *Chinese language, Chinese as a foreign language, Foreign language learning, Language pedagogy, Language learning in schools*



Introduction

Chinese is the language with the highest number of native speakers as of 2015 (e.g. Accredited Language Services, 2015; Lewis, Simons & Fennig, 2015; Noack & Gamio, 2015), so it is no surprise that an increasing number of English speakers are learning Chinese as a foreign language (Kane, 2006). However, Kane (2006) also notes the difficulty of learning the language. In terms of writing and speaking, there are very few similarities between Chinese and English (Kane, 2006). In this way, it can be seen how important it is to source effective teaching methods, particularly regarding the writing system. At the same time, however, the use of the language must also be addressed in order to facilitate successful communication skills in CFL learners.

In recent years there has been a global surge in the number of CFL learners. Approximately 1,200 trained Mandarin teachers have been recruited to provide Chinese language classes in schools in the UK (Paton, 2014). In 2010, The New York Times reported that although the teaching of foreign languages is declining, there is an increase in the number of students learning Chinese in America (Dillon, 2010). According to the Australian Curriculum, Assessment and Reporting Authority - ACARA (2016), Chinese has been taught as a foreign language in Australian schools since the 1950s. Australia now sees a large proportion of Chinese native speakers teaching Chinese in schools as economic ties between Australia and China grow ever stronger (ACARA, 2016).

Ireland claims to recognize the importance of teaching CFL for the education and investment sectors (Department of Education and Skills, 2013). However, we can see that Ireland is trailing in terms of its approach to teaching CFL in secondary schools, and Chinese language is not a State-examined subject on either the Junior Certificate or Leaving Certificate curriculum (Department of Education and Skills, 2012). The Junior Certificate and Leaving Certificate are the two State exams taken by Irish students after three and six years upon entering secondary school.

In other words, CFL being is not being taught in Irish schools for State exams, although it is worth mentioning that some schools are teaching a course on Chinese language and culture (National Council for Curriculum and Assessment, 2014). This is, however, not an examined subject, and is more of an introduction to Chinese language and culture. The current research is therefore examining various methods of teaching CFL to beginner learners in an



Irish secondary school, in order to establish the most effective out of the four aforementioned methods. It measures participants' ability to successfully recall and recognize various characters, and also demonstrates their ability to use the language in a series of evaluations. It is hoped that the current research will provide information on effective teaching methods of Chinese language that also has the potential to aid curriculum planning for the introduction of CFL as a State-examined subject.

It is worth noting, however, that the results of the current research are not limited to an Irish school setting. The most important characteristic of these participants is that they had no prior knowledge of Chinese. In other words, the results of this study will make information accessible and allow for correlations to be made with the teaching methods used in this study, along with the learning outcomes of each group in the evaluations. This information, and the correlations observed, could allow future studies to be conducted with beginner learners while providing information on the suitability of various methods when introducing beginner learners to CFL.

Significance of the Research

This research is significant for developing an effective teaching method for beginner CFL learners. As mentioned in section 1, the current paper focuses on the researcher's initial findings of a one-year study which asks: *what are the most effective methods of teaching Chinese to beginners?* Therefore, the results of the first formative evaluation will be presented and analyzed in section 3. The concept of teaching CFL is not a new one; however there is certainly a need for effective methodologies to be put in place. The following section highlights difficulties of CFL learning; some previous studies conducted in relation to teaching CFL; followed by the methods chosen (by the researcher) to teach the participants.

Difficulties of learning CFL

The current research primarily focuses on the difficulties of learning characters. McNaughton and Ying (1999) and UNC School of Education (2008) highlight that a character may be formed any one of six ways. These are: (1) resembling the physical entity they are representing; (2) representing concepts; (3) representing the sound of one of two Chinese homonyms; (4) containing both parts that represent their phonetic sound and parts that represent the meaning of the word; (5) compounds containing radicals that together form a concept and; (6) compounds referring to those that have been changed over the years to allow for clarity in a given character (McNaughton and Ying, 1999). Kane (2006)



acknowledges the challenging aspects of writing Chinese, and the complexity of Chinese word formation strategies (as seen above) will surely confuse a beginner as they attempt to decipher the meaning and pronunciation of a new word. It is clear that when presented with a new word, the learner is unaware of the strategy used to form the character, thus the pronunciation and meaning will be unknown unless a dictionary is consulted. For example, one may easily mistake the meaning of a character by presuming or guessing that it belongs to one of the categories listed above, when in fact it belongs to another. Everson and Shen (2010) surveyed learners on the most difficult aspects of learning the characters. They report that 35 percent of the 65 students interviewed expressed difficulty in remembering the shape of characters, and in differentiating those characters and their meaning whose radicals were quite similar (Everson and Shen, 2010). One reason given for this opinion is that when the students see two similar characters, they expect the meanings to be related (Everson and Shen, 2010). This, again, highlights the beginner's complications in learning the Chinese writing system, and how becoming accustomed to the characters may take some time and limit the pace of a beginner learner.

Xing (2006) confirms that beginners need time to learn and become accustomed to a new writing system that differs from their native alphabetic language. Xing (2006) also notes that both the pronunciation and meaning of a new character are unknown to the learner, unlike new words in an alphabetic language that can be sounded out phonetically without the definition. The learning of a new character, therefore, can take up much of a beginner learner's time. Allen (2008) notes that almost half (42 percent) of a beginner's learning time is spent learning the correct structure of characters. However, Xing (2006) also notes that this vocabulary building is essential for the development of the learner's reading and writing ability.

Previous studies

Previous studies (e.g. Poole & Sung, 2015; Xu, Chang, Zhang & Perfetti, 2013; Tan, Spinks, Eden, Perfetti & Siok, 2005) focus heavily on character recall and recognition in acquiring Chinese. When native Chinese speakers learn Chinese characters, orthographic representations are acquired through connecting these representations to a word that already exists in the learner's vocabulary (Wang, Perfetti & Liu, 2003, p.190). On the other hand, foreign learners often learn to read at the same time they are learning to speak the language, resulting in the learner attempting to connect these unfamiliar orthographic symbols to concepts not yet established (Wang, Perfetti & Liu, 2003, p.190). As a result of



emphasis on the written form of Chinese, researchers such as Xu, Chang, Zhang and Perfetti (2013) believe that the reading and recognition skills of the learners are enhanced and thereby improving their overall competence of Chinese. To summarize, the studies suggest that focus on Chinese characters is of utmost importance for CFL learners.

However, there are researchers (e.g. Ye, 2013; Allen, 2008; Zhang & Reilly, 2015) who believe that too much time is spent on teaching learners how to write characters. In a survey of Chinese learners, Allen (2008) found that they admitted to spending nearly half of their learning time practicing characters. He notes that the amount of time spent learning characters is disproportionate to the usefulness of such ability. That is, knowing the structure of characters is useless without knowing their meaning and correct use.

Shen (2015) writes of those instructors who believe that learning to type characters instead of handwriting them saves time, reduces writing errors, and allows for sufficient communication and character recognition from an early beginner level, as the Chinese word processor presents the user with a list of options per character typed. In this way, some instructors believe that it is beneficial to type characters, as opposed to spending much time learning to handwrite them. Zhang and Zhouxiang (2014) and Hsiao and Broeder (2014) have even conducted studies on the role of using Chinese word processors on social media to enhance character learning outcomes. However, as Tan, Spinks, Eden, Perfetti & Siok (2005) note, writing characters assists with the ability to read characters. Without handwriting practice, beginner learners only communicating via a Chinese word processor will not improve their reading as much as those who learn via handwriting. The current research, therefore, focuses on the methods of character learning via handwriting.

Methods used in the research

From conducting the literature review, the researcher has identified a gap in the evaluation of teaching methods regarding the use of language (not simply character memorization). Due to the difficulties in memorizing a new writing system as highlighted in section 2.1, it can be seen that much time is devoted to learning the structure of the characters. However there is also a need for learners to be able to effectively use these characters in communication.

Therefore, the researcher will analyse the effects of previously-tested and effective methods of teaching through evaluations focusing on the overall use of the language, as well as character recall and recognition. These teaching methods include: rote memorization;



delayed character introduction; and character color-coding, and will be discussed further in section 3.1. An additional group of participants will be taught Chinese via methods found in most third-level CFL classes in Ireland, where learners are not explicitly taught how to learn characters, and instead focus on the reading, writing, speaking and listening skills of the language (DCU, 2011; Irish Institute for Chinese Studies, 2014; Trinity Centre for Asian Studies, 2016; UCC, 2016; Maynooth University, 2016). In other words, these participants will not be taught how to write characters using rote memorization, delayed character introduction or character color coding.

The results from a series of evaluations testing character recall, recognition and use will enable the researcher to establish which method is most effective for teaching both character structure and correct usage.

The teaching methods and evaluations will be further explained in the following methodology section.

Methodology

The year-long study involves the researcher teaching approximately 98 participants CFL at beginner's level for one academic year, assessing their learning outcomes in December and May in summative evaluations, as well as conducting formative evaluations after approximately every four weeks of teaching. All evaluations presented to the participants throughout the year follow the format of the first formative evaluation, the results of which will be highlighted in section 4. This first formative evaluation tested not only character recall and recognition, but also the ability of the participants to use these characters in creating and understanding texts. Comparing the results of each group after the first evaluation highlighted the benefits of each teaching method in a school setting, as well as providing an opportunity for the researcher to monitor how the participants were progressing after four weeks of being taught CFL. In analyzing these results, the amount of correct and incorrect answers was measured and analyzed. This will be highlighted in section 4.

The participants were recruited by contacting various schools with information about the study and seeking permission for the researcher to teach transition year pupils in the school. In Ireland, transition year is a year in which students do not sit State exams, and is an opportunity for students to explore subjects that are not normally taught in other years. In the school chosen for the study, transition-year students also studied subjects such as politics



and law, computer coding, and courses in mindfulness. The school chosen was named most suitable on account of the large number of students in the transition year group. None of the participants had previously studied Chinese, however, the majority of the participants had been learning a foreign language for three years in the secondary school. Their motivation to study Chinese during this year was linked with credits earned for completing course work during transition year. However, it is worth noting that motivation will be assessed in the questionnaire presented in May. All other subjects completed by the students during this year are assessed, and the researcher will use the December and May evaluations to constitute their assessment and therefore overall grade in Chinese.

The participants were split into four groups, where each group is taught the same content by the researcher for one academic year during two one-hour classes per week. Each group is comprised of 23-26 participants and is being taught Chinese through the different methods of rote memorization, delayed character introduction, or character color-coding. In addition to this, a fourth group is taught using a method most commonly used in third-level education (as mentioned in section 2.3), and is therefore a type of control group. There is a mixture of male and female participants in each group, and the ability of the participants in each group is also mixed. The majority of the participants speak English as their first language, although a small number are bilingual.

As the researcher is also the teacher in this study, there were indeed ethical issues to consider. Firstly, the researcher obtained consent from all participants and their parents/guardians, who agreed for the results of the evaluations to be used anonymously in the study. This was attained through a meeting with all parents/guardians who were supplied with a plain language statement before participants and their parents/guardians signed assent and consent forms. This plain language statement included information about the background of the study, as well as the reassurance that the grades obtained by the participants would not affect their progression into the next year in school, nor would it affect their relationship with the researcher's associated university. The Child Protection Officer of the school and of the researcher's affiliation was also contacted before the research commenced, and it was made clear to all parents/guardians and participants that the protection of the participants was of utmost importance throughout the study.



Teaching Methods

The teaching methods being tested are: rote memorization (RM), delayed character introduction (DCI), character color-coding (CCC), and the control group (C). The first three methods emphasize character learning, whereas group C focus on the reading, writing, listening and speaking of the language as a whole.

The first group consists of 23 participants who are learning Chinese characters via rote memorization. Dehn (2008) notes that rote strategies are those consisting of basic repetition or rehearsal in order to memorize items, yet some argue that this may only be stored effectively in the short-term memory. However, it is believed (e.g. Dehn, 2008; Greenberg, 2000) that the more focus one applies to the memorization, the more effective the learning outcomes. According to Greenberg (2000), the quicker the response time in recalling and writing vocabulary, the more efficient the learning. In other words, when instructed to learn via rote memorization, participants are told that they should they should measure their response time in order to evaluate their learning.

The second group consists of 25 participants who are learning via a process called delayed character introduction. As mentioned in section 2.2, some researchers believe too much time is spent on trying to master Chinese characters. Therefore, the question of whether or not the learners should focus on the basics of the language before being bombarded with a new writing system has been addressed by Chen, Wang and Cai (2010) and Ye (2013). According to Chen, Wang and Cai (2010), delayed character introduction is a process by which CFL learners do not attempt to learn Chinese characters until they have had sufficient time to grasp the pronunciation and other basic aspects of the language. In other words, there is a lapse of time between learning of CFL basics and the writing system. This method has been supported by Packard's (1990) research, which noted that a three-week delay could have many benefits, as CFL learners are not overwhelmed by simultaneously learning a new language and a new writing system. Therefore, when it is time to learn the writing system, a strong foundation in the language appears to assist the acquisition of characters. Upon completion of the study, Packard (1990) concluded that the DCI group performed better in areas such as being able to discriminate phonetically and transcribe new Chinese syllables, and were also more fluent in spoken Chinese, compared to the group who began learning characters immediately.



The third group consists of 25 participants who are learning characters via color-coding each character depending on the tone of the character. As mentioned in McNaughton and Ying (1999), the characters can be formed using one of six possible methods of: 1) pictures, 2) symbols, 3) sound-loans, 4) sound-meaning compounds, 5) meaning-meaning compounds and 6) re-clarified compounds, which makes it impossible to know by which method a character was formed, even if some radicals look familiar. Because of this, characters are sometimes depicted using one of five colors depending on their tone in order to allow for greater ease in pronunciation (e.g. Dummit, 2008; Pleco, 2016; Boyce, 2010; MDGB, 2016). As well as this, Dzulkifli and Mustafar (2013) note that the use of color in lessons can positively affect the learner's attention, memory and understanding of a lesson. Naturally, this technique also has the potential to consolidate character meanings during the learning process, as the color should assist with the correct pronunciation, which is linked to the meaning. In this group, the neutral tone is written in pencil, while the first to fourth tones are written in green, black, blue and red respectively.

In addition to the above methods, a fourth group of 24 participants are learning Chinese via the methods more commonly used in Irish institutions. Therefore, this group acts as a kind of control for the research in order to measure the effectiveness of current CFL teaching methods against those focusing on characters, as listed above.

As mentioned in section 2.3, these participants are not taught how to write characters using rote memorization, delayed character introduction or character color coding, but instead focus on the reading, writing, speaking and listening skills of Chinese. In other words, there is no distinct focus on memorizing characters with this method. The group is therefore learning Chinese via integrated learning, which is more commonly used in third-level institutions. In establishing the more commonly-used method of instruction for CFL, the researcher identified the module descriptors for beginner's Chinese in five Irish third-level institutions. Of these five, the descriptors were almost identical and suggested an integrated teaching method in order to simultaneously develop all four language skills of reading, writing, speaking and listening (DCU, 2011; Irish Institute for Chinese Studies, 2014; Trinity Centre for Asian Studies, 2016; UCC, 2016; Maynooth University, 2016). None of these module descriptors emphasize character learning, but rather communication as a whole. For this reason, the researcher is teaching the fourth group the skills of reading, writing, listening and speaking as mentioned above, without a specific focus on characters. This group will be particularly valuable when analyzing the results of the evaluations against the other three



groups of participants, and also in evaluating strategies used by the group when learning the characters in the final questionnaire.

Content

The researcher is teaching the participants using the book *New Practical Chinese Reader One* (NPCR). As Yi and Tinnfeld (2014) note in their analysis of the textbook, the NPCR series consists of six volumes, the first one aiming at beginner learners and the remainder progressing towards more advanced speakers of Chinese. The authors also note that, as of 2014, a total of almost 2,000 universities across the world have used the NPCR series to teach CFL, a testament to its popularity. The first book contains 14 lessons, which include almost all of the words included in the Chinese proficiency test (*Hanyu Shuiping Kaoshi*) Level One curriculum, as well as topics listed as suitable for beginner learners by the European Benchmarking Chinese Language Project Team (2012). Another advantage of using this textbook is the fact that the book and the corresponding workbook are both freely available online. As the participants are in possession of iPads as a school requirement, they have free access to the textbook and workbook without having to purchase hardcopies.

The first lesson focuses on greetings, the second on general conversation (such as asking someone if they are busy/would like some coffee), and the third introduces more vocabulary for various family members, as well as asking where someone is from. The first evaluation focused on new words and key sentences as highlighted during class time with each group, and only items covered in class were presented in the evaluation.

Evaluations

The four sections of the evaluations include: (1) recognizing and recalling characters, in which a character or a word in English will be presented and the corresponding character or English word and Pinyin will be required; (2) cloze tests, in which participants will fill in the blanks of a Chinese sentence, proving they are aware of the function of a certain character; (3) reordering sentences in a Chinese conversation, which will analyse the communication skills of the participants and; (4) producing a text by describing a picture, which will test both the character use and the structure. In other words, both the use of language and the character structure will be tested through these evaluations, the latter having been overlooked in previous studies (mentioned in section 2.3). In addition to this, a listening evaluation will also be conducted in order to decipher the understanding of each group in relation to tone and word discrimination. These summative evaluations will be presented in



December and May, however formative evaluations are also presented at four regular intervals throughout the year. These contain the same sections and layout, and will allow for the progress of each group to be monitored closely. Section 4 will analyse the results of each group after the first formative evaluation.

The researcher expects that a year-long study will provide insight as to how the participants responded to each teaching method. Thus, the results of each group's evaluations in December and May will show clear quantitative data highlighting the success of each method as participants are placed in an exam setting. Feedback from the formative evaluations is supplied to the participants in general comments for each group, addressing areas that require more work, however the summative evaluations will provide individual comments. The first formative evaluation, as analyzed in section 4, allowed the researcher to observe the effectiveness of each method in the early stages of learning CFL.

As the project is still ongoing, the following section will display results obtained from the first formative evaluation, conducted when this paper was in preparation. This evaluation was carried out after approximately four weeks of teaching. It is worth noting that during this evaluation, the DCI group had not yet been introduced to the characters and covered the first three lessons from NPCR, whereas the remaining groups covered the first two lessons including the characters.

The First Formative Evaluation

The following will highlight results obtained from each group in the first formative evaluation. The participants were given one week's notice of the evaluation. For each question, the RM, CCC and C groups were asked to supply the characters, however many were able to recall the Pinyin, which the researcher will highlight as necessary below.

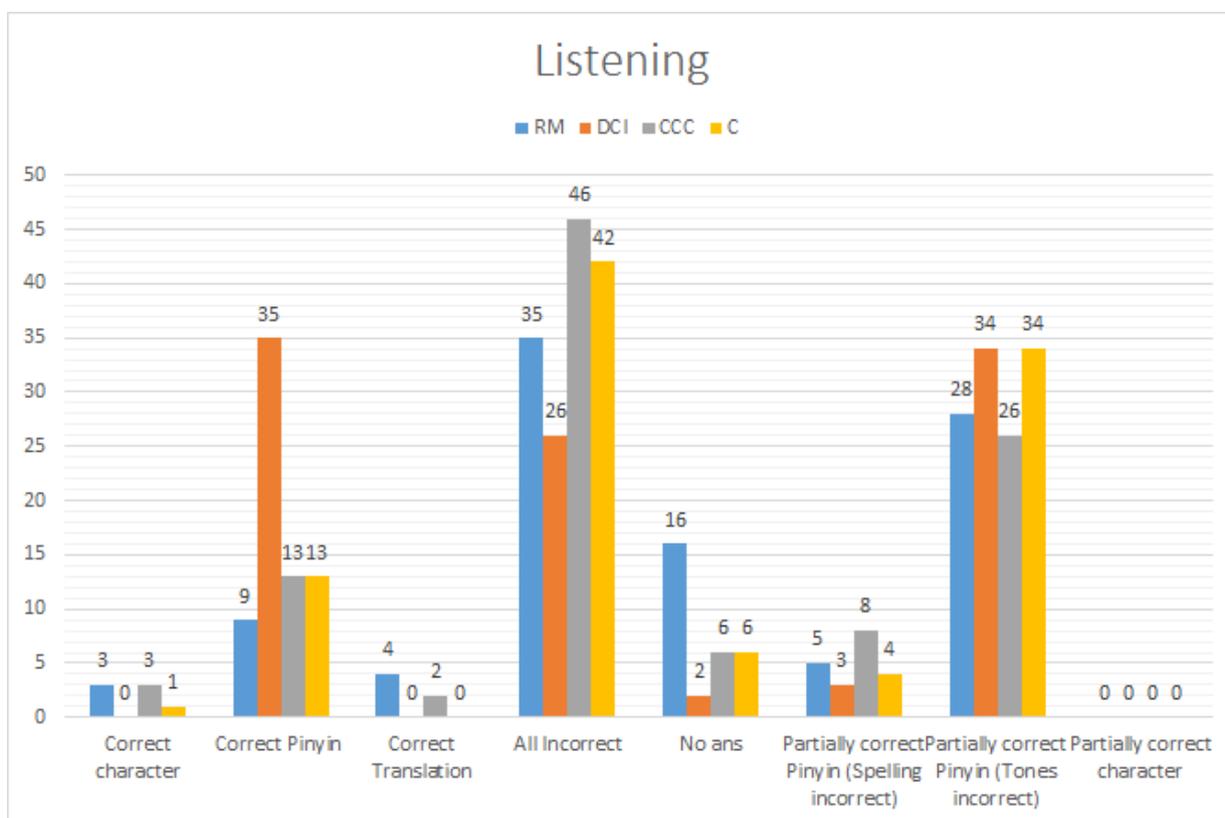
The purpose of the formative evaluations was to assess the progression of each group, and the strengths and weaknesses of each teaching method. Therefore, each group's answers were recorded individually using a number of categories such as: correct character; correct Pinyin; partially correct Pinyin (incorrect spelling), to name a few. The following sections are divided as per the sections presented on the paper, and are followed by graphs to illustrate said results.



Listening

Firstly, the participants were asked to correctly write the character or Pinyin (for the DCI group) of five Chinese words called out by the researcher three times each in the first part of the formative evaluation (see details of the evaluation layout in section 3.3). The results showed that the percentage of correct characters supplied by the RM, DCI, CCC and C groups (respectively) totaled three percent, zero percent, three percent and one percent. The percentage of incorrect answers written by the RM, DCI, CCC and C groups (respectively) totaled 35 percent, 26 percent, 46 percent and 42 percent. The DCI group was able to recall the Pinyin of the words most effectively, with 35 percent of answers written correctly, and a further 34 percent of answers written with mistakes only in the tones of the words (see Figure 1).

Figure 1. Results of four groups for the listening evaluation



From this, it can be assumed that more emphasis on Pinyin may cultivate greater listening skills. In addition to this, the repetition of characters, including their sound and meaning in the RM group, seems to correlate with more successful results compared to the CCC and C groups.



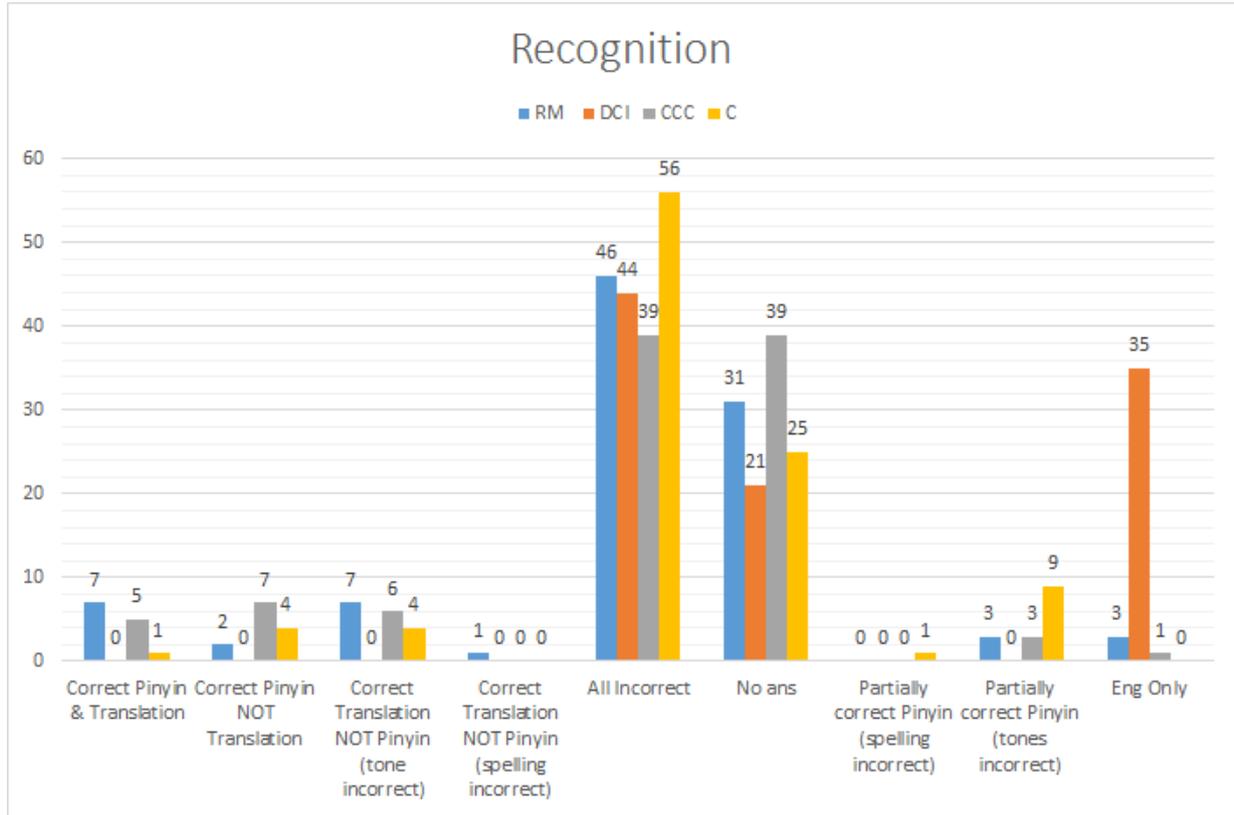
Recognition

The participants were then presented with five characters on the evaluation paper and asked to supply the translation, as well as the Pinyin of the word. The DCI group were presented with the Pinyin and asked to supply the translation.

The results from each group proved to be quite poor, with each group's highest percentage of answers being incorrect. The RM group totaled 46 percent of incorrect answers, the DCI group 44 percent, the CCC group 39 percent and the C group 56 percent. Although each group performed poorly, the CCC group provided the lowest percentage of incorrect answers, while clearly the C group performed the worst. A possible reason for this could be that the Pinyin was more easily recalled through the use of color in the CCC group, whereas a lack of instructions for learning characters in the C group may have contributed to the low scores.

In looking at the percentage of correct answers, we see that with seven percent, the RM group scored the highest out of those groups presented with the character, showing that the focus on characters may have helped the group's ability to recognize the character in question. This percentage alone, however, is not high enough to assume the positive effect of RM, although it is hoped that further evaluations will support this hypothesis. The DCI group provided 35 percent of correct English translations, albeit without supplying the correct Pinyin. This may suggest that more focus on the Pinyin and a delay in character learning is beneficial to understanding the meaning of Chinese words in the early stages of learning CFL (see Figure 2).

Figure 2. Results of four groups for the recognition evaluation



Recall

In this part of the evaluation, the participants were presented with an English word and asked to translate it into Chinese characters or Pinyin, depending on their group.

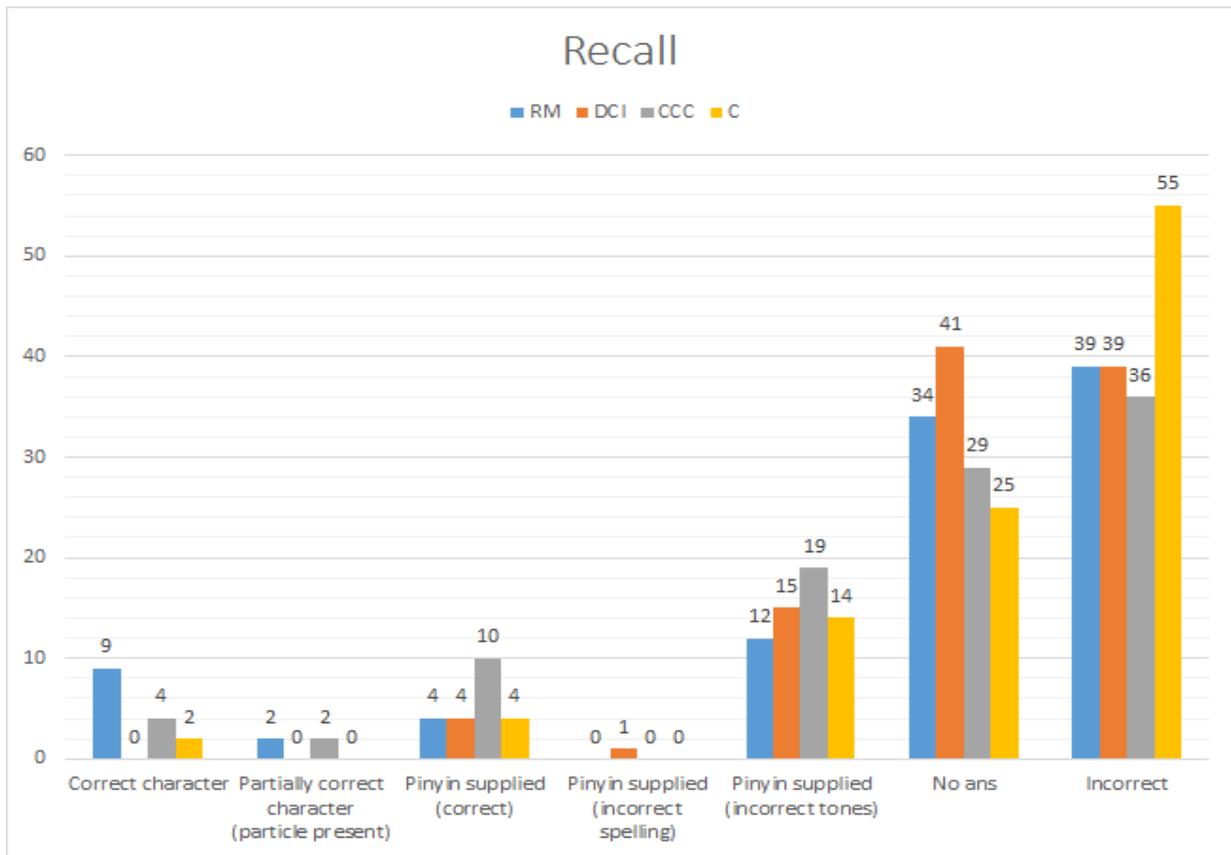
The percentage of incorrect answers given by groups already introduced to the characters was the highest again at 39 percent for the RM group, 36 percent for the CCC group and 55 percent for the C group. The DCI group did not handle this section too well either, with only 4 percent of the group's answers being correct.

Although these results are far from impressive, the results of the RM group show that with a higher focus on the characters, there were fewer incorrect answers, and this group provided the highest percentage of correct characters out of the three groups already introduced to characters (9 percent in the RM group versus 4 percent and 2 percent for the CCC and C groups respectively). Again, these percentages alone are not high enough to assume the positive effect of RM, and it is hoped that further evaluations will support this hypothesis. In the DCI group, 41 percent of answers were left blank, which indicates that the participants



did not know the answers. This was particularly surprising as this group had had a reduced cognitive workload in the introductory weeks. However, the researcher noted that some of the exercises in class were conducted orally, and the focus of this group was not necessarily on the writing of Chinese, so participants may not have been quite as familiar with the written Pinyin (see Figure 3).

Figure 3. Results of four groups for the recall evaluation



Cloze Tests

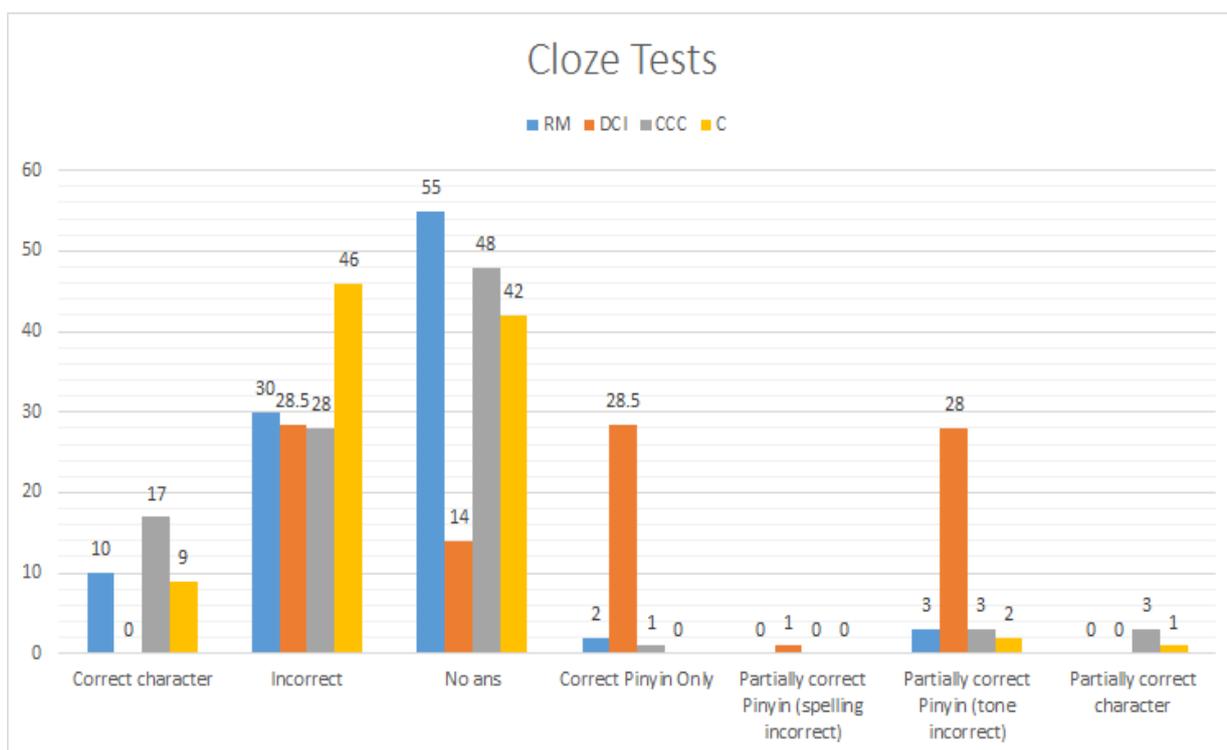
The participants were presented with variations of phrases already studied throughout the first weeks of the course and were asked to fill in the blanks with characters or Pinyin, depending on their group.

In the DCI groups, 28.5 percent of answers were correct, whereas a further 28.5 percent of answers were incorrect. Approximately 55 percent and 48 percent of the sentences in the RM group and CCC group (respectively) were left blank, indicating that the participants did not know the answer. In terms of supplying the correct character, 17 percent of answers



provided by the CCC group were correct, whereas 10 percent of the RM answers and 9 percent of the C answers were correct. This result was somewhat surprising to the researcher as it was expected that the RM group would have been more familiar with the characters, thus scoring better. However, these results show the possible benefits of using color when learning the characters in order to enhance recognition and recall of the characters and their use (see Figure 4).

Figure 4. Results of four groups for the cloze tests evaluation



Reordering Sentences

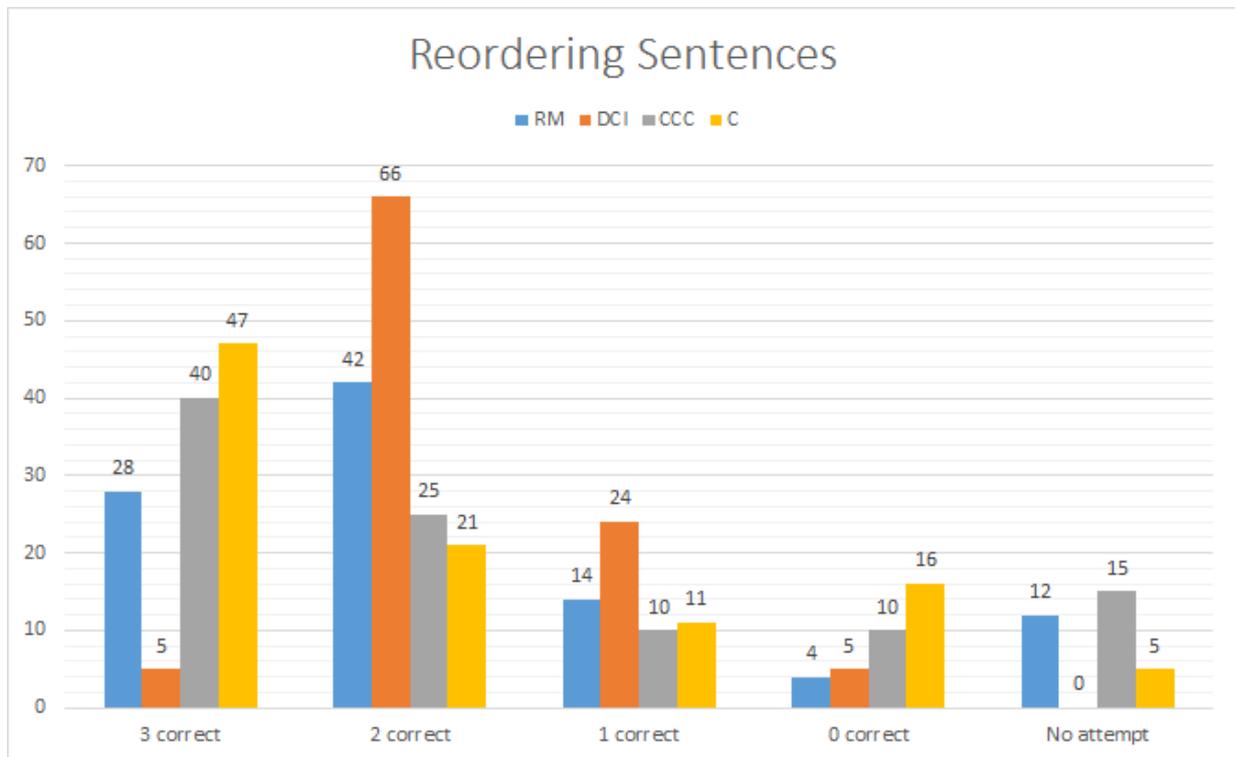
The participants were presented with three couplets and asked to put them in the correct order as per a conversation. The researcher did not make the order obvious to the participants through punctuation marks.

Each of the groups scored quite well in this section. The CCC and C group scored the highest with 40 percent and 47 percent of participants (respectively) achieving three out of three correct answers on this section. The RM and DCI groups showed 42 percent and 66 percent of participants (respectively) scoring two out of three correct answers. Again, more focus on characters using color may have enhanced recall, recognition and use of

characters. In addition to this, less cognitive load and therefore a delay in teaching the characters may have also allowed participants to gain a better understanding of the meaning of each word and phrase.

The RM group did score well as expected, with 28 percent of participants scoring three correct answers, however these results could not compete with the CCC and C group. A possible reason for the success of the C group in this section is that with less focus on characters, more time is available for exercises such as these, which the class would have been more familiar with than their peers (see Figure 5).

Figure 5. Results of four groups for the reordering sentences evaluation



Text Production

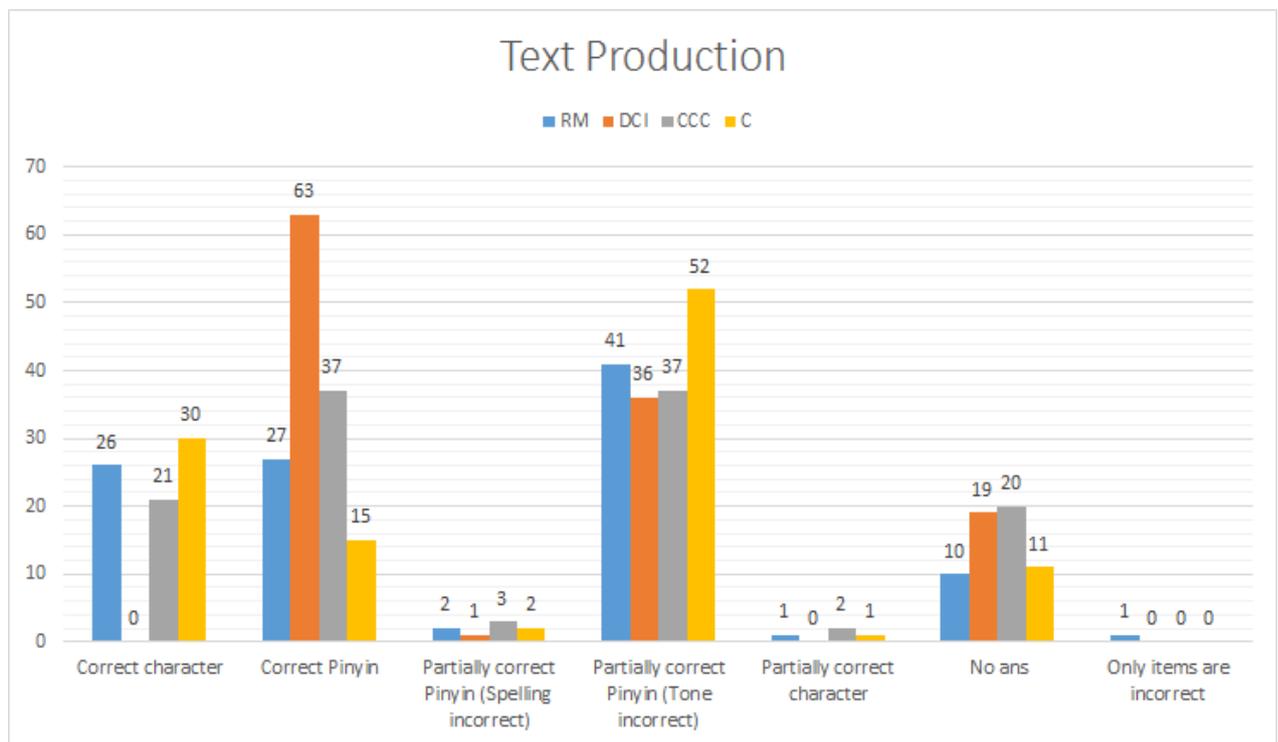
The participants were presented with a picture of a man and a woman having coffee. They were asked to describe the picture using words or phrases in characters or Pinyin, depending on their group.



Sixty-three percent of all words written in Pinyin by the DCI group were correct. The remaining groups also favored answering in Pinyin, however the majority of answers were written with the incorrect tone with the RM group at 41 percent, as well as the C group at 52 percent, whereas the CCC group provided 37 percent of their answers with correct Pinyin, but also 37 percent with incorrect tones. The correct Pinyin answers of the RM group and the C group made up 27 percent and 15 percent (respectively), which indicates that the CCC group were perhaps more aware of the tones and pronunciation thanks to the use of color when learning the characters.

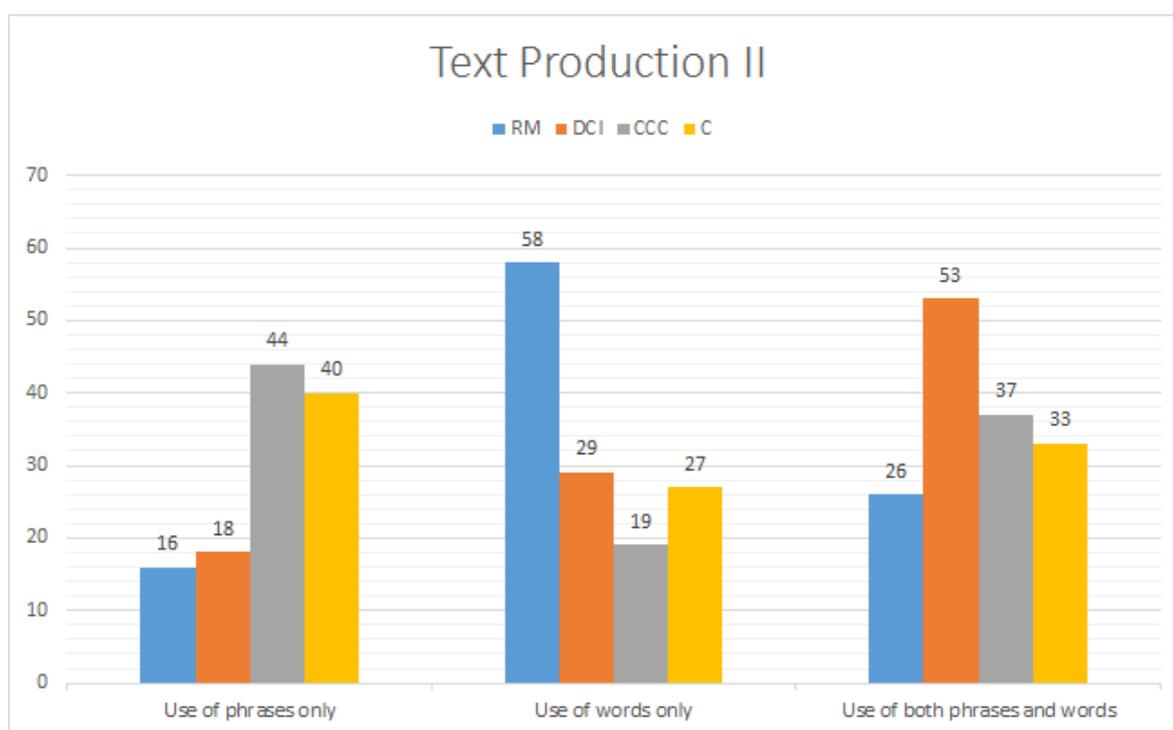
In terms of writing correct characters, the C group scored the highest and 30 percent of the written words were correct characters. The RM group came second with 26 percent, followed by the CCC group at 21 percent. A possible reason for the high scores of the C group may be due to an anomaly. One student was able to recall 12 characters, the second highest was 9, and after this all characters recalled by those who attempted were under 7. The RM group may have scored so highly in this exercise (likewise the CCC group) due to their focus on the characters (see Figure 6).

Figure 6. Results of four groups for the text production evaluation



Both the CCC and C groups answered using mostly phrases, at 44 percent and 40 percent of group participants respectively. Approximately 53 percent of the DCI group answered using a mix of words and phrases. However, the majority of the RM group (58 percent) answered using words only. This may suggest that, while RM is an effective method of memorizing characters, it is perhaps not the most effective way to acquire the use of characters (see Figure 7).

Figure 7. Results of four groups in method of answering text production



Summary

To summarize, the above data displays results of the first formative evaluation of a one-year study exploring the effectiveness of four different methods in teaching CFL. The research is significant in terms of raising awareness and interest for CFL in Irish schools, with future hopes of the language becoming a State-exam subject. At the same time, with an abundance of literature testing teaching methods for the recall and recognition of characters, the current research also examines the use of language in context in a series of formative and summative evaluations throughout the academic year.



The results of the first formative evaluation in section 5 show the initial effects of learning Chinese under each group's instruction (RM, DCI, CCC and C). Initial results suggest that the RM group, with an increased focus on the individual characters, is quite successful in recalling and recognizing characters when tested. This finding is backed by Dehn (2008) and Greenberg (2000), who state that the more focus one applies to the memorization of an item, the more successful the learning outcome. The ability to use the language was quite limited in this group, suggesting that memorization had occurred without a thorough understanding of the characters. The DCI group proves the findings of Packard (1990), Ye (2013) and Chen, Wang and Cai (2000) - that a reduced cognitive workload (by delaying the introduction of characters) has a more positive effect in the initial stages of learning Chinese. However, it remains to be seen how well this group will perform once the characters have been introduced. As the research is still ongoing, a paper is currently in preparation presenting further data of the second evaluation, in which the DCI group began learning the characters. In terms of the CCC group, it can be seen that the use of color has allowed for both memory and understanding of the characters in question. This finding reinforces Dzulkifli and Mustafar's (2013) theory that color has the ability to not only aid memorization but also maintain attention and understanding in class. Finally, the C group proves to be quite strong in conducting exercises such as cloze tests and reordering sentences. In this way, it can be seen that through an overall focus on reading, writing, speaking and listening, participants were able to use the language with more flexibility.

It is important to note that while connections can be seen between theory and the data collected in this paper, these are only the initial findings of a nine-month study. Further data from the three remaining formative evaluations and the two summative evaluations are necessary for a more in-depth understanding of the four CFL teaching methods. Once the data from these evaluations have been collected and analyzed, we may be in a better position to understand which methods are more suited to the early stages of learning CFL, compared to those more suitable in the long term. The findings from the first formative evaluation presented in this paper, however, at least establish the usefulness of the four different teaching methods when introducing the Chinese language to young learners.



Biodata

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