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Error Analysis on Writing Chinese Essay: A Case Study of Chinese Major Students of UBRU

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Abstract

In this research study, the researcher attempted to indicate errors in Chinese writing skills made by 25 third year Chinese major students of UBRU during the 2017 academic year in order to improve the ability of Chinese writing. The instrument of this study was an essay--a set topic for free writing, 'My Future Career' (我未来的事业). These third year Chinese major students were assigned to write this essay of at least 350 Chinese characters within 30 minutes. All of the errors taken from data collection were analyzed, identified and classified into various categorizations. After data analysis, the results of the study indicated that most students had six errors on Chinese writing: 1) word choice, 2) word order, 3) punctuation, 4) wrong Chinese character, 5) conjunction, and 6) classifier.

This study has enhanced on the manner in which students can be internalized the rules of targeted language, which is Chinese. The results of this study provided information on common trouble-spots in Chinese language learning which can be used in the preparation of effective teaching materials.

Keywords: Error Analysis, Chinese Essay, Writing Skill, Problem, UBRU Chinese Major Students

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Introduction

It is realized that Chinese has become one of the important languages used around the world because of its economic growth. In term of relations between Thailand and China, there have been various collaborations for many decades. Besides the economics aspect, the academic exchange and collaboration between Thailand and China has also been strengthened consistently. Schools and universities in Thailand have started to open teaching Chinese increasingly. This phenomenon, “Chinese fever”, has been met among all education levels to meet the current demand.

According to Ubon Ratchathani Rajabhat University (UBRU), Thailand, it has opened Chinese courses for undergraduate students for more than a decade. Most Thai students majoring in Chinese are from remote areas and have no background in Chinese. In addition, the similarities and differences of grammar rules of Thai and Chinese might get these Thai students confused on learning Chinese. Therefore, their Chinese language skills need to be improved by basing on the requirements of the Chinese curriculum of UBRU.

Based on the basic requirements of the Chinese curriculum of Chinese department, UBRU, the third year Chinese major students should be able to complete writing tasks for general purposes, e.g., describing personal experiences, impressions, feelings, or some events, and to undertake practical writing. They should be able to write within 30 minutes a short essay or composition of no less than 350 Chinese characters on a general topic, or an outline. The essay/composition should be basically complete in content, clear in the main idea, appropriate in diction and coherent in discourse. Students are expected to be able to have a command of basic writing strategies. Moreover, before their graduation, these students should be able to express, by and large, personal views on general topics and write short Chinese papers on given topics. They should be able to describe charts and graphs, brief reports and papers in their areas of specialty, to express their opinions freely and to complete within 30 minutes a short essay/composition of no less than 600 words. The essay/composition should be complete in content, clear expression of ideas, rich content, neat structure, and good logic.

Therefore, one of the challenges of UBRU lecturers of Chinese is how to improve Chinese language skills for their students. In this research study, the researcher attempted to indicate errors in writing skill made by 25 third year Chinese major students of UBRU in order to improve their written Chinese ability in order to be able to compete with others in the real world after their graduation.

Objectives of the Study

1. To find an error in Chinese writing for students in order to improve the ability of Chinese writing
2. To propose the results of this study to relevant stakeholders for solving and improving Chinese writing ability for students

Scope of the Study

The research focused on a group of 25 third year students majoring in Chinese language of UBRU during the 2017 academic year.

Literature Review

In Second Language Acquisition (SLA), error analysis focuses on studying the types and causes of language errors. Many linguists in the fields of SLA (e.g., Corder, Pit., 1967; Norrish, J., 1983; Hendrickson, J.M., 1987; Prabhu N., 1987; Ellis, Rod, 1997; Loewen, Shawn & Reinders, Hayo, 2011; Chang, Charles B., 2012; and Cook, Vivian, 2016) agree with the classification of language errors. These errors are mainly classified as follows: 1) modality (i.e., level of proficiency in speaking, writing, reading, and listening); 2) linguistic levels (i.e., pronunciation, grammar, vocabulary, and style); 3) form (e.g., omission, insertion, and substitution); 4) type (systematic errors/errors in competence vs. occasional errors/errors in performance); 5) cause (e.g., interference, interlanguage); and 6) norm vs. system.

J. Richard et al. (2002) pointed out that errors on using language are related to using word, speech act or grammatical items incorrectly. Moreover, Hendrickson (1987) stated that these errors are incomplete 'Signals' made by learners who have not yet mastered or reflected imperfect structured competence in the target language. The occurrence of errors on using the target language is relevant to both the learner who has not learned something yet, and selection of teaching methods made by language teachers (Anefnaf, 2017).

According to Corder (1967 & 1981), there are three aspects relating to errors on language learning: 1) the ability of language teachers to convey language knowledge clearly and correctly to their students; 2) the ways/procedures of acquiring target language made by students; and 3) students' behavior on learning the target language by themselves. Thus, the main cause of these errors on using the target language (second / foreign language) is concerned with L1 interference (X. Fang and J. Xue-mei, 2007; Anefnaf Z., 2017). In addition, Hashim, A. (1999) pointed out that the language effect is more complex and the cause of these errors can be from the target language itself and from the applied communicative strategies including the type and quality of the second/foreign instructions.

In term of errors types, J. Richard et al. (2002) classified into two main categories: 1) the Interlingual error that is caused by the interference of both the native language of the speaker, and the target language itself; and 2) the Intralingual error that takes place due to misuse of a particular rule of the target language. The Intralingual error is classified as follow: 1) Overgenerations; 2) Simplifications; 3) Induced errors; Errors of avoidance; and 4) Errors of overproduction. (see more in Corder, 1976; J. Richard et al.,2002).

In addition, James (1998) pointed out that the major category of errors consists of: 1) errors in spelling (violations of conventions for representing phonemes by means of graphemes); 2) errors in capitalization (omission & addition); and 3) errors in punctuation (omission, addition, and misselection). The parent category of grammar is largely based on the Louvain system, but some changes have been made to make the subsystem more systematic, efficient and inclusive. (see more in James (1998) and Gower (1995).

Because of time constraint and financial support, this research study focused solely on the occurrence of errors in Chinese essay writing made by UBRU Chinese major students.

Related Studies

The study of Marites (2016) concerning an investigation on the frequency and the types of sentence errors made by the students of College of Business, Entrepreneurship Accountancy in English writing sentences by using the audio-visual prompt titled “Rabbit and Turtle Story (the amazing version) for research tool revealed that the most common errors committed by students in the mechanical category is the wrong use of punctuation; wrong use of verb tense for grammatical category and the use of sentence fragments in the structural category.

According to Meruyert (2016), this researcher investigated English writing errors made by Kazakh and Russian First Language speakers. The samples of this study were 32 students studying at Grade 6. The study examined errors in a corpus of 32 compositions and 32 translations written by these participants. Errors were identified and classified into some categories. The findings indicated that there were seven most common errors committed by the participants as follows: 1) pluralization, 2) subject-verb agreement, 3) omission or misuse of articles, 4) wrong choice of words, 5) mission or misuse of prepositions, 6) spelling, and 7) misuse of like+Ving form.

Sittisak (2012) studied error analysis of English compositions written by English major students of Buriram Rajabhat University, Thailand was also related to this research study. In his study, 38 English major students were purposively

selected for data analysis. The method for data collection was a composition—a set topic for free writing, ‘A Memorable Incident of My Life’. These students were assigned to write one essay consisting of 140-200 words within 60 minutes. The scheme of error classification adapted from Dulay et al. (1982). The findings of this research indicated that these students made the errors in all three main categories: 1) errors in grammar that were most frequently found; 2) errors in lexicon; and 3) errors in syntax were followed respectively.

The results from the above research studies revealed errors in English writing that were made by students. The common errors e.g. subject-verb agreement, omission or misuse of articles, wrong choice of words, mission or misuse of prepositions, spelling, etc. were found in their writing. Following these related studies, the researcher would like to apply the procedure of error analysis (Corder, 1981; Dulay et al., 1982; Ellis, 1994; and Ellis & Barkhuizen, 2005) to improve the Chinese writing ability of the UBRU Chinese major students.

Research Methodology

Sample Group

This quality research mainly focused on the errors taken from the Chinese essay written by the target students, 25 third year students majoring in Chinese of UBRU who have studied Chinese in academic year 2017.

Research Tool and Data Collection

The given essay entitled: “My Future Career” () was used as the research tool. These third year Chinese major students were assigned to write this essay of at least 350 Chinese characters within 30 minutes. They were expected to complete this writing task by describing personal background and learning experiences, impressions, feelings, expectations, or some events related to the given topic. The essay should be basically complete in content, clear in the main idea, appropriate in diction and coherent in discourse. All their essays were sent back to the Chinese lecturer for data analysis after time was over.

It was expected that the procedure of error analysis proposed by Corder, 1981; Dulay et al., 1982; Ellis, 1994; and Ellis & Barkhuizen, 2005 would help the researcher find out the errors in the students’ Chinese writing such as errors in subject-verb agreement, omission or misuse of articles, wrong choice of words and punctuations, mission or misuse of prepositions, spelling, etc. All findings would be presented in the results of the study section.

Data Analysis

This study applied the procedure of error analysis (Corder, 1981; Dulay et al., 1982; Ellis, 1994; and Ellis & Barkhuizen, 2005) as the main criteria for data analysis. The set of procedure was as follows: 1) Collection of a sample of learner language; 2) Identification of errors; 3) Description of errors; and 4) Explanation of errors.

Results of the study

Before presenting the results of data analysis, it is noted that translating English into Chinese is not completely and exactly the same in terms of the differences of structures and grammars of these two languages. The English translation in all tables below is emphasized only on the same meaning between both languages.

As data analysis, the results indicated six errors in Chinese writing were made by students: 1) word choice, 2) word order, 3) punctuation, 4) wrong Chinese character, 5) conjunction, and 6) classifier. The errors which were made by students in Chinese writing were classified as follows.

Word choice errors

The examples of word choice errors made by the UBRU Chinese major students were as below.

Table 1 Examples of word choice errors

No.	Error	Correction
1	如果毕业了, 我想做导游的工作, 不想做老师, 因为老师太累了。	如果毕业了, 我想当导游, 不想当老师, 因为当老师太累了。 If I graduate, I want to be a tour guide. I do not want to be a teacher because being teacher is very hard working career. (做——当)
2	我很喜欢小孩子, 他们既可爱但是活泼, 我想教他们说汉语。	我很喜欢小孩子, 他们既可爱又活泼, 我想教他们说汉语。 I really love my children. They are not only lovely, but also vivid. I want to teach them speak Chinese. (但是——又)

Table 1 (cont.)

No.	Error	Correction
3	去普吉岛工作可以遇到很多外国人，还有很多中国人，可以和他们谈话。	去普吉岛工作可以遇到很多外国人，还有很多中国人，可以和他们聊天。 Working in Phuket island, we can find foreign tourists easily. We also have many opportunities talking Chinese with Chinese tourists over there. (谈话——聊天)
4	我觉得汉语很难，但是我很爱。	我觉得汉语很难，但是我很喜欢。 I feel that Chinese is very difficult, but I really like to learn it. (爱——喜欢)
5	我找到好工作以后，想存钱买车。	我找到好工作以后，想赚钱买车。 After I get a job, I would like to collect money for buying a car. (存——赚)

The examples of word choice errors above revealed that the UBRU Chinese major students were confused about selecting appropriate / correct words to complete the sentences. These errors were related to selection on lexical errors--wrong denotation and collocation of words (see more in James, 1998; Gower, 1995; and J. Richard et al. (2002).

Errors in word order

The examples of errors in word order made by the UBRU Chinese major students were as below.

Table 2 Examples of errors in word order

No.	Error	Correction
1	我喜欢中国文化，想学习书法在中国，毕业之后教学生写书法。	我喜欢中国文化，想在中国学习书法，毕业之后教学生写书法。 I like Chinese cultures and I want to learn Chinese calligraphy in China. After my graduation, I want to be a teacher teaching Chinese calligraphy for my students.

Table 2 (cont.)

No.	Error	Correction
2	因为爸爸妈妈是老师，所以他们让我想也成为老师。	因为爸爸妈妈是老师，所以他们也想让我成为老师。 Because my parents are teachers, so they want me to be a teacher.
3	我还想在中国发展等毕业之后。	等毕业之后，我还想在中国发展。 After my graduation, I will further my study in China.
4	我的家在乌汶，那里很多汉语老师教中文给学生。	我的家在乌汶，那里有很多给学生教中文的汉语老师。 Ubon is my hometown. There are many Chinese teachers teaching Chinese for Thai students in there.
5	以后在未来，我还要继续学习汉语。	以后，我还要继续学习汉语。 I will restart learning Chinese.

The examples of errors in word order (wrong part of speech and word repetition were included) above revealed that the UBRU Chinese major students were confused on the differences of language structure of Thai (L1) and Chinese (L2). These errors might be from both the inter lingual errors, and the intralingual errors (Corder, 1976; Hashim, A., 1999; J. Richard et al., 2002; X. Fang and J. Xue-mei, 2007; Anefnaf Z., 2017). In addition, it was related to the errors on the structural elements of a sentence and their order (James, 1998 & Gower, 1995).

Errors in using punctuation

The examples of errors in using punctuation made by the UBRU Chinese major students were as below.

Table 3 Examples of errors in using punctuation

No.	Error	Correction
1	那个小学离家很近。而且学生很可爱、他们都喜欢说汉语。	那个小学离家很近，而且学生很可爱，他们都喜欢说汉语。 That primary school is not too far from their homes. Besides, the students at that school are very lovely, and they like to speak Chinese very much.

Table 3 (cont.)

No.	Error	Correction
2	当老师，医生，导游，翻译，我最喜欢当老师。	当老师，医生，导游，翻译，我最喜欢当老师。 I like to be a teacher the most comparing to being a doctor, a tour guide, or an interpreter.
3	我的朋友在清迈当导游，他说：很累，一点也不轻松。	我的朋友在清迈当导游，他说：“很累，一点也不轻松。” My friend is a tour guide working in Chiangmai. He said: “I am very tired of work, unhappy at all”.
4	当上导游之后：我要去买摩托车。	当上导游之后，我要去买摩托车。 After working as a tour guide, I will buy a motorcycle.
5	我学汉语的时候，经常看<翻译官>这个电视剧，所以我想当翻译。	我学汉语的时候，经常看《翻译官》这个电视剧，所以我想当翻译。 When I studied Chinese, I always watched TV Drama—‘翻译官’. This TV Drama made me want to be an interpreter.

The examples above revealed that the student used wrong punctuation in sentences. These errors might be from both the inter lingual errors, and the intralingual errors (Corder, 1976; Hashim, A., 1999; J. Richard et al., 2002; X. Fang and J. Xue-mei, 2007; Anefnaf Z., 2017). In addition, it was related to the errors in the structural elements of a sentence and their order (James, 1998 & Gower, 1995).

Errors in writing Chinese character

The examples of errors in writing Chinese character made by the UBRU Chinese major students were as below.

Table 4 Examples of errors in writing chinese character

No.	Error	Correction
1	汉语语法太难了，发音简单点。	汉语语法太难了，发音简单点。 Chinese grammar rules are very difficult, but Chinese pronunciation seems easier.

Table 4 (cont.)

No.	Error	Correction
2	我想在 <u>酒店</u> 工作。	我想在 <u>酒店</u> 工作。 I want to work in the field of hotel and hospitality.
3	奇 <u>摩托</u> 车上班，大概二十分钟。	<u>骑</u> 摩托车上上班，大概二十分钟。 It takes around 20 minutes by riding motorbike to my workplace.
4	在 <u>未来</u> ，找工作很不容易。	在 <u>未来</u> ，找工作很不容易。 It is not easy to look for a good job in the future.
5	我想教小 <u>孩</u> 子说中文。	我想教小 <u>孩</u> 子说中文。 I want to teach my kids speak Chinese.

The examples above revealed that the student wrote wrong Chinese characters (lexical errors) in sentences. Due to the similarity of many Chinese characters, misunderstanding and confusion on writing Chinese characters might occur.

Errors in using conjunction

The examples of errors in using conjunction made by the UBRU Chinese major students were as below.

Table 5 Examples of errors in using conjunction

No.	Error	Correction
1	在酒店工作，可以和客人说汉语， <u>然后</u> 可以提高我的口语。	在酒店工作，可以和客人说汉语， <u>而且</u> 可以提高我的口语。 Working at a hotel, I have many opportunities talking Chinese with Chinese tourists. It can make me improve my spoken Chinese.
2	姐姐的汉语比我好， <u>而且</u> 她的工作和汉语没有关系。	姐姐的汉语比我好， <u>但是</u> 她的工作和汉语没有关系。 My elder sister's Chinese is better than mine, but her working field does not relate to using Chinese for communication.
3	<u>不管</u> 工资高， <u>而且</u> 也不累。	<u>不仅</u> 工资高， <u>而且</u> 也不累。 It is not only getting high salary, but also not too tired.

Table 5 (cont.)

No.	Error	Correction
4	可是不能找到老师的工作，我就在饭馆给妈妈帮忙。	如果不能找到老师的工作，我就在饭馆给妈妈帮忙。 If I cannot be a teacher, I will help my mother work at this restaurant.
5	我想当翻译还是导游。	我想当翻译或者导游。 I want to be an interpreter or a tour guide.

The examples of errors in using conjunctions above were related to selection on lexical errors--wrong denotation and collocation of words (see more in James, 1998; Gower, 1995; and J. Richard et al. (2002).

Errors in using classifier

The examples of errors in using classifier made by the UBRU Chinese major students were as below.

Table 6 Examples of errors in using classifier

No.	Error	Correction
1	我想当一位优秀的老师。	我想当一名优秀的老师。 I want to be a famous teacher.
2	等有了工作，我可以买一个新的摩托车。	等有了工作，我可以买一辆新的摩托车。 After getting this job, I can buy a new motorcycle.
3	在中国买了一个汉语词典，以后还会用到的。	在中国买了一本汉语词典，以后还会用到的。 I bought a Chinese dictionary from China already, but I will use it later.
4	我还想在那个公司工作。	我还想在那家公司工作。 I still hope to work for that company.
5	对我来说，第一次工作的薪水不重要。	对我来说，第一份工作的薪水不重要。 In my opinion, the amount of the first income is not more important than working experiences I will get from.

The examples above revealed that the student selected wrong Chinese classifiers (lexical errors) in sentences. Due to the varieties of Chinese classifiers, misunderstanding and confusing on writing Chinese characters might occur.

Conclusion and Discussion

After data analysis, the results of the study indicated that most students had six errors in Chinese writing: 1) word choice, 2) word order, 3) punctuation, 4) wrong Chinese character, 5) conjunction, and 6) classifier. These findings of this study supported many theories/concepts of linguists (e.g., Corder, 1976 & 1981; Bachman, 1990; Ellis, 1994; Hendrickson, J.M., 1987; Prabhu N., 1987; Gower, 1995; Ellis, Rod, 1997; James, 1998; Connor & Mbaye, 2002; J. Richard et al., 2002; and Ellis & Barkhuizen, 2005).

In general perception, writing Chinese seems difficult for non-native speakers of Chinese. For Thai students, the hardest part of learning Chinese is writing Chinese characters. The Chinese character evolved from the hieroglyphics, while the Thai language is a phonogram. Although there are currently 3,500 commonly used Chinese characters, there is not a single fixed sequence pattern and cut-off line for the development of Chinese characters. This particularity causes learners to face barriers in recognition, reading, and writing, leading to some students writing wrong characters. Based on the data collected, writing Chinese characters seemed the most difficult for UBRU Chinese major students to remember.

The results presented in the section of data analysis of this study revealed that the writing Chinese skill of UBRU Chinese major students needs to be improved systemically. Therefore, writing courses should be continued from the beginner to the upper grade consistently. Teachers teaching Chinese should adjust/adapt their own teaching philosophy, create a learning environment for Chinese language teaching, adjust the progress of teaching materials, and help students improve their learning methods. The important things that teachers who teach Chinese need to keep in mind is whenever they teach Chinese to foreign students, especially writing part, they need to integrate all skills including vocabulary and techniques of writing Chinese characters into their teaching method properly to enable students to remember Chinese characters more effectively (Rivers, 1970).

As the results of the study mentioned earlier, Chinese writing has been an emphasis and difficulty of the second/foreign language acquisition for language learners. Many students, especially the UBRU Chinese major students, have difficulties in Chinese writing. Most of the UBRU students' Chinese is poor because they have learned little Chinese (or no Chinese background) before they come to the

university. Due to lack of vocabulary and grammar knowledge, and the influence of their native language transfer, these UBRU students encounter many problems in their writing. They sometimes are confused of the differences between the Chinese language structures and those of Thai as well. There are some problems in students' linguistic competence in addition to their lack of knowledge in writing techniques (Du, 2001). It is a fact that even if they have acquired a certain amount of vocabulary and have learned much about Chinese grammar, they are still poor at writing. They cannot transfer what they have learned in the target language, thus failing to express their ideas freely. In addition, they are not very good at organizing a discourse. Some writings are just piles of words or expressions, which do not make any sense to the reader. Another weakness of their writing is that it lacks unity and coherence. At times it is difficult to find a topic sentence in their essay. Even though a topic sentence does exist in their composition, the supporting details branch off from it in the course of writing. Writing is a reflection of thinking. The mother language transfer affects a student's thought. However, these students, as foreign students who study Chinese, need to pay more attention to writing Chinese correctly and grammatically.

This study attempted to shed light on the manner in which students internalized the rules of the target language, which is Chinese. The results of this study provided information on common trouble-spots in Chinese language learning, especially Chinese writing skill which can be used in the preparation of effective teaching materials.

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Investigation on Teaching Chinese Methods: A Case Study of Thai Teachers Teaching Chinese of OBEC, Ubon Ratchathani, Thailand

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Abstract

The objective of this research was to investigate using teaching methods of Thai teachers teaching Chinese in Ubon Ratchathani province, Thailand. The samples of this research were randomized from 15 schools (both public and private schools). The researcher used 1) questionnaire, 2) interview, and 3) observation for research tools and data analysis. The statistic used for data analysis was percentage. The research finding revealed that the sample schools in primary level mostly used 5 similar teaching methods: 1) Audio-Lingual method (93.34%); 2) Total Physical Response method (80%); 3) Grammar Translation method (66.66%); 4) Direct method (60%); and 5) Natural method (53.33%).

In addition, the sample schools in secondary level mostly used 5 similar teaching methods as follows: 1) Audio-Lingual method (86.66%); 2) Grammar Translation method (66.66%); 3) Task-Based Language Teaching method (66.66%); 4) Discussion method (60%); and 5) Direct method (60%). Besides the reflections of these samples from the interview revealed that they had various problems and limitations of teaching in their schools, such as the lack of human resource (native Chinese teacher), limitation of financial support for doing various learning activities, the lack of standard Chinese textbooks and other teaching materials, and the unclear direction of opening Chinese teaching in their schools.

Keywords: Teaching and learning Chinese, Teaching method, Students, Teachers, Ubon Ratchathani Province

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Introduction

Significance of the study

Teaching and learning Chinese in Thailand

At present, the influence of the economic growth of China has made the ASEAN countries, especially Thailand need to adapt and integrate its strengths for this change and challenge. As mentioned above, it is realized that Chinese has become one of the important languages that is used around the world because of that reason. Besides the economic aspect, the collaboration between Thailand and China related to cultural exchange has also been strengthened. More and more people in Thailand have started to learn Chinese and Chinese cultures. This phenomenon, “Chinese fever”, has been met among all education levels to meet the current demand (Narueporn and Yang Ting, 2013).

According to Budsaba (2011), the increasing number of schools offering the Chinese language seems to provide convincing evidence that it is indeed gaining popularity. The Office of the Basic Education Commission of Thailand, on behalf of the Ministry of Education, recorded as many as 166 public and 187 private schools (a total of 353 schools) that offered the Chinese language to their elementary, middle, and high school students (Lei, 2007), in addition to vocational colleges and other educational institutions that offer the Chinese language. In addition to the Thai government’s efforts and investment into education, the Chinese government has generously provided numerous supports to Thailand (Theeravit et al.,2008).

At present, in term of the context of the office of the basic education commission of Thailand, Chinese has been conducted into three main types: 1) elective Chinese courses, 2) Chinese club for interested students, and 3) Chinese as minor and major subjects in the high school level. However, a serious but important question with regard to Chinese language teaching emerges: the quality of Chinese education in Thailand. In response to this question, a number of scholars examined the success of Chinese language teaching at various levels of education (e.g., Theeravitnet al.,2008; Laohathiansin et al., 2000, Sanguannual, 2003).

The overall data presented above reflected teaching Chinese in Thailand might not be as successful as it should be. One of the reasons of teaching failure might come from teaching methods selected by teachers teaching Chinese. Therefore, this study attempted to find out teaching methods chosen by those teachers and present to relevant stakeholders for upgrading Chinese education in Thailand.

Teaching and learning Chinese in North-Eastern Thailand

According to Metch. S (2010), teaching and learning Chinese in the Northeast of Thailand in all education levels has been conducted for many years. However, it was found that there were five main problems: 1) Teaching and learning Chinese; 2) Lack of human resources (Chinese teachers); 3) Financial support; 4) Lack of standard Chinese textbooks and other teaching materials; and 5) Opening Chinese teaching in schools without a clear direction. Thus, the researcher, as a teacher of Chinese in Ubon Ratchathani province, is interested in indicating teaching and learning Chinese problems resulting from the inappropriate teaching methods selected by Thai teachers teaching Chinese.

The schools teaching Chinese in Ubon Ratchathani province

After surveying the number of schools teaching Chinese in Ubon Ratchathani province, there are 45 schools under the supervision of the Office of the Basic Education Commission (OBEC). Due to the limitation of study and financial support, the researcher needed to randomized some schools to be the representatives of this study

Objective of the Study

The objective of the study was to investigate using teaching methods of Thai teachers teaching Chinese for the Office of the Basic Education Commission in Ubon Ratchathani province, Thailand.

Scope of the Study

The 15 schools teaching Chinese in Ubon Ratchathani were randomized for data collection and data analysis.

Literature Review

Theoretical Concepts of Language Teaching

According to Anthony (1965) cited in Richards and Rodgers (2001), “approach” is the level at which assumptions and beliefs about language learning are specified; “method” is the level which theory is put into practice and at which choices are made about the particular skills to be taught, and the order in which the content will be presented; “technique” is the level at which classroom procedures are described. Besides, Richards & Rodgers (2001) point out that “approach” is a theory of the nature of language (Structural view, Functional or Communicative view, and Interactional view see more in Yule 2006) and a theory of the nature of

language learning (Behaviorism, Nativism, and Constructivism see more in Prichard 2009); “teaching technique” comprises: (1) the general and the specific objectives of the method; 2) a syllabus models; 3) types of learning and teaching activities; 4) learners roles; 5) teachers roles; 6) the role of instructional materials. In addition, Mackey (1975) states: “method” may mean different things to different people. For some, it means a set of teaching procedures; for others, the avoidance of teaching procedures. For some, it is the primary of a language skill: for others it is the type and amount of vocabulary and structure.

To summarize the different definitions of terms: “approach”; “method”; “technique” and procedure, and their coherence in language teaching, the table of the definitions of each retrieved from <http://www.slideshare.net/hernanebuella/general-methods-and-techniques-of-teaching> (2015) is presented below.

Table 1 Definition of “Approach” “Method” “Techniques” and “Procedure” in teaching language (source: <http://www.slideshare.net>: 2015)

Approach	Method	Techniques	Procedure
*It is a conjunction of ideas related to the nature and teaching of a given language.	*It is considered the practical realization of an approach.	*It is considered the practical realization of an approach.	*It is an ordered sequence of techniques.
* It refers to theories about the nature of language and language learning.	* It is understood as a group of procedures, a system that clearly explains how to teach a language (syllabus organization – contents and skills to be taught – roles of teachers and learners kinds of materials to use)	* It is a tool that is used to obtain an immediate result.	* A procedure can be described in terms such as first you do this, then you do that. It is a lot smaller than a method, but it is a sequence of techniques.

Table 1 (cont.)

Approach	Method	Techniques	Procedure
* It describes how people acquire their knowledge of the language and makes statements about conditions which will promote successful language learning.	* The method is based on a specific approach. The approach is axiomatic where as the method is procedural.	* It can be understood as a set of actions, operations and strategies which have to be executed accordingly to a perception on how to obtain an expected result.	* It can be understood as a set of actions, operations and strategies which have to be executed accordingly to a perception on how to obtain an expected result.
	* When a method has fixed procedure, informed by a clearly articulated approach, it is easy to describe. However, if a method takes procedures and techniques from a wide variety of sources, that they are used in other methods or are mentioned by other beliefs, it will be very hard to continue to describe it as a method.	* These techniques must be coherent with the method, and therefore, they must be in harmony with the approach.	
* It offers a method of language competence.		* Some techniques can be found in different methods whereas other ones are specific to a given method.	

Table 1 (cont.)

Approach	Method	Techniques	Procedure
* It is the level in which a whole theory and its beliefs are reflected regarding a language and its learning. It is a much wider concept than method and technique.	-	-	-
* It is the source of the principles of language teaching.	-	-	-
*It describes how a language is used and how its constituent parts interlock.	-	-	-

Types of Language Teaching Methods

It is known that there are several methods of teaching Chinese to students depending on the teaching situation, setting, purposes, and the resources available. According to the definitions in table 1, it can be concluded that an appropriate teaching method should be based upon a selected approach. Meanwhile, techniques of language teaching and the teaching procedures also should be based on that particular teaching method. Richards and Rodgers (1986) state: In order for an approach to be translated into a method, an instructional system must be designed considering the objectives of the teaching/learning, how the content is to be selected and organized, the types of tasks to be performed, the roles of students, and the roles of teachers.

Listed below are brief summaries of some of the more popular second language teaching methods of the last half century. For a more detailed analysis of the different methods, see *Approaches and Methods in Language Teaching* Richards and Rodgers (1986) published by CUP, Cambridge.

Table 2 Brief summaries of some of the more popular second language teaching method of the last half century (source: Richards and Rodgers, 1986)

Name of Method	Brief summary
Direct method	<ul style="list-style-type: none"> - mother tongue is not allowed - grammar rules are avoided - good pronunciation is emphasized
Grammar-translation	<ul style="list-style-type: none"> - translation to and from the target language - Grammar rules are to be memorized and long lists of vocabulary learned by heart - Oral ability is little or no emphasis
Audio-lingual	<ul style="list-style-type: none"> - much practice of dialogues of every situation - listen and drill extensively on target language before being seen in its written form
Structural approach	<ul style="list-style-type: none"> - sees language as a complex of grammatical rules which are to be learned one at a time in a set order
Suggestopedia	<ul style="list-style-type: none"> - the students are suggested that the language is easy - and in this way the mental blocks to learning them are removed
Total Physical Response (TPR)	<ul style="list-style-type: none"> - the learner respond to simple commands - the teacher stresses the importance of aural comprehension
Communicative language teaching (CLT)	<ul style="list-style-type: none"> - enables the learner to communicate effectively and appropriately in the various situations
Silent Way	<ul style="list-style-type: none"> - the teacher says as little as possible in order that the learners can be in control of what he/she wants to say
Community language learning	<ul style="list-style-type: none"> - build strong personal links between the teacher and student so that there are not blocks to learning - much talk in the mother tongue which is translated by the teacher for repetition by the student

Table 2 (cont.)

Name of Method	Brief summary
Immersion	<ul style="list-style-type: none"> - students are immersed in the Chinese language for the other subjects : math, sciences, humanities etc. through the medium of Chinese
Task-based language learning (TBL)	<ul style="list-style-type: none"> - teach on the completion of a task which in itself is interesting to the learners - learners use the language they already have to complete the task and there is little correction of errors
Natural approach	<ul style="list-style-type: none"> - stress the similarities between learning the first and second language. There is no correction of mistakes
Lexical Syllabus	<ul style="list-style-type: none"> - base on a computer analysis of language which identifies the most common (and hence most useful) words in the language and their various uses
Cooperative Learning	<ul style="list-style-type: none"> - mix levels of students ability into group and reward according to the group success of an individual member - face-to-face interaction/positive interdependence/individual accountability/group processing/collaborative skills

Related Studies

The study of Patcharee (2012), entitled “Development on the skill of remembering vocabulary by using crossword games for secondary school students (Grade 3)” was related to this research study. The method used for teaching this targeted students was inductive teaching method, one of the student-centered approaches. The findings showed that the scores of the post-test made by the students were higher than their pre-test. Their ability of remembering vocabulary was improved by this teaching method.

Further, the positive attitude of students regarding doing language activities was found. In addition, the study of Nunthida (2012) entitled “Development on the skill of remembering and reading vocabulary by using vocabulary cards (flashcards)”. The teaching method was Task-based language learning (TBL). The pre-test & post-test were used for the research tools. The results indicated that this teaching method helped the students have more ability on remembering new Chinese vocabularies.

Besides, Napawan (2013) studied about how to develop the ability on remembering Chinese vocabulary of second year vocational students. The teacher used TBL for teaching these students. The findings showed that the scores of the post-test were higher than the pre-test, and the TBL helped these students improve their ability to remember vocabulary.

In addition, the study of Sukanya (2013) entitled “Development on reading Chinese skill for daily life: A Case Study of the Primary School Students (grade 4) of Rathprachanukroh 15, Chiangrai province” was also interesting. The pre-test & post-test and the flashcard were research tools. TBL was selected for teaching the targeted students. It was found that their post-test scores were higher than the pre-test scores, and their Chinese reading skills through doing activities were improved.

Thanaporn and Anuth (2014) studied how to apply multimedia for developing basic Chinese learning of undergraduate students majoring in business Chinese at Panyapiwat Institute. It was found that teaching by using multimedia helped these students improved their Chinese competence and understand more about Chinese cultures.

The above related studies indicated that there are many interesting teaching methods that the teachers of languages can choose to teach in classroom. However, the age of the students including the readiness of classroom setting are needed to be considered before choosing teaching methods. This research study tried to survey teaching methods selected by Thai teachers teaching Chinese in the Office of the Basic Education Commission of Ubon Ratchathani province to be considered for Chinese teaching development in the future.

Research Methodology

This quality research mainly focused on the results taken from the collected questionnaire and analyzed by statistic program and descriptive research.

Research Procedures

To ascertain the reliability of the questionnaire, the questionnaire was tried out in the second semester of the 2017 academic year with 15 teachers of Chinese who served as the subjects of this study. The entire number of returned questionnaires

from the try-out was calculated to obtain coefficient reliability by using SPSS CP program.

Sample Group

The 15 samples were randomized from 45 schools, which were under the supervision of the Office of the Basic Education Commission (OBEC) in UbonRatchathani Province, Thailand. The researcher randomized 15 schools from 45 schools as sample groups because data collection has limited financial support and some schools did not allow to collect data.

Research Tools and Data Collection

The research tools were questionnaire consisting of 2 parts: 1) general information of respondents, and 2) questions about Chinese teaching methods.

The questionnaires were distributed to the targeted Thai teachers teaching Chinese in the 15 sample schools for data collection. Moreover, teaching observation and interview were used with questionnaires for data analysis. The researcher sent letters and the questionnaires with stamped addressed envelopes to the 3 experts in this field for checking. For the next step the respondents sent back the questionnaires by mail.

Results of the study

The results were divided into 3 main parts: 1) general information of respondents; 2) types of teaching methods of respondents; and 3) suggestions of respondents. Each result is presented as below.

General Information of Respondents

Table 3 General Information of Respondents

Information	Number	Percentage
1. Gender		
Male	4	12.12
Female	29	87.88
All	33	100
2. Age		
20-30 years old	21	63.63
31-40 years old	5	15.15
41-50 years old	1	3.03
>50 years old	6	24.25
All	33	100

Table 3 (cont.)

Information	Number	Percentage
3. Occupation		
Government Teacher	4	12.12
Government Employee	21	63.63
Assistant Teacher	0	0
Private Teacher	8	24.25
All	33	100
4. Working Experience		
1-5 year	23	69.70
6-10 year	5	15.15
11-15 year	0	0
16-20 year	0	0
>21 year	5	15.15
All	33	100
5. Level of qualification		
Bachelor degree	32	96.97
Master degree	1	3.03
Doctorate degree	0	0
All	33	100

Table 3 showed that most respondents were females. Their mean age was from 20 to 30 years old. Their working experience was in the period of 1 to 5 years.

Types of teaching methods in the primary school level of respondents

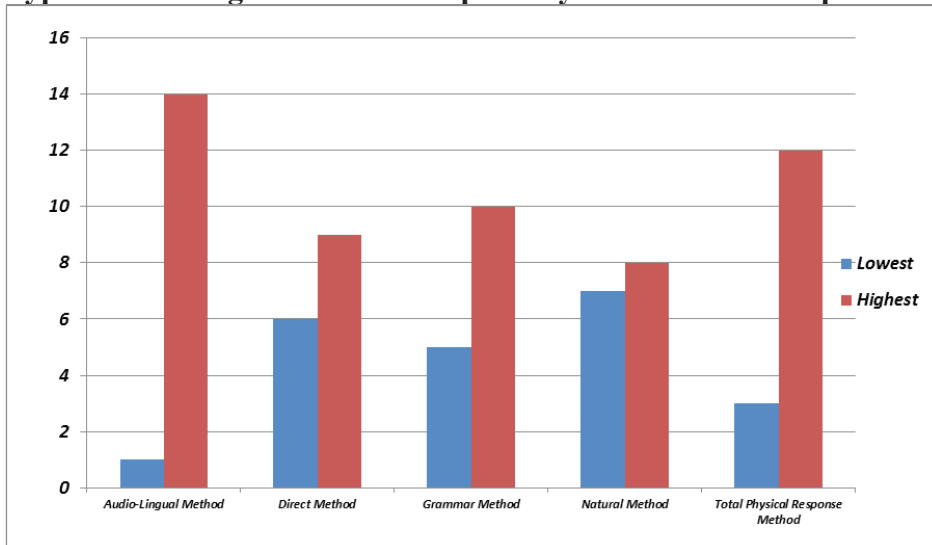


Figure 1 Types of teaching methods in the primary school level

Types of teaching methods in the secondary school level of respondent

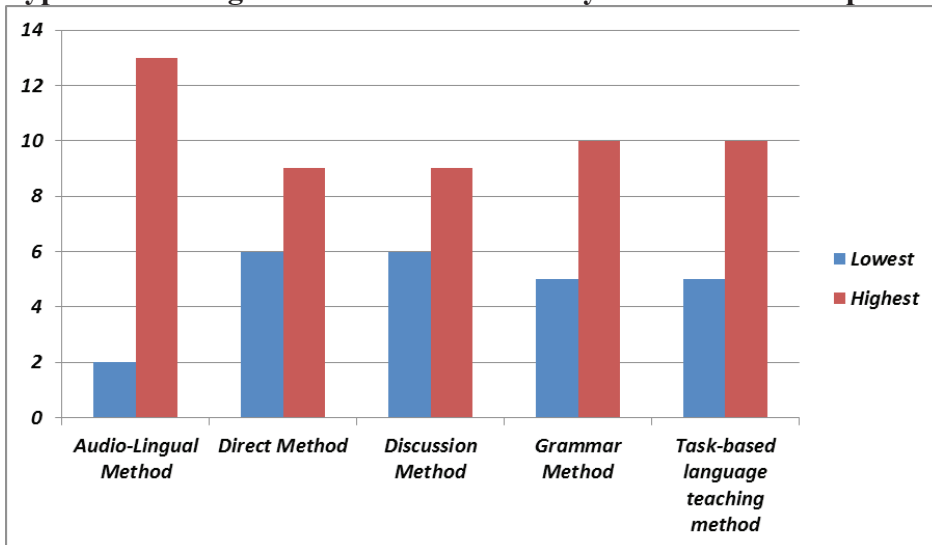


Figure 2 Types of teaching methods in the secondary school level

Conclusion and Discussion

According to the results of this study shown in the figure 1 above, it was seen that there were 5 types of teaching methods mostly selected for teaching Chinese in primary school level of Ubon Ratchathani province. The 5 types of teaching methods were as follows. 1) Audio-Lingual method (Highest 93.34% and Lowest 6.66%); 2) Direct method (Highest 60% and Lowest 40%); 3) Grammar translation method (Highest 66.66% and Lowest 33.34%); 4) Natural method (Highest 53.33% and Lowest 46.67%); and 5) Total Physical Response method (Highest 80% and Lowest 20%).

In addition, the teaching methods mostly selected by teachers of Chinese in secondary school level of Ubon Ratchathani province also have 5 methods: 1) Audio-Lingual method (Highest 86.66% and Lowest 13.34%); 2) Direct method (Highest 60% and Lowest 40%); 3) Discussion method (Highest 60% and Lowest 40%); 4) Grammar Translation method (Highest 66.66% and Lowest 33.34%); and 5) Task-based language teaching method (Highest 66.66% and Lowest 33.34%).

From the critical analysis of teaching methods for both primary schools and secondary schools. There are some teaching method that are similar for example Audio – Lingual method, Grammar Translation method and Direct method.

The researcher found that 1) Audio–Lingual method is the highest percentage because there is much practice of dialogues of every situations and listen and drill extensively on target language before being seen in its written form. 2) Grammar Translation method because translation to and from the target language Grammar rules are to be memorized and long lists of vocabulary learned by heart. Moreover oral ability is little or not emphasis. 3) Direct method because mother tongue is not allowed and grammar rules are avoided. Besides good pronunciation is emphasized.

Besides, the reflections of these samples from the interview revealed that they had various problems and limitations of teaching in their schools, such as the lack of human resource (native Chinese teacher), limitation of financial support for doing various learning activities, the lack of standard Chinese textbooks and other teaching materials, the unclear direction of opening Chinese teaching in their schools. These problems and limitations were relevant to the study of Metch. S (2010).

The findings of both primary school level and secondary school level presented above indicated that Thai teachers teaching Chinese in Ubon Ratchathani province faced the obstacles on teaching Chinese in their schools, but they tried to adapt their Chinese teaching to suit their school contexts by considering the age of the students, the difference and the readiness of students' language ability, including the way to manage classroom settings properly.

In term of classroom management, it needs to be considered on the actions and directions that teachers use to create a successful learning environment to make a positive impact on students achieving given learning requirements and goals. Besides, good teacher-student relationships in the classroom could help cooperative learning go smoothly. The language teachers might examine on “5Ws and 1H” (What, When, Where, Who, Why, and How) to select appropriate teaching methods for the successful learning of their students.

Suggestion

Due to the time limitation of this research study, the researcher could collect the data only in Ubon Ratchathani province. Besides, most representatives of this study were female teachers and their mean age was from 20 to 30 years old. Thus, their teaching experiences might be related to their teaching method selection. The suggestions for a further study are: 1) the scope and the area of the next study should be expanded, and 2) the samples should be selected from all mean age of teachers of Chinese equally.

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A Study on Early Childhood Teachers and Pre-service Teachers' Belief, Confidence, and Using Technology in Teaching Mathematics for Early Childhood Students

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Abstract

Teaching Mathematics to children in early year is essential to early childhood students. The purposes of this study were aimed: to investigated and to compared the Early Childhood teachers and pre-service teachers' belief, confidence, and use of technology in teaching Mathematics for Early Childhood student. This data collection used survey method from 67 Early Childhood teachers from Nakhon Sawan Primary Educational Service Area Office which came from the sample technique and 70 of 4th year Early Childhood pre-service teachers from Nakhon Sawan Rajabhat University, Nakhon Sawan Province, Thailand which came from purposive technique.

The results shows that the teachers' belief about Early Childhood Students and Mathematics" and "Teachers confidence in helping Early Childhood Students learn Mathematics" and "Teachers' Confidence in Their Personal Mathematics Abilities" between in-service and pre-service teachers were different with .05 level of statistical significant where pre-service teacher have higher belief than in-service teachers. However, in "Fear in in their personal Mathematics abilities" it shows that in-service teacher have higher belief than pre-service teachers with different with .05 level of statistical significant. This research will be benefit to develop the training program to both in-service and pre-service teachers in developing confident, belief, and using of technology in teaching Mathematics to Early Childhood Students.

Keywords: Teaching Mathematics for Early Childhood students, Belief, Confidence, Using Technology

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Introduction and Theories related work

Literacy, numeracy and health and well-being are described by the Scottish Government ((2011) cited in Donald (2011)) as the big three essentials, often referring to them as the building blocks to lifelong learning. Also, Vygotsky ((1896-1934) cited in Donald (2011)) argued with his social-constructivist theory that adults had a key role to play in scaffolding children's learning. He referred to the child's 'Zone of Proximal Development' and the active role adults had to play in enabling children to reach their potential, this is still having a major influence in educational establishments today. It is evident that children use mathematics and numeracy from a very young age; they have a need to learn about mathematics in order for them to be able to make sense of and live in their world. Mathematical experiences for young children should be meaningful and purposeful in order to allow the child to use familiar concepts. Research shows that focusing on mathematics particularly in the early years has major benefits throughout a child's life helping them not only in their later education but also all the way through life. Using mathematics are part of everyday life for everyone. Being a successful mathematician starts right from birth, especially for young children. They are learning about mathematics through everything they see and do such as counting, measuring, sorting, patterns, numbers, shapes, size and position. Having good mathematical skills will help young children in the future for solving problems and creative thinking (www.minedu.govt.nz/Parents, 2010). Early childhood education should introduce simple mathematical concepts. By introducing children to basic terminology early in childhood, teachers are making the elementary education a little easier, and introducing math concepts should start when children are around three years old (Room 241 Team, 2012). In fact, early math skills may be the strongest predictor of later success in both reading and math (Duncan, Dowsett, Claessens, Magnuson, Huston, Klebanov, and Sexton (2007); Schoenfeld and Stipek (2011); Clements and Sarama (2014); Duncan and Magnuson (2011). Children who enter kindergarten with weak math skills are likely to remain behind their peers in the later grades (Watts, Duncan, Siegler, and Davis-Kean (2014); Duncan and Magnuson (2011); Siegler, Duncan, Davis-Kean, Duckworth, Claessens, Engel, Susperreguy, and Chen (2012). The term "early math" refers to a broad range of basic concepts such as counting (1, 2, 3); quantity (more, fewer); shapes (circles, squares, triangles); spatial relations (over, under); measurement (tall, short; bigger, smaller); and patterns (red, blue, red, blue) (National Research Council (2009); Sarama and Clements (2009)). Because children are naturally curious, they explore these concepts as they interact with their environment (Sarama and Clements (2009); Ginsburg, Inoue, and Seo (1999)). Children must interact with adults, however, to learn the words that represent the basic math concepts that they experience Harris and Petersen (2017).

Figure 1 shows the progression of some of the typical math concepts that children learn from birth through age 5 (Harris and Petersen (2017)).



Figure 1 the progression of typical math concepts (Harris and Petersen, 2017)

Learning early math involves a similar progression as children initially learn basic math vocabulary, then how to recognize math in the world around them, and then over time learn how to express more complex math concepts involving measurement, geometry, and reasoning (Institute of Medicine (IOM) and National Research Council. (2009); Janzen (2008))

Aim of this research

As the discussion of the theories above, this lead to the aims of this research which is to investigate and to compare the Early Childhood teachers and pre-service teachers' belief, confidence, and in using technology in teaching Mathematics for Early Childhood student. The following part shows the methodology to answer this research aims.

Methodology

In this study, the survey research design was employed to investigate the Early Childhood teachers and pre-service teachers' belief, confidence, and using technology in teaching Mathematics for Early Childhood students and to compare the Early Childhood teachers and pre-service teachers' belief, confidence, and use in

technology in teaching Mathematics for Early Childhood students. The population was in-service and pre-service teachers in Early Childhood major in the area of Nakhon Sawan Province. This data collection used survey method from 67 of Early Childhood teachers from Nakhon Sawan Primary Educational Service Area Office which came from the sample technique and 70 of 4th year of Early Childhood pre-service teachers from Nakhon Sawan Rajabhat University, Nakhon Sawan Province, Thailand which came from purposive technique. The questionnaire of the Early Math Beliefs and Confidence Survey (EM-BCS) which consists of 28 questions that assess three aspects of teacher belief and confidence: (a) teachers' beliefs about preschoolers and math; (b) teachers' confidence in helping preschoolers learn math; and (c) teachers' confidence in their own math abilities (Chen and McCray, 2013) and survey of the need of using technology in classroom was used to the collection of data.

The used of Mean, Standard Deviation, and T-test were employed to explained the results.

Results

The purposes of this study were aimed: 1) to investigate and to compare the Early Childhood teachers and pre-service teachers' belief, confidence, and in using technology in teaching Mathematics for Early Childhood students. The results show as follow.

Table 1 the summary of survey and T-test

NO.	Items	Teachers			Pre-service Teachers			P-value
		N	Mean	S.D.	N	Mean	S.D.	
1	Teachers' belief about Early Childhood Students and Mathematics	67	28.18	4.04	70	32.44	4.34	.00*
2	Teachers confidence in helping Early Childhood Students learn Mathematics	67	41.28	5.75	70	44.67	5.60	.00*
3	Teachers' confidence in their personal Mathematics abilities	67	19.13	3.30	70	22.27	4.25	.00*

Table 1 (cont.)

NO.	Items	Teachers			Pre-service Teachers			P-value
		N	Mean	S.D.	N	Mean	S.D.	
4	Need of using ICT in helping Early Childhood Students learn Mathematics	67	20.94	2.57	70	23.36	3.77	.00*
5	Fear in in their personal Mathematics abilities	67	11.07	1.98	70	8.86	2.35	.00*

* < .001

From Table 1, it is shows that the teachers' belief about Early Childhood Students and Mathematics between in-service and pre-service teachers were different with .05 level of statistical significant where pre-service teacher have higher belief than in-service teachers. For the "Teachers confidence in helping Early Childhood Students learn Mathematics", shows that pre-service teacher have higher belief than in-service teachers with different with .05 level of statistical significant. In "Teachers' Confidence in Their Personal Mathematics Abilities", it is shows that pre-service teacher have higher belief than in-service teachers with different with .05 level of statistical significant. However, in "Fear in in their personal Mathematics abilities" it shows that in-service teacher have higher belief than pre-service teachers with different with .05 level of statistical significant.

Discussions and Conclusions

This research purposed to investigate and to compare the Early Childhood teachers and pre-service teachers' belief, confidence, and in using technology in teaching Mathematics for Early Childhood students. There were 67 of Early Childhood teachers from Nakhon Sawan Primary Educational Service Area Office which came from the sample technique and 70 of 4th year of Early Childhood pre-service teachers from Nakhon Sawan Rajabhat University participated in this research. The data collection used the Early Math Beliefs and Confidence Survey (EM-BCS) which consists of 28 questions that assess three aspects of teacher belief and confidence: (a) teachers' beliefs about preschoolers and math; (b) teachers' confidence in helping preschoolers learn math; and (c) teachers' confidence in their own math abilities (Chen and McCray, 2013) and survey of the need of using technology in the classroom. The results shows that the teachers' belief about Early Childhood Students and

Mathematics” and “Teachers confidence in helping Early Childhood Students learn Mathematics” and “Teachers’ Confidence in Their Personal Mathematics Abilities” between in-service and pre-service teachers were different with .05 level of statistical significant where pre-service teacher have higher belief than in-service teachers. However, in “Fear in in their personal Mathematics abilities” it shows that in-service teacher have higher belief than pre-service teachers with different with .05 level of statistical significant. This research will be benefit to develop the training program to both in- and pre- service teachers in developing confident, belief, and using of technology in teaching Mathematics to Early Childhood Students. The results related to the teacher beliefs and confidence in Early Mathematics teaching, preschool teachers are generally portrayed as disliking math, lacking confidence and the requisite knowledge to teach early math, being anxious about teaching it, and trying to avoid teaching it (Ginsburg, Lee, and Boyd, 2008; NAEYC & NCTM, 2010).

The results in confident about Mathematics, in-service teachers have lower score than pre-service teachers which may be because early childhood teachers are generally described as lacking confidence in teaching math (Copley, 2004), and according to Chen and McCray (2013), surprisingly few studies have examined teacher confidence in relation to teaching tasks such as planning learning activities or assessing children’s math understanding and teachers are also unsure about the best ways to gather such information. Even when the information is available, they lack confidence in their ability to translate the assessment results into curriculum plans. Lastly, we know that young children’s performance in mathematics depends on their teachers’ mathematical proficiency (Sarama and DiBiase, 2004). For the recommendation, NAEYC and NCTM (2002) advise pre-service education programs and in-service Professional Development (PD) to do more to encourage the development of teachers’ confidence and positive dispositions toward math. Survey results and their implications for PD are consistent with this recommendation which Professional Development (PD) will help teachers think, in specific terms, about how to use every day experiences to “mathematize” children’s learning and thinking (NRC, 2009) which use to develop course or training program to help EC in how to teach Math.

Recommendation

The conclusion and discussion above showed the results and how this results related to others research. Moreover, these results related to the action plan of our division of Early Childhood in the Faculty of Education, Nakhon Sawan Rajabhat University to develop the training program and academic service to serve and help

teachers in service areas both in-service teachers and pre-service teachers to develop the confident, belief, and using technology in the future.

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