THE EFFECTS OF TOTAL PHYSICAL RESPONSE SUPPLEMENTED WITH TEACHING PROPS ON THAI KINDERGARTEN 3 STUDENTS' CHINESE VOCABULARY KNOWLEDGE AND LEARNING BEHAVIORS

BY

TAO JIANG

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…….. ……

Asst. Prof. Kittitouch Soontornwipast, Ed.D. Asst. Prof. Anchalee Chayanuvat, Ed.D.

Examination Committee Chairperson Member

……..…

Asst. Prof. Noparat Tananuraksakul, Ph.D.

Member and Advisor

Approved by Graduate School

(Asst. Prof. Plt. Off. Vannee Sooksatra, D.Eng.)

Dean of Graduate School

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Tao Jiang

Researcher

6204905 : Tao Jiang

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Abstract

This research investigates the effects of Total Physical Response (TPR) supplemented with teaching props on Thai Kindergarten 3 students' Chinese vocabulary knowledge and learning behaviors at a public school in Nonthaburi Province, Thailand. TPR, students' physical responses to the teacher's verbal commands, and teaching props (i.e. wigs, toys, monster fish headgears, funny masks, and glasses) were used as treatments. One-group experimental design was adopted to test two hypotheses. This experiment was conducted face-to-face in a classroom setting that consisted of 5 male students and 9 female students for four weeks from January to February 2022 with video recordings for inter-rater reliability.

One-Way ANOVA and SPSS version 21 used to analyze the data obtained from Chinese vocabulary knowledge tests confirmed the first hypothesis that the treatment could positively affect the students' knowledge with a statistically significant difference at .041 ($P<0.05$). A frequency distribution counting the frequency of their active learning behavior based on the video recordings also confirmed the second hypothesis that most of them highly participated in the learning process as they had smiley faces, clapped their hands, screamed excitedly, laughed, jumped, held their hands up, and ran to the researcher. Their highly active participation aligned with the Chinese vocabulary they acquired from the tests. The research recommended that non-native and native Chinese teachers in a similar context extend the experiment to Kindergarten 1 or 2 students for a longer time or cover an entire term if there is no time constraint.

(Total 148 Pages)

Key words: Total Physical Response (TPR), Teaching props, Chinese vocabulary knowledge, Learning behaviors

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ABBREVIATIONS

Abbreviation	Meaning
IOC	Item Objective Congruence
SD	Standard Deviation
SIG	Significant Value

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Since entering the twenty-first century, the trend of globalization and the degree of dependence on cooperation between countries across the continents have been strengthened. To gain win-win cooperation and understand each other better, the extensive use of the language of globalization shows its special advantages and roles. As Wang (2019) said, language is a product of human social activities, a language, widely spread or globally popular, usually results from economic strength, political rights, and cultural support of a country. In addition, most multinational industries in finance, tourism, and news media, situated in non-native English-speaking countries use English as the medium of international communication because it is the language that has become an effective tool to provide the necessary information for their economic development (Northrup, 2013).

As a result, the United Kingdom (the UK), the United States (the US), Canada, Australia, and New Zealand are major English-speaking countries that gain global power in economy and politics. That attracts non-native English people from many countries to learn English more consciously and actively so that they can have a great share of power with those native speakers. Liu (2014) points out that the political and economic advantages of English-speaking countries have inspired many non-native English speakers to learn and use English as a second language (ESL) or a foreign language (EFL) effectively and meaningfully so that they can have a successful life.

The above argument about the global status of English is similar to Chinese. In recent years, Chinese is a language with the world's largest number of native speakers,

and Chinese learning has been included in the national education system of 69 countries (Liang, 2018) firstly because it is a language that is more accepted by other countries. That shows China's strength and international status (Hu, 2014). Secondly, it is the language that is inextricably linked with social, political, and economic factors (Sherris, 2020). Third, the language is recognized by national policymakers as learning and mastering the Chinese language is associated with benefits (Li, 2012). Therefore, it can be said that China's global power in economy, politics, and culture has promoted the learning of the Chinese language in other countries.

Since China has close economic and trade ties with the US, the UK, and Canada, it has become the largest import source of these countries (Tian et al., 2018) and the second largest trading partner of the US. The trade volume of goods between China and the US continued to grow and reached 582.1 billion US dollars in 2014 (Jin, 2020). The UK government had hoped that the total trade volume with China would reach 100 billion US dollars in 2015, and the bilateral trade between the two countries had reached more than 30 billion US dollars in 2014 (Buckley, Cross, Tan, Liu & Voss, 2008). Between 2014 and 2018, the total trade volume between China and Canada increased by 9.2 % and exceeded 100 billion Canadian dollars (Duan, Xu & Jiang, 2021). According to Yang (2018), when the economic integration among different countries is strengthened, language can further help the trade industry to obtain more direct benefits. A language can also spread in some countries related to the economic strength of the language source country as well as trade relations with other countries, especially from the fact that China has become an important trading partner of these three countries. Their economic and trade ties with China have already become inseparable.

Wang (2018) reported that the number of American college students who choose Chinese as their first or second major has grown by 190 %, and the number of students learning Chinese in colleges also increased by 115 %, reaching 61,055 in 2013. The UK itself offered undergraduate and taught postgraduate degrees that include Chinese language content by more than 30 UK universities in 2015, and the government hoped to have 400,000 students enrolled in Chinese (Guo, 2021). A study by Ostaszewski (2016) also showed that in the Canadian Views on Asia, 41 % of Canadians want provincial schools to provide more Chinese classes. It turns out that learning

Chinese is widely appreciated in these three countries, while at the same time China is becoming an increasingly important trade object for them. Therefore, it can further prove that economic and trade factors are the key to Chinese learning for people of these three countries.

Although economic influence is the decisive factor in the international spread of a language, political factor also is important in the process of a language being widely disseminated and valued (Agarwal, Garimella, Joglekar, Sastry and Tyson, 2020). The reason is that legal economic and cultural exchanges require political support and that a language can be widely accepted by a nation's political support (Ran, 2013). Take France and Spain examples. They are European countries that had established diplomatic relations with China earlier and have the highest number of Chinese learners in Europe. France became the first Western country to establish diplomatic relations with China in 1964 and opened the door to the spread of the Chinese language in France. Many French sinology experts also emerged during this period. Tran (2022) also reports that the China-France High-Level Dialogue on People-to-people Exchanges established in 2014 promoted the spread of the Chinese language and culture in France, and then further enhanced French people's understanding of China.

For Spain, Sino-Spanish relations began a rapid development after the implementation of China's opening-up policy, which further strengthened the Spanish people's desire to understand China. Since the Spanish prime minister came to China to participate in the "Belt and Road Forum" in 2017, the Spanish society can be said to have set off a big wave of Chinese language learning (Yi, 2017). It can be concluded that political factors can have a major impact on language diffusion and learning, especially after China's rise in international politics, which has triggered a boom in Chinese language learning.

Cultural power is also influential in Chinese learning in many countries. Xiao (2015) correctly argued that hard power is the basis for the widespread dissemination of national language, while soft power is the guarantee for accelerating the widespread dissemination of language. South Korea and Japan are examples because they are close

to China and have been historically and deeply influenced by the Sinosphere. In the twelfth century B.C, Chinese characters were introduced to Korea, and Chinese characters became the written language system of Korea at that time (Kwon, Chung & Jang, 2019).

Although Korea established the Pinyin writing system or "Hunminjeongeum", the officials and intellectuals have insisted on using the Chinese character system. The primary reason is that the Korean classical books were written in Chinese characters, so without knowledge of Chinese characters, it is difficult to understand and inherit the Korean historical tradition. There are over 1,800 Chinese characters in use today, and more than 2.5 million South Koreans study Chinese. Both Korean and Chinese characters are used in official documents (Pae, 2020).

In Japan, around the third century A.D, Chinese characters were spread. Since there were no characters in the native language in Japan at that time, Chinese characters were used to record documents. Wang (2019) also showed that from Sui Dynasty, Japan sent overseas students to China to study Chinese and Confucian education. Those students played an essential role in spreading the Chinese language and culture in ancient Japan. The 1,945 Chinese characters that exist in today's Japanese derive from the profound historical and cultural origin between China and Japan. More than 400,000 Japanese students learn Chinese per year (Bossard & Kaneko, 2019). It can be concluded that Chinese learning can form a trend in a nation where its history has deeply influenced its local people to learn the Chinese language and culture, and it remains important for them.

The evidence mentioned above can imply that the global upsurge of Chinese learning is formed under the background of the continuous expansion of China's economic, political and cultural influences. Thailand is included because it is a country with the world’s largest number of Confucius Institutes and Chinese learners. With the establishment and development of the CAFTA and the "One Belt One Road" program, employees who can master Chinese are demanded (Su, 2018), and Thailand as a member of ASEAN, is also becoming more essential for Thais to learn Chinese well. In addition, since the establishment of diplomatic relations between China and Thailand in 1975,

political relations between the two countries have maintained steady, and the trend of development with the scope of cultural exchanges between the two countries has continued to expand (Liu, 2017). A large number of Chinese living in Thailand and the Chinese language and culture have also further penetrated the daily lives of Thais, as seen in public and commercial signs and newspapers (Wei, 2012).

Based on the upsurge of Chinese learning in Thailand, the Thai government has established a relatively complete Chinese curriculum system from kindergarten to university. Under such circumstances that many scholars have put forward other views on this kind of Chinese curriculum system. Chen (2014) concluded that the Thai Chinese curriculum is more random and lacks a syllabus with universal guidance for all Thai schools. It has caused "zero" phenomenon of teaching Chinese in Thai universities that the majority of Thai students majoring in Chinese still have to start learning Chinese from greetings (Du & Gou 2011). Due to the lack of a unified syllabus, greeting ways in Chinese that should have been mastered by learners in their childhood stage have to be relearned at the university stage. This phenomenon is also a drawback to teaching efficiency. Liu, Liang, and Zeng (2020) posit that offering a few-hour class of Chinese per week to Thai students also limits a good grasp of Chinese phonics at a young age. When they miss this critical period of mastering the pronunciation of a new language, Zhang and Liu (2020) reported that Thai students in middle school or university are unlikely to overcome the negative impact of their mother tongue on their learning of Chinese pronunciation. This means they have not formed good Chinese pronunciation at an early age.

Therefore, Chinese learning in the early childhood stage occupies a very important position in the whole Chinese learning stage. Yusuf, Jusoh, and Yusuf (2019) made a clear explanation that young children can learn a new language effectively because their brains still use the mechanisms of first language acquisition. Young children have good imitation ability and they can remember language information received from the outside quickly and more deeply than adult learners (Zhou, 2018). Young children in particular, because of their age, are not as mentally stressed as adults when learning a new language, so they are more likely to use that new language to

express themselves and build a good foundation for future language learning (Xie, 2022). In language learning, phonetics, vocabulary and grammar are the three most important elements. Among them, vocabulary occupies an important position in language learning. Without grammar knowledge, some information can be conveyed, but without vocabulary knowledge, nothing can be conveyed (Yufrizal, Gasma & Sukirlan, 2017), which further proves the importance of knowing vocabulary in communication and language learning.

1.2 CONTEXT OF THE STUDY

As a native Chinese teacher at Talat Bang Khu Lat school, which is a public Thai school offering English and Chinese classes to students from kindergarten 1 to kindergarten 3 (K1-K3), all classes use the Thai language as a medium of instruction. The researcher is mainly responsible teaching Chinese to one K3 class based on the book "Growing Chinese" used by the school, and he needs to prepare for weekly different topic lesson plans. In this K3 class, Chinese words are taught mainly in the context of school and daily life because the school required it, and Gao (2018) found that learners would be willing to use the language skills they learned if they were closer to their lives. This K3 class consists of 14 Thai students (5 boys and 9 girls) whose age ranges between 4 and 5. Their language level of pre-production was confirmed in the first week of data collection because they were unable to understand the basic Chinese they learned before and hardly responded to the researcher's basic questions. Since there is neither a specific learning outcome of Chinese for the kindergarten students nor their cognitive level development, the researcher focuses on teaching Chinese vocabulary to this class of K3 students. Like many other nationalities' young children's learning characteristics, Thai kindergarten students were less concentrated on the teaching for a long time, distracted easily (Lin & Thaima, 2020), outspoken, and ran around in the class (Ewe & Min, 2021). It can be said that selecting teaching methods appropriate for their age and learning characteristics is needed. One is the Total Physical Response (TPR) developed by James Asher based on Krashen's (1982) Input Hypothesis Theory. From the perspective of the five stages of second language acquisition, the TPR method is also suitable for learners who are in the pre-production or the silent stage (Handayani

& Amalia, 2021). Because in the pre-production stage, the learners would gradually grow their vocabulary to 500 words through doing more physical actions (Moon, 2020).

Since TPR is a language teaching method in which the teacher verbally commands the students to respond to the commands with physical actions, when learning a second language, TPR can provide a relaxing atmosphere in understanding Chinese through body actions. In other words, TPR is a teaching method that can give comprehensible input and at the same time lower the students' anxiety in learning the language, hypothesized as Affective Filter (Krashen,1982). Scholars (e.g., Seidenberg & MacDonald, 2018; Cheetham, 2019; Derakhshan & Eslami, 2020) report that enough comprehensible input can help language learners to understand and master the vocabulary of a new language better. Once they understand what is being taught in the classroom, their affective filter is low or zero (Baaqeel, 2020) while their language learning performance is high due to their positive feelings of happiness and relaxation (Resnik & Dewaele, 2020; Nordin, Razak & Kassim, 2020; Al-Jarf, 2022;). When they simultaneously respond to the verbal commands with actions, their left and right brain hemispheres work together. TPR can well combine the left hemisphere, which is responsible for "language", with the right hemisphere, which is responsible for "non-language behaviors" (Su, 2021). Moreover, the relationship between memory and what they learned in class is strengthened by multiple physical actions, which makes them easy to remember and form long-term memory (Guo & Chen, 2019).

Previous studies also confirm the positive results of TPR. For example, Mariyam and Musfiroh (2019) indicate that TPR successfully improved the vocabulary knowledge of children aged 5-6 years through comprehensible input. Astri and Wahab (2019) found that TPR is good in developing the vocabulary of the students while they laugh and enjoy themselves and lower their affective filter in the class as well. Zhu (2018) stated that TPR makes learners acquire vocabulary naturally by making the whole brain work. Zhai (2020) reported that the learners continue physically responding to the teacher's verbal commands through TPR also made them memorize better what they learned. However, Zhang (2019) states that the introverted students could not engage with the TPR in the class well because they would feel pressure to face such an

active class, which also confirmed that the researcher had used TPR along with Chinese songs and simple activities to teach Chinese vocabulary to them in K2 of early 2021. He found that they had difficulty mastering Chinese words in the class because they were passive learners, paid attention to his teaching for a short time, and talked to their peers instead. To improve their Chinese vocabulary knowledge and learning behaviors when they moved up to kindergarten 3 (K3) in 2022, the researcher adopted TPR supplemented with teaching props of bright colors and vivid images to catch their visual attention (Güngör, 2018), making them laugh and keep them engaging in learning in the class (Abdi & Cavus, 2019). Especially He (2018), Xiao (2019), and Fan (2021) had positive findings when integrating TPR and teaching props into their Chinese classroom in Thai schools.

1.3 STATEMENT OF RESEARCH PROBLEM

Since the Thai kindergarten 3 students at Talat Bang Khu Lat School whom the researcher taught in early 2021 did not do well with TPR along with Chinese songs and simple activities, the researcher would use TPR supplemented with teaching props (i.e., wigs, toys, monster fish headgear, funny masks, and glasses) to teach them in 2022. It is worthwhile to investigate the effects of TPR supplemented with teaching props on Thai kindergarten children's Chinese vocabulary knowledge and learning behaviors.

1.4 RESEARCH OBJECTIVES

This study aims to investigate:

1) the effects of the use of TPR supplemented with teaching props on Thai K3 students' Chinese vocabulary knowledge;

2) the effects of the use of TPR supplemented with teaching props on Thai K3 students' learning behaviors.

1.5 RESEARCH HYPOTHESES

Two hypotheses were generated based on the related literature:

1) TPR and teaching props could affect the Thai K3 students' Chinese vocabulary knowledge positively;

2) TPR and teaching props could affect the Thai K3 students' learning behaviors positively.

1.6 RESEARCH FRAMEWORK

Since the students were in the stage of pre-production in Chinese, neither understanding the researcher's basic Chinese words they learned in K2 nor responding to his questions, a one-group experimental design was adopted to investigate the effects of TPR supplemented with teaching props (an independent variable) on Thai K3 students' Chinese vocabulary knowledge and learning behaviors (dependent variables).

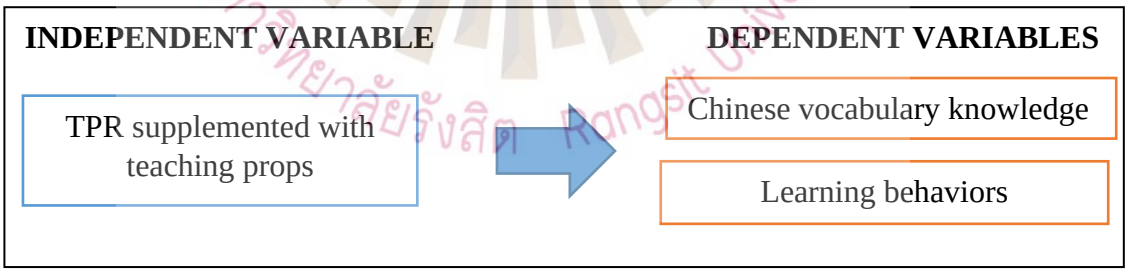

Figure 1.1 Research Framework

1.7 DEFINITION OF KEY TERMS

1.7.1 Chinese Vocabulary

It refers to basic words that are related to kindergarten students' daily life and school life.

1.7.2 Chinese Vocabulary Knowledge

In this study, Chinese vocabulary knowledge refers to the students' understanding of the meaning of each Chinese word and the correct pronunciation of each word. If they can physically respond to the researcher's command to do an action, it means they understand the meaning of the Chinese vocabulary, and vice versa. If they can pronounce each Chinese word comprehensibly or fluently based on the researcher's pictures, it means they know Chinese vocabulary, and vice versa.

1.7.3 Total Physical Response Or TPR

It refers to the language teaching methodology that Thai kindergarten students quickly respond with the right physical action based on the researcher's command in Chinese as well as cooperating with teaching props (i.e., wigs, toys, monster fish headgears, funny masks, and glasses) to help students understand Chinese vocabulary better and increase their interest in Chinese.

1.7.4 Thai Kindergarten 3 Students

It refers to Thai young children between the ages of 4 and 5 who are studying at a Thai kindergarten school where the researcher is teaching.

1.7.5 Learning Behaviors

Learning behaviors refer to the behaviors Thai K3 students exhibit when learning Chinese vocabulary through the four steps of TPR supplemented with instructional props. Their learning behaviors can be passive or active. When they are actively involved in learning, they show a smiling face, clap their hands, scream excitedly, laugh, jump, raise their hands, and even talk to the researcher; when they are passively involved in learning, they show that they do nothing, observe the environment, watch the researcher, stay seated, remain silent, tilt their head, and only perform some TPR steps without any facial expressions.

1.8 SIGNIFICANCE OF THE STUDY

1.8.1 The use of TPR supplemented with teaching props would improve the Chinese vocabulary knowledge of Thai K3 students;

1.8.2 The use of TPR supplemented with teaching props would positively affect the learning behaviors of Thai K3 students;

1.8.3 The findings of this research would encourage other Chinese teachers to use TPR supplemented teaching props to teach Chinese vocabulary in the future.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the literature review related to the TPR and teaching props to provide the theoretical background of the study.

2.1 SCENARIOS OF CHINESE TEACHING AND LEARNING IN KINDERGARTENS IN THAILAND

Since the Thai Ministry of Education promoted the five-year plan from 2006 to 2010 for Chinese teaching, a long-term development mechanism for Chinese language teaching has been established. The establishment of this mechanism conforms to the trend of Chinese teaching for Thai preschoolers. A study by Yuan and Han (2018) showed that teaching Chinese to Thai preschoolers as a starting point in the whole system of teaching Chinese to Thai is important. Numerous Thai public and private kindergartens have hired native Chinese-speaking teachers to teach in their schools because they know that preschool learners are better at mastering a second language.

In view of this situation, Worrachaiyut (2012) correctly argued that China and Thailand have signed a project agreement on "Thai Chinese Localization Teachers". A high number of qualified Thai teachers of Chinese have been trained so that they can teach Chinese to preschool children in Thailand. At the same time, Bi (2019) observed that the majority of preschool native Chinese teachers have not participated in any psychological and educational knowledge training for preschool students. The lack of understanding of psychology and learning characteristics therefore negatively affects teachers' academic performance in teaching Chinese to Thai kindergarten students. This problem with teaching qualifications comes from both Thai and native-Chinese teachers.

Since 1992, the Thai government has allowed all levels of private schools to offer foreign language classes, with Chinese becoming one of the popular foreign languages selected by some Thai private kindergartens. With teaching and learning a foreign language, especially Chinese, it is highly recommended by Luo (2015) that Thai kindergarten students must be taught with interesting input like the thematic vocabulary to help them learn or acquire Chinese vocabulary better. The main reason is that the use of thematic vocabulary allows young children to relax and enjoy learning. In addition, several researchers (e.g., Yi, 2014; Ma, 2018; Li, 2015; Yang, 2018) found in their studies that Thai kindergarten students learned Chinese from their native and non-native Chinese teachers through different class activities, for example, singing Chinese children's songs, repeating new words on pictures after their teachers, coloring works and drama performance. On the other hand, Li (2015) noted that the Chinese class in the majority of Thai kindergartens have neither a unified syllabus nor related learning materials, which have become an obvious obstacle in the process of students' Chinese learning. This situation is similar to the researcher's personal experience of teaching Chinese in a Thai kindergarten and seems to be disadvantageous for both the researcher and the students as they usually do not know what to teach exactly and one after another. Wang (2020) pointed out that the lack of a unified syllabus and good teaching materials inevitably leads to poor coherence in students' Chinese learning because they appear to learn something over-repetitive without systematic goals of learning achievement. Many Thai students of Chinese obtain unnecessarily fragmented knowledge although they start learning at a very young age.

Early childhood is a period of accumulation of large amounts of vocabulary, and vocabulary is an important indicator of early language ability development. Li (2015) also made clear that Chinese vocabulary teaching is the foundation and key to foreign children's Chinese learning, and it directly determines the success or failure of young children's Chinese learning. Therefore, in this study, the researcher will mainly discuss the problems encountered by Thai kindergarten students in the processes of Chinese vocabulary learning.

The processes start from the characteristics of children's brain nerve center development. Their brain's ability to understand and process words is still in a preliminary stage of development. Kindergarten students, in particular, have difficulty understanding the meaning of these words when they learn Chinese vocabulary, which is more abstract and difficult to represent intuitively. Like Luo (2015) reported that children's less information processing capabilities make it difficult for them to understand some words such as "day" and "night".

Secondly, the children's vocal organs, which include the larynx, vocal cords, oral cavity, and nasal cavity are in the process of gradual maturity. Then the degree of coordination between the various vocal parts is not particularly high. That can easily cause children to mispronounce vocabulary and acquire a low number and accuracy of Chinese vocabulary (Zhang & Xu, 2016). This consequence occurs particularly when Thai kindergarten students prefer to use a set of pronunciation organs adapted to the Thai pronunciation method, and it is easier for them to pronounce the Chinese vocabulary with errors.

Thirdly, according to Ebbinghaus's forgetting curve, human memory capacity is limited. In particular, young children, their memory is forgotten faster and Zhao and Zhou (2014) found that they learn and forget quickly in the process of learning a new language. Given this situation, Peng and Kievit (2020) analyzed that young children's lack of cognitive abilities and cognitive strategies is one of the reasons why they can easily forget what they have learned. From the aspect of the memory process, Luo (2015) rightly pointed out that the development of incidental memory in young children takes priority over intentional memory and the ability of rote memory is stronger than meaningful memory is the main reason why they often forget what they have learned. This also further explains why children have already mastered a certain Chinese vocabulary in the last class, but in the next day's class, they only remember the Thai meaning of this Chinese vocabulary.

It can be concluded that there have been two particular obstacles in teaching and learning Chinese in Thailand, especially for kindergarten students, although it has

become a popular foreign language in this country. One of the barriers is their age-related physiological development, which limits their focus on learning and participation in classroom activities. The other is a lack of related teaching and learning materials, a unified syllabus, and information and communication technology, which also limits their learning achievement.

2.2 THE IMPORTANCE OF TEACHING VOCABULARY TO KINDERGARTEN STUDENTS

Language has given human beings the ability to communicate with each other, forming a complex system of communication, and within each language, vocabulary stands as the basis for the language (Ismail, Zaid, Mohamed & Mohd Rouyan 2017). Vocabulary is not just a set of word units in a language (Repka, 2020). Liu and Zhang (2018) pointed out that vocabulary holds an essential role in learning a new language because it is a basic language skill. Thus, vocabulary is the foundation of all language learning except phonetics (Zhu, 2015).

According to the above explanation of the important position of vocabulary in language and language learning the researcher will combine the characteristics of kindergarten students learning a second language to further elaborate on the importance of vocabulary teaching for them. Firstly, from the perspective of cognitive characteristics. For young children between the ages of 3 and 5, the development of the most basic language system is complete, and their oral language development precedes written language. In addition, some data show that between the ages of 3 - 5 years, which is a jump period of greatly increasing in the amount of children's vocabulary is also an obvious feature of their oral language rapid growth (Durrant & Brenchley, 2019).

As Huang (2013) stated, Chinese language learning must be dominated by Chinese vocabulary learning. The reason is that young children’s vocabulary learning in the early childhood state has entered an explosion period (Liu, 2013). But at the same time, Schmidt, Benzing, Wallman-Jones, Mavilidi, Lubans, and Paas (2019) found that

due to cognitive development is insufficient they are prone to misunderstanding when they understand a new word in another language. Morett (2019) further explains that they are still focused on concrete imagery thinking when they trying to understand something. So, it must therefore be recognized that the intuitive way is the most efficient way to understand a language for young children when they have not formed abstract thinking abilities yet.

Secondly, from the perspective of psychological characteristics, young children aged 3-5 are curious about everything around them and have strong imitating abilities. Most importantly, their behaviors are easily dominated by emotional states, as Vandenbroucke, Spilt, Verschueren, Piccinin, and Baeyens (2018) found that children in early childhood cannot use cognitive strategies and effective ways to adjust their emotionally influenced behaviors. So, helping them to establish a relaxed and happy emotional state is of great benefit to promoting their Chinese learning behavior. Chinese Enlightenment education as the main form of teaching Chinese as a second language for young children aims precisely to help them like learning Chinese, stimulate their interest in learning Chinese, and encourage them to gradually enjoy the process of learning Chinese. Especially Lu (2014) correctly argued that teaching Chinese vocabulary is not as complicated and boring as phonetics and grammar because it was once proposed that the meaning of vocabulary itself helps learners form concrete images in their brain and to memorizing, coding, storing, and using the language items (Hasnine, Mouri, Flanagan, Akcapinar, Uosaki & Ogata, 2018). Therefore, it can not only help children build happiness and self-confidence in learning Chinese but also form active Chinese learning behaviors guided by positive emotional states.

On the other hand, Loewen and Sato (2018) stated that the psychological characteristics of young children make their psychological burden of learning a second language less and their sense of rejection of foreign languages is weaker, so they are braver expressing themselves in this language. As mentioned earlier, their behavior is easily influenced by their own emotions to make full use of young children's curiosity about new languages and encourage them to always maintain a positive emotional state for language learning, Tian (2017) has drawn attention to the fact that teaching Chinese

vocabulary methods with diversified, fun, and conform to the psychological characteristics of young children are the basic ways to encourage them to persist in learning Chinese.

All mentioned above clearly indicate that kindergarten students can acquire a language, especially a vocabulary more easily. The reason is that their age and their cognitive and psychological natures strengthen their learning foundation and even develop their language learning in the future. From this phenomenon, teaching Chinese to kindergarten students should focus on teaching Chinese vocabulary. Therefore, in the teaching process, more attention should be paid to the choice of approaches to vocabulary teaching. In recent years, some teaching vocabulary methods were widely used by other researchers. Saidbakhramovna, Valijonvna and Sharofidinovna (2021) noted that mime, expressions, and gestures were useful for teachers who have taught vocabulary to young learners or beginners because it was corresponding to the learner's memorization process, in which they easily retrieve each word's meaning and the lesson also could be more dynamic.

From the view of cultivating student's communication skills by teaching vocabulary, Abduramanova (2020) reported that role-play can create different social contexts, and students were given the opportunity to practice those vocabularies communicatively when they were acting different roles through some short dialogues made by the teacher. Then they could know how to use those words in all kinds of social contexts. From the aspect of the young children's characteristics, Garton and Copland (2018) discovered that picturebooks as an essential material to support young learner's vocabulary development were welcomed by many language teachers due to it has text combined with pictures to help children familiar with new vocabulary and inspiring their imagination while the teacher has read it for them, and then especially the interaction between the pictures and the words were strengthened by picturebooks form.

Furthermore, Rahmawati and Setiawan (2019) stated that cartoons with both hearing and visual features can provide an effective language input to young children because those sentences consisting of words were contextualized by cartoons so they can understand those words meaning more correctly by watching cartoons. Aziza and Syafei

(2018) further proved that cartoons can catch children's attention with their appealing presentation and lively roles with relaxing music.

Except that picture books and cartoons mentioned above are common teaching strategies in line with the characteristics of young children. The game method in the foreign language lesson for young children is also popular because young children's nature is playing (Fitri, 2020). Andreani and Ying (2019) implemented game approaches to teach vocabulary to their primary school students in the research and they argue that students were more motivated to learn vocabulary because they had to take more concentration for tasks done in the games. At the same time, educational toys have been popular in early education centers for many years and these toys were also widely used by teachers to teach vocabulary to their young students especially they are inclined to learn from playing. Abdi and Cavus (2019) in their experiment research found that educational toy composed of different games could be enhancing the kindergarten students' understanding of vocabulary meanings and the students' opinions also show they were willing to learn vocabulary through playing with those toys all the time.

All the vocabulary teaching methods mentioned above by the other scholars indicated that the choice of each single vocabulary teaching method should be related to the age, features, and learning styles. Moreover, Sun and Wang (2013) pointed out that the choice of methods for teaching vocabulary also depends on which of the five stages of second language acquisition learners are in. Because different stages mean they have different language proficiency and they need to be taught by different methods (Chai, 2013). For example, learners who are in the silent or pre-production stage should be taught by a teacher with more body actions or hand gestures because they do not speak too much (Salmona Madriñan, 2014) since they are in the early production stage with speak some short phrases and they should be taught by a teacher with some simple role-play activities. Some music or videos should be used to teach them when they are in the speech emergence stage because they have better comprehensible even say some longer sentences (Lewis, Rivera & Roby, 2021). Providing panel discussion activity is a good way for the learners in the intermediate language proficiency stage as they can share, exchange different opinions through some complicated sentences (Deng, 2021)

and finally they can be taught by the teacher through provides some professional debate sessions since they are into the advanced language proficiency stage as their language proficiencies are mature (Wang, 2017). It can be concluded that the researcher should choose a method for teaching vocabulary that is suitable for his Thai K3 students who were 4 - 5 years old, whose language skills were still in the pre-production stage of second language acquisition, who were passive learners, and who paid attention to his teaching for only a short time and talked to their peers instead.

2.3 TPR: THE METHOD THAT WORKS FOR TEACHING CHINESE VOCABULARY TO NON-NATIVE CHINESE KINDERGARTEN STUDENTS

Due to the Thai kindergarten students' young age from 3 to 5, they are greatly curious about their surroundings and active in the class, and they are also emotional. Thus, looking for a teaching method that is suitable for their characteristics of learning a second language is an essential part to improve the teaching effectiveness in the Chinese class.

TPR is viewed to be fun and other features are corresponding to the law of physical and mental development of kindergarten students. The researcher will therefore analyze such characteristics in learning a second language first, and then explain the reasons why TPR is beneficial to teaching vocabulary to young children from the following aspects theoretical basis, features, teaching principles, and teaching steps.

2.3.1 The Theoretical Basis Of TPR

TPR (Total Physical Response) refers to a language teaching method based on the coordination of speech and action, which language teaching through physical activities (Gu, 2017). This pedagogy was originally proposed for English education for immigrant children in the United States. Researchers believe that learners can naturally learn a second language just like they have acquired their mother tongue. So, after James

Asher has done a lot of research on language acquisition mechanisms and other language teaching methods, he proposed the TPR, which emphasizes the use of body movements to teach second languages in the 1960s.

Yan (2020) claimed that TPR combines teaching content with abundant body movements to create a relaxed and pleasant learning atmosphere. From the aspect of the learning process, Wang (2015) concluded that in second language classes under the guidance of TPR, students' participation is higher, and their learning anxiety can be reduced. An (2014) also noted in terms of learning achievement that TPR allows students to learn a foreign language in a real-world environment that helps them understand, remember, and use the language in the class. The reason why the TPR has these advantages is that it has rich theoretical support. The linguistics, psychology, and physiology can fully demonstrate the feasibility and scientific of the TPR.

Firstly, from the perspective of second language acquisition: In the 1980s, American language educator Stephen Krashen proposed five theoretical hypotheses for second language acquisition. They consist of the acquisition-learning hypothesis, the monitor hypothesis, the natural order hypothesis, the input hypothesis, and the affective filter hypothesis. To better understand Krashen's second language acquisition theory that the two concepts of language learning and language acquisition need to be clarified first. Krashen (1981) in his research made clear that language acquisition refers to the unconscious acquisition of language naturally and language learning refers to consciously mastering a language in a classroom environment. Thus, this distinction between these two concepts also clearly shows the difference between the process of acquiring a mother tongue and learning a second language.

In the aspect of acquiring a mother tongue, Cheng (2012) noted that infants acquire their mother tongue in the context of their parents' natural language output gradually understand their parents' instructions first, and then begin to express their needs simply. Asher (2007) also analyses that the second language acquisition process is similar to the mother tongue acquisition of infants, which does not deliberately conduct language output, but master the language through natural understanding in the

language environment. TPR with its listening first and then speaking, does not emphasize the rapid and large amount of language input and pays attention to the learners' understanding of the language in a relaxed and natural way, and then the learners can better master a second language.

As mentioned above listening before speaking is one of the principles of TPR. Sabet and Mahsefat (2012) stated that listening comprehension in second language learning began to receive attention after Krashen emphasized "comprehensive input (i+1)". Because Krashen (1985) argued that the learner's understanding of language meaning or information by listening is quite necessary for acquiring a language. As Gu (2020) observed from the real teaching scene, most children will remain silent in the new language environment, but after receiving a large amount of language input through listening, they will gradually understand the meaning and end up speaking aloud. Rudner, Lyberg-Åhlander and Brännström, Nirme, Pichora-Fuller and Sahlén (2018) also pointed out that the level of the learner's listening comprehension plays a role when they trying to learn a new language.

From Krashen's concrete explanation of "comprehensive input" that the "i" means a current level of the learned language, the "1" refers to the increase in the difficulty appropriately based on the existing mastery. Mauranen (2018) further proves that language acquisition relies on that trying to understand what other people are saying. It means that when learners hear meaningful and relatively difficult language materials that fit them and try to understand them, then the acquisition is generated. That is why Krashen repeatedly emphasizes listening first and receiving "comprehensive input" in language learning.

This is consistent with the concept of TPR, which is listening before speaking is the basic teaching model that emphasizes the priority of understanding ability over spoken ability. At first, learners are not forced to open their mouths to speak and as they get enough "comprehension input" (the teachers make corresponding body movements based on their action instruction), and then they will gradually understand its meaning

and open their mouths to express themselves. When using TPR for teaching in the early stage of second language learning, if the teacher wants to give learners more "comprehension input" content and increase physical sensory training, creating a specific language environment and strengthening listening training are all essential content in this process.

At the same time, Al Zoubi (2018) states that the level of input materials should be appropriate. If it is too difficult or too easy, learners will fail to reach a new language level. Therefore, when preparing action instructions and lesson content, teachers need to take into account learners' pre-existing language skills and based on this, slightly increase the difficulty level of the language input to help them achieve the goal of speaking up and mastering this language through a large number of listening inputs and body movements.

In addition to the above-mentioned emphasis on "comprehensible input", Krashen (1982) discovered that being in a large amount of "comprehension input" environment does not mean that the learner can learn the target language well and the process of second language acquisition is also affected by many emotional factors. Many researchers (e.g., Hanifa, 2018; Habók & Magyar, 2018; Naserthe & Nijr Al-Otaibi, 2019) have also found from other perspectives that affective factors have an impact on language acquisition under the same conditions and in the same environment. For example, whether the learner is anxious, nervous, or has a strong psychological resistance situation during the language learning process, all of which affect learning performance.

This reflects the crux of Krashen's affective filter hypothesis, according to which comprehensible language input can only be received by learners through the affective filter. Krashen (1981) further correctly argues that learning motivation, attitude, and anxiety are the three main factors that influence the comprehension input through the affective filter. From the perspective of learning motivation, Zhu (2017) stated that learning motivation dominates learners' learning behavior and willingness to learn, and

ultimately affects learning effects. If the learners have strong learning motivation that their learning progress will be faster and learning behavior will be maintained for a long time. Conversely, learners would be hard to get to any learning progress.

From the perspective of the attitude, Webb and Doman (2020) reported that learner's attitude determines learning quality. On the other hand, Wen (2013) in the view of foreign language learning attitude classification, pointed out that if the learners are not interested in the language that they are learning and regard it as a burden, it will be difficult for the learners to develop a positive learning attitude. From here, it clearly shows that positive learning attitudes and learners' performance in language learning are closely related.

At the same time, Song (2020) also stated that language learning attitude is not fixed, which changes with the characteristics of teachers' teaching attitude. For example, if the teacher's teaching attitude only tends to impart language knowledge without paying attention to the learner's emotional state and then does not adjust the teaching method according to the learner's emotional state in time, that will also directly affect the learner's learning attitude. Therefore, learning attitude plays an important role in learners' language learning, but teachers' teaching approaches also directly affect learners' learning effect.

From the perspective of anxiety, Ge and Yin (2013) reported that anxiety refers to a nervous and uneasy emotional state formed by individuals worrying that they cannot achieve their goals. In terms of learning in foreign language classes, Botes, Dewaele, and Greiff (2020) made clear that foreign language class anxiety is negatively related to language achievement, which means that higher language anxiety related the lower learning achievement. From the view of young children learning a foreign language, Hu, Zhang and McGeown (2021) also stated that children can master another language better in an environment with low anxiety. All this shows that anxiety has a great impact on language learning. In the aspect of affective filtering, the emotional filter barrier becomes lower only when the learner's sense of anxiety is low and then thereby

absorbing more language input. Conversely, high anxiety will lead to absorbing low language input.

Combining the above statements and taking the teaching methodology of TPR that young children can pay more attention to language teaching takes place because TPR emphasizes the completion of learning activities through body movements that allow students to master a second language while feeling happy (Dedic & Bećirović, 2021). When a teacher leads students to understand language by doing body movements, Wei (2014) also discovered that students can better receive language input from the teacher through visual, auditory, and whole-body movements. Under the guidance of this kind of teaching method, a more relaxed learning environment can be created for students, which makes it easier to conduct teacher-student activities in this kind of class and create good teacher-student communication. These more dynamic learning activities would be helpful to strengthen children's learning motivation, help them establish a positive attitude toward Chinese learning and reduce their anxiety in Chinese class and allow children to keep language input more efficiently, and then thereby enhancing children's language output competency.

Secondly, from the perspective of psychology, there is a "Memory Trace Theory" in behaviorist psychology, in which Uchihara, Webb, and Yanagisawa (2019) reported that the greater the tracking frequency and intensity of the memory connection and the stronger the memory connection, the easier it is to recall what has been learned. That shows that it is easier for learners to understand and recall the knowledge than to memorize isolated and boring knowledge when a variety of connections are made between knowledge.

Shen (2016) stated that physical activity can deepen memory traces and improve learners' memory and active cooperation deepens the understanding of language meaning which is more in line with the law of memory trace. In the language class guided by TPR, the teacher teaches a second language through body movements and learners pronounce and understand its meanings while making actions, and then they will form their muscle memory in a certain amount of practice. Finally, those

muscle memories also would help learners to recall what is meaning of words or sentences and so on. For this phenomenon, Hounhanou (2020) also proved that when the memory of language is combined with physical actions that it is helpful to improve the possibility of memory being recalled. So TPR helps learners remember and understand the meaning of the second language on the premise of mobilizing the learners' body movements. Especially for the young children that take language knowledge combined with diverse actions would keep better the recurrence rate of the language knowledge.

Thirdly, from the perspective of physiology, American neuropsychologist Roger Sperry once put forward the famous theory on the division of left and right brain functions, which is the left brain is mainly responsible for logical thinking and the right brain is mainly responsible for imagining thinking. Jin (2017) stated that the right limb activity is controlled by the left brain and the left limb activity is controlled by the right brain. This also shows that to promote the all-around development of people that whole-brain training stimulation is essential. Cultivating the left and right brains to think together and exercising left and right limbs is an essential way to develop the whole brain (Zull, 2020).

TPR stimulates the right brain as the starting point of second language learning. In the teaching process, when the teacher gives an action instruction, this instruction would be accepted by young children's right brains. Young children will do corresponding body movements based on the understanding of the action instruction and this process also means that their right brain is beginning to be decoding the language (action instruction). Su (2018) made clear that the right brain with the characteristics of high efficiency and speed can produce more direct, imaginable ways to help learners understand. On the other hand, if they learn a second language only by the left brain and are forced to do lots of language output, which easier to increase the burden of learning for them. Especially in this learning way the whole brain of young children also does not get enough used, and then understanding and memory of language will also become poor.

In the TPR, a teacher with young children uses all kinds of hand gestures and physical actions to express different language meanings and feedback to each other. This greatly explores the potential of the young children's right brain. Wu (2019) reported that it could avoid the surplus explanation for the target language and decrease the excessive interference of the left brain. TPR stimulates the right brain that is responsible for nonverbal behavior with body movements first and then mobilizes the left brain to work through movements. In comprehensive whole-brain stimulation, it helps young children achieve the goal of better mastering a second language.

It can be said that TPR is suitable for the Thai K3 students because it is from three aspects of second language acquisition, psychology, and physiology to prove that TPR takes a natural way for the students to accept comprehensible language input with their affective filters were lower by their enjoyed feelings for accepting more comprehensible language input at the same time the connections between actions and language knowledge make them recall easily what they have learned and whole-brain stimulation by used actions was also help them directly understand this new language.

2.3.2 The Features Of TPR

The TPR requires that a real language environment must be created in teaching to train students to respond quickly to action instruction (Zhang, 2019). This shows that learners' language understanding and output should be based on the right feedback from physical movements. Combined with the theoretical basis of TPR mentioned, it can be concluded that it has characteristics as follows.

Firstly, observation before feedback. Huo (2018) found that TPR focuses young children's attention on directly understanding the meaning of the target language by observing the teacher's actions. In general, in language classes with TPR features, students need to listen to and observe the teacher's instructions in the target language and body actions to understand the meaning of the language, and in this process, they are not required to follow the teacher's utterances and actions immediately. Finally,

after they have understood for teacher's actions meaning and then they will feedback gradually for the target language learning.

Secondly, focus on understanding a second language through action feedback: A study by Smith, Jackson, Adamczyk, and Church (2021) showed that language learning is a dynamic "stimulus-response-reinforcement" process. Niu (2012) also discovered that the understanding of a language is shown by action responding to what is heard. In the real teaching process, the teacher usually gives them some action instructions by using the target language and asks them to do corresponding body movements based on these instructions.

In the process of young children accepting instructions and doing physical movements, they not only absorbed the target language but also enhanced their understanding of the meaning of different actions. Because through more practice, the combination of children's different physical performance with language will be strengthened, which will help them to automatically understand the corresponding language expressions directly through actions and enhance their understanding.

Thirdly, emphasize language meaning rather than language structure: Humanistic pedagogy believes that a good language learning environment is a key factor to reduce learner anxiety and promote learning success. The language teaching process centered on the TPR method, which is more essential for language learners to understand meaning through actions than to insist on abstract language rules.

Therefore, Thai K3 students, in the beginning, were only required to observe the researcher's actions and listen to his commands, the researcher would check their understanding of Chinese words by body actions, and the researcher would be paid more attention to explaining each Chinese word's meaning by body actions to his students instead of explaining the rules of language using.

2.3.3 The Teaching Principles Of TPR

TPR is a second language teaching method based on the coordination of speech and motor activity; its teaching principles can be summarized as follows:

a. Taking listening as the leading part in the initial stage. The main goal of language learning is for learners to be able to express themselves in the new language. The learner's spoken competency would be developed based on their improved listening comprehension (Orakbayevna, Normuminovich & Muxiddinovna, 2021). When learners have internalized the listening material sufficiently and understand it well, they can generally express themselves naturally in a second language. TPR that insists on taking listening at first could help learners do better in language output.

b. Whole-body movements are key to developing learners' comprehension skills. In the process of language teaching, many words and phrases can become instructions for action through the teacher's design. Learners' understanding of a second language develops when they can make the correct body movements for the teacher's action instructions because the language learning process is a very consistent process of speaking and doing (MacIntyre, 2020).

c. Students should not be forced to speak out immediately. When students have just learned a new word, they need to take time to understand that word through the teacher's pronunciation and actions, and then gradually incorporate that new word into their cognitive structure. They will speak out this new word naturally in the end. He (2015) discovered that when students' understanding of the language taught reaches a certain level that they will speak out more willingly and actively. However, if the teacher pressures students to speak out, their brains will refuse to take in outside information.

It can be said that the researcher would focus on cultivating his Thai K3 students' understanding of Chinese vocabulary by physically responding to the verbal commands with body movements, and by giving them enough listening input by giving

them the commands to improve their speaking, and by giving them enough time to speak gradually when they understand the Chinese words they have learned.

2.3.4 The Teaching Steps Of TPR

TPR takes "listening-doing actions-speaking" as the main teaching organization form, which is also the most obvious character of TPR (Xie, 2021). The students learning a second language in the class are guided by the TPR method that their learning steps are the same as the sequence of young children acquiring their mother tongue. As such, combined with the guidance of TPR, its teaching steps can be divided into four stages. (Ummah, 2016; Sun, 2016; Bahtiar,2017; He, 2010) as shown in Figure 2.1 below.

Table 2.1 The teaching steps of the TPR method in the four stages

Four Teaching Steps	**Demonstration (Step 1)**	**Imitation (Step 2)**	**Practice (Step 3)**	**Application (Step 4)**
The researcher as a teacher	Pronouncing words and doing corresponding actions	Pronouncing words and doing corresponding actions	Issuing the commands	Asking a student to give the commands
The Thai K3 students	Listening and observing the teacher's actions	Listening and imitating the teacher's actions	Doing the corresponding actions	Teacher with the rest of the students doing the corresponding actions

In conclusion, this present study uses TPR to help the researcher's kindergarten students to learn Chinese vocabulary effectively. The researcher would start the following teaching processes:

1) do actions while issuing commands in Chinese (vocabulary planned to teach

the students) and the students are required to pay attention to listen to and observe the researcher;

2) ask his students to imitate his actions and keep listening to the different commands, but the students are not required to speak out those commands;

3) give different commands in Chinese then ask the students to do corresponding actions; and

4) randomly choose a student to stand up in front of the class to give different commands in Chinese while the researcher and the rest of the students respond to the commands. If students are not able to imitate the correct body movements at this time, the researcher demonstrates how to perform the correct actions to help them understand.

In addition, the above four steps of TPR teaching techniques were used as parts of the lesson plans to stimulate the Thai K3 students to be actively learning. The occurrence of their active learning behaviors in each step of TPR would be counted. Meanwhile, the researcher would teach mostly Chinese and a little Thai during the four weeks. A series of different teaching props would be supplemented and used in the four steps of TPR to positively affect the Thai K3 students' Chinese vocabulary knowledge and learning behaviors.

2.4 THE ADVANTAGES OF TPR AND LEARNING BEHAVIORS

Some scholars (e.g., Mohammadian & Dolatabadi, 2016; Nigora, 2018; Gulsanam & Farangiz,2021) concluded the advantages of the TPR, which is along with the students' learning behaviors as follows:

Advantages of the TPR method include:

1) It is full of fun (Sariyati, 2013). For the kindergarten students, their emotions are

easily aroused by doing continuously different actions in the classroom. In the researcher's Chinese class for his kindergarten students, the researcher will introduce each new Chinese word's meaning through funny and exaggerated actions for catching his students' attention and forming a relaxed atmosphere for them. That also shows that the researcher insisted on one of the points of TPR, which is learning the language through actions and creating an entertaining atmosphere for the young learners.

2) It is memorable and recalled easily (Hidayati, 2020). The kindergarten children could more easily recall which Chinese words they had learned when the teacher used the TPR method. In the kindergarten Chinese class, the researcher will issue each command and use toys to do actions for his students, and then give them visual stimulation because the colorful toys are easily impressive to the children. It is a way to help students memorize each Chinese lexical meaning in the long term by remembering the actions of the puppets in class. Then the researcher gives the commands to the students and asks them to repeat each command and perform the corresponding actions together with the researcher, thus helping the students to form muscle memory for each Chinese lexical. Therefore, the students will memorize and recall the Chinese vocabulary more efficiently under the visual stimulation with muscle memory.

3) It is an efficient method for the kinesthetic learners who are active in the class. Khudoyberdiev (2020) stated that young children are active, have curiosity, and are interested in everything around them. This means that the young children cannot stay in their seats and listen to their teacher for long. In the Chinese class for the kindergarten students, the researcher has organized different types of games for his students to practice that Chinese vocabulary, hereby hoping his students would understand the Chinese vocabulary through playing different physical games and then further conform to the features of the kindergarten students as the kinesthetic learners.

4) It is a method that reduces nervousness and anxiety in language learners. Young children, especially in early childhood, are always nervous and anxious when they suddenly leave their parents or are in an unfamiliar environment (McCormick et al., 2018). Kindergarteners have to learn a foreign language in the classroom and face

nervousness and loneliness in kindergarten. But TPR made students use their whole-body actions to learn a new language in the classroom, which made them really enjoy freedom and no rules restricted them to reduce their anxiety and nervousness (Oflaz, 2019). At the same time, learning behaviors normally take place in a classroom and teaching methods can influence learners positively or negatively. If learners are very young, especially in kindergartens, their typical characteristics tend to pay attention less to the teacher and more to their classmates. Therefore, teachers need to find different teaching methods that can stimulate their young students' interests.

As mentioned above, TPR with four benefits would encourage Thai K3 students to be active learners because TPR brings fun to kindergarten students by requiring them to physically respond to verbal commands. This fun makes them enjoy learning and relax in class (Jamaludin & Osman, 2014), which also promotes their active learning behavior during this process. Especially, their emotions are stimulated by such a fun learning environment where they make happy faces, clap, and even laugh in class (Nong, 2021). On the other hand, with memorization and recall, TPR helps students feel that they can successfully apply what they have learned in class. Once they successfully respond to the teacher's questions, their active learning takes place in class (Mustadi, 2015). This sense of achievement motivates them to become more active and participate in learning, while their active learning is shown by raising their hands to the teacher and calling the teacher in class (Ke, 2021).

Furthermore, TPR is suitable for kinesthetic learners because TPR can enable free teaching, especially if they are active and constantly moving. If they have as much freedom as possible and can move around the class as they want, they can be more active in approaching and accepting what they are taught (Wang & Xiao, 2016), even though they may shout or jump in class to show that they enjoy the free learning environment (Xie & Yang, 2016). Finally, TPR can lower nervousness and pressure when they are exposed to a new environment or language by performing multiple body actions. As Long (2014) states, students are more willing to engage in classroom learning when they are relaxed and stress-free, and this relaxation leads them to walk in class and even run to their teacher during the teaching process (Wang & Liu, 2018).

It can be concluded that TPR, with its own four advantages, can influence Thai K3 students actively learn Chinese vocabulary in class and even stimulate their learning to be active.

2.5 THE DISADVANTAGES OF TPR AND USE OF TEACHING PROPS

Some scholars (e.g., Shan-shan, 2017; Arabiyyah, 2021; Ekawati, 2022) also concluded the disadvantages of the TPR as follows:

Disadvantages of the TPR method include:

1) Rakhmanova (2019) found that introvert language learners who are not used to imitating the teacher's actions might find it embarrassing. Generally, kindergarten students are active and willing to interact with their teacher in the class but there are still a few introverted students who feel shy and pressured when the teacher asks them to imitate his actions in the front of the class or a group.

2) Based on the results of questionnaires, Nguyen, Le Thi, and Le Quang (2021) stated that teachers' inaccurate body language or actions do easily confuse the students. When the teacher issues each command and does actions to the students then they will have a good understanding of the words' meaning and pronunciation. But at the same time, the teacher's simple actions do not accurately explain each verb's meaning.

3) It is easily overused in the whole lesson and the students get bored as well (Ha & Hue, 2020). If the teacher uses the TPR method in the classroom to teach students each word, students may become bored and lose their attention quickly.

4) It does not provide the language learners with many opportunities to express themselves through what they have learned in the class (Astutik, Megawati & Aulina, 2019). TPR method has emphasized listening and responding physically to the teacher's

commands. Sometimes, the students forget or ignore to express themselves by what they have learned in the class.

Therefore, TPR with such four disadvantages perhaps does not work very well for the Thai K3 students learning Chinese vocabulary in the class, and teaching props as supplementary can helps with it. Because the teaching props (i.e., wigs, toys, monster fish headgears, funny masks, and glasses) that the researcher used in his teaching would cover his students' faces, the introverted students would feel safe psychologically and lower their anxiety (Zhan, 2017). As their faces are covered and the introvert students' degree of nervousness in facing their peers or standing in front will be reduced (Hu, 2015), they will feel more comfortable doing body actions as TPR requirements (Lu, 2014). Meantime, the teaching props such as toys would be integrated with body actions to explain each Chinese word, and the words' meanings would be visualized and explained correctly (Wu, 2015). Because single body action does not work well all the time in explaining the word's meanings (Xu, 2018), only the teaching props with vivid images as supplementary can further show their accurate meanings (Sun & Zhou, 2021).

Moreover, these teaching props with bright, colorful, different shapes and vivid images can directly arouse their interests in learning (Xu, 2018), so that they would not get bored with TPR in the class. It can also give students a sense of freshness and excitement, especially if they can touch and use them (Chen, 2021), which increases their attention to the teacher. Finally, Li (2021) pointed out that teaching props are good to inspire the passion of the students in learning a new language. Once their enthusiasm is stimulated by teaching props (Wang & Sun, 2020), then they would be more active to use what language knowledge they learned to express themselves in the class, which overcome the learners do not have many opportunities to express themselves in the TPR class.

It can be said that although TPR with four disadvantages may negatively affect Thai K3 students learning Chinese vocabulary in class and teaching props as supplementary to TPR can decrease those negative affects taken by TPR.

2.6 THEORIES RELATED TO TPR AND TEACHING PROPS

2.6.1 Brain-Based Learning

The brain-based learning has been welcomed by teachers and students. It has been posited that learning only occurs when the teaching methods are corresponding with the natural working rules of the neurons of the brain. Especially Caine, G. and Cain, R. N. (1991) developed that the three elements of instructional design are based on brain-based learning and they also pointed out that the choice of teaching methods should be based on the natural learning laws and information processing laws of the brain. So, the researcher would further discuss the TPR supplemented with teaching props from three aspects of brain-based learning.

Firstly, the lessons should create a stronger connection between the knowledge and the students so that they can truly experience what they are learning and immerse themselves in the well-planned lessons (Caine, G. & Cain, R. N., 1991). It means that if the knowledge is put in a real experience scenario and making the learners directly experience it, their brains will effectively gain the knowledge through the teaching immersion. Xiao (2021) pointed out that the learners use their different senses to interact with the knowledge in the teaching immersion provided by the teacher, which is the best way for the brain to get the knowledge. Feng (2021) also expressed that the knowledge will be successfully accepted and processed by the brain through the process of experiencing and interacting by the learners themselves with the knowledge.

Secondly, teaching should relax students' brains to reduce their psychological pressure and make them feel that their thinking, emotions, and physiology are not affected (Caine, G. & Cain, R. N., 1991). Above all, the emotional state of the brain determines how broadly and deeply it can absorb the knowledge from the classroom or outside (Zhang & Wei, 2020). In other words, if the brain receives positive emotional feedback from teaching, more knowledge will be accepted; if the brain constantly receives negative emotional feedback, knowledge will be accepted as little as possible (Li & Han, 2021). In addition, colorful, bright, and funny pictures are not only good for

attracting visual attention, but also for increasing the brain's feeling of pleasure and further relaxing it (Wang, 2020).

Thirdly, teaching should make the students' brains to be active in processing information, which is an essential way to consolidate and internalize the information they accepted (Caine, G. & Cain, R. N., 1991). It means that once the brain is willing to actively process what information is accepted, the learners will be more active to process what knowledge they learned in the class. Teaching methods that are fun and interesting can be regarded as a key stimulating the active work of the brain and making students actively engage in learning and they interact more actively with the teacher in the class (Cheng, Ma, Cheng, Shi & Zheng, 2021). Moreover, the teaching props with different shapes, styles, and images can directly inspire the students' curiosity and the brain's desire for exploration then makes them involved in the learning activities actively (Ye & Wang, 2021). Therefore, providing enough opportunities for students to experience what they learned, helping their brains to be relaxed and enjoyed, and stimulating them to be active is critical.

TPR, supplemented with teaching props, can help students experience and understand what they are learning through a variety of physical responses to verbal commands. Full-body movements in the learning environment with no rule restrictions and teaching props with colorful, fun, and exaggerated images relax their brains and make them enjoy continuing to respond physically to the various verbal commands and make their brains active so they don't miss any commands. Teaching props add excitement so they are also actively engaged in learning. So TPR supplemented with teaching props is consistent with brain-based learning.

2.6.2 The Multi-Store Model of Memory

Good memory has a positive relationship with the development of the learner's learning performance (Magulod Jr, 2019). According to this, the teachers should choose teaching methods that are appropriate for the learners to help them for storing and memorizing the information that were accepted by the teacher. To further analyze how

the teaching methods supplemented with teaching props help learners have a good memory of the knowledge, the researcher will discuss the multi-store model of memory proposed by Atkinson and Shriffin in 1968 based on the structure of the memory system and the forming of memory.

This memory model believes that there are three systems, in which sensory memory, short-term memory and, long-term memory in the memory system (Atkinson & Shriffin, 1971). It also reflects the process of how information eventually enters and is stored in long-term memory after the other two systems (sensory memory and short-term memory) have processed it. Generally, information is first taken in and then enters sensory memory, with only a few pieces of "attention-grabbing" information entering short-term memory, and then the information is taken in and stored in long-term memory through repeated repetition. As Norris (2017) correctly argues, long-term memory has an essential position, but knowledge will not enter the long-term memory as much as possible unless the knowledge receives sufficient "attention" and is "rehearsed" in the two systems of sensory memory and short-term memory.

Wan et al. (2020) have interpreted sensory memory as awareness of the external and internal environment and of movement. This means that all types of information are recognized by the sensory nervous system as they attempt to enter sensory memory, and some information that does not receive "attention" disappears at this stage. So that is why guaranteeing enough “attention” is the essential factor of the information reserved in the sensory memory and enters the short-term memory. In the terms of language teaching, Celik Korkmaz and Karatepe (2018) also observed that auditory information should be taken as an important position in language teaching since it can last a relatively long time in the sensory memory. Furthermore, Ito, Bai, and Ostry (2020) discovered that language knowledge should be taught to learners by using teaching methods with multiple shapes, as it can attract more “attention” in sensory memory, and that teaching props should be an important addition to teaching methods, as their different colors and shapes can attract more attention in people's memory system (Chen, 2022).

In general, short-term memory has been taken as a system with the two functions of processing and storing. Tawefeeg (2017) analyzed that the language information would be processed by the auditory coding and visual coding first and stored in the short-term memory, then enter the long-term memory. It can be indicated that language knowledge should be taught to students through teaching methods that emphasize auditory and visual forms, and teaching props should have fun, exaggerated images with sufficient visual appeal to complement the teaching methods (Liu, 2018). Because Jackson, Leitão, Claessen, and Boyes (2020) further concluded that the information was stored better when it came to short-term memory by auditory and visual. Moreover, regular rehearsal is the most useful technique to store the information for a long time until it enters the long-term memory.

Long-term memory is the last stage in the multi-store model memory, and in terms of learning it refers to the knowledge that learners have understood and mastered in their minds (Upahi & Ramnarain, 2020). It is permanent, but it depends on how learners are helped to retrieve what they have learned from long-term memory. Schwering and MacDonald (2020) discovered that recalling some information from the long-term memory needs to rely on the appropriate clue. It means that the teachers should build some clues between the knowledge and the learners' long-term memory, in which the learners in the different scenes can recall what they have learned immediately by some specific clues.

It can be said that brain-based learning and the multi-store model of memory are related theories to TPR supplemented with teaching props because it is corresponding to the people's brain's natural working way and enhancing memorize effectiveness of language knowledge of the three memory stages. Therefore, the researcher will use TPR supplemented with teaching props in his classes for his students to learn it in a relaxed atmosphere and makes the Chinese vocabulary knowledge transfer to be the learners' real knowledge in the long-term memory.

2.7 RELATED STUDIES

TPR started decades ago in America, but it remains applicable to teaching a foreign or second language in many social contexts today including Thailand. For example, Li (2013) conducted a case study on “Research on the Application of TPR Method in Teaching Chinese Basic Vocabulary to Young Learners” in America and found that TPR is an effective method for American young children to learn Chinese vocabulary, but under the premise of different teaching objects, teaching contents and teaching purposes, which should be combined with other teaching methods to further improve students' learning performance in vocabulary learning. Huo (2018) studied “The Application of Total Physical Response in Teaching Chinese to American Children – Takes an Example from Heritage Elementary School in Georgia” and found that TPR is good for American children to learn Chinese in class, which they could pay more attention to the teacher’s teaching, developed a good long-term memory and their interest were strengthened through multiple body actions.

In China, Yang (2016) analyzed in his study "A Study of the TPR Method in the Teaching of English to Primary School Students" that TPR can help Chinese students learn different English vocabulary through a variety of sensory inputs and create a learning environment that does not give them too much explicit pressure. Zhang (2018) conducted a study on “An Investigation of the Total Physical Response in Teaching English Vocabulary in Elementary School” and found that based on the characteristics of children's psychological development and the law of language learning that puts forward TPR is good for Chinese children to learn English vocabulary.

In Indonesia, Shang and Yang (2014) studied “The Application of Total Physical Response (TPR) in Indonesian Children's Chinese Textbooks” and analyzed that compared with the traditional language teaching method that TPR can help students maintain a higher recall rate and achieve the effect of rapid understanding and improving memory through whole body movement, at the same time, the researchers also pointed out that when using this method for teaching, teachers need to have good classroom

management skills to avoid classroom confusion. Mariyam and Musfiroh (2019) conducted a study on “Total physical response (TPR) method in improving English vocabulary acquisition of 5-6 years old children” and found that TPR with its features of directly practice the command with the physical movement was better for teaching English vocabulary to Indonesian children who has kinesthetic learner style.

In Japan, the research carried out on “TPR for French Language Instruction” by Dow (1995) reported that TPR can stimulate Japanese college students' enthusiasm in learning French at the beginning stage and help them understand what French language words are like. Furuhata (1999) investigated “Traditional, Natural and TPR Approaches to ESL: A Study of Japanese Students. Language Culture and Curriculum” and stated that TPR corresponded with the Japanese students as they were kinesthetic learners and it was also good for developing their English.

In Thailand, some scholars reported the use of TPR in teaching Chinese to Thai students. These studies included different educational stages, including five primary schools, one junior high school, two high schools, and one university. In terms of six primary schools, Nuansri (2015) investigated “The Communicative Approach for Learning Chinese with the Total Physical Response (TPR) Method for the Grade 4 Students of Way Khu-yang, Kampheng phet Primary Education Area Office 1” and stated that students’ Chinese scores were improved then the students were satisfied to the TPR and the teachers were required to schedule time properly. Liu (2015) conducted the study "The Application of TPR in Chinese Classes of Thai Primary Schools-Take Jaroensil School as an Example" and found that students were attracted to TPR instruction and their ability to speak simple Chinese sentences was negatively affected when teachers overused this method. Han (2015) pointed out in his report, “The Application of Total Physical Response Method in Teaching Chinese to Thai Primary Schools,” that students would build an intense relationship with teachers in TPR lessons, but the lessons were easily confusing. The study conducted by Zhao (2016), “The Practice and Research of Direct Method and Total Physical Response Method in Teaching Chinese to Primary School Students with zero Chinese level in Thailand”, showed that most students passed the Chinese exams, but the TPR method was not

suitable for teaching complicated Chinese words. Yang and Chidchanai (2020) studied "The Development of Listening and Speaking Skills in Chinese Vocabulary Using TPR Teaching Method of Grade 4 Thai Students" and pointed out that both listening and speaking skills of students were improved and they were very satisfied with TPR method"; more attention should be paid to their reading and writing skills in the future.

Regarding a junior high school, Jin (2017) conducted a study on "The Analysis of the Applicability of TPR Method in Chinese Classes in Thai Middle Schools-A Case Study of Duangmuang Chaturachinda School in Thailand" and found that students enjoyed the lessons but the actions designed with the TPR method not too much, especially students' memory capacity was limited. In terms of two high schools, Peng (2016) studied on "The Research of Total Physical Response Method in Teaching Chinese to Thai High Schools-Take Phitsanulok Nakhonthai School as an Example" and stated that the relationship between the students and teacher was improved and the TPR method was not suitable for the introverted students. Saengsimma, Wanpen and Jansrisukot (2021) investigated "The Effect of Using Total Physical Response Teaching Method Supplemented by Mind Mapping on Mathayomsuksa 4 Students Chinese Vocabulary Knowledge" and found that the students' Chinese scores were improved and they had positive opinions about the method, then the TPR method and the mind mapping could be combined with other teaching techniques in teaching Chinese vocabulary in the future. In terms of one university, Hou (2013) studied "The Research on the Application of Functional- Notional Method and Total Physical Response Method in the Training of Chinese Listening and Speaking Skills at Rampaphani Rajabhat University in Thailand" and found that the students' nervousness and pressure were decreased, but they easily lost their interest in the classes. From the above research results, the studies on TPR in Chinese teaching in Thailand mainly refer to primary schools, and only a few refer to junior high schools, high schools and universities. The results show that students' Chinese grades have improved with the TPR method and that an intensive relationship has been established between the students and the teacher.

Furthermore, three scholars reported the use of TPR supplemented with teaching props in teaching Chinese in Thailand. He (2018) studied "The Teaching

Exploration of “The Teaching Exploration of ‘Acting and Speaking Synchronously’ Totally Physical Response —Taking Phaiboonvittaya School for example” and found that Thai primary school students’ Chinese proficiencies were improved and their long-term memory was also strengthened since the TPR supplemented with teaching props such as basketballs and baskets was conducted in the Chinese class. Xiao (2019) investigated “The Use of Total Physical Response in Primary Chinese Language Classes in Thai Church Chinese Schools” and found that TPR supplemented with such as simple toys could improve the efficacy of the students’ Chinese learning and are good for their memory even forming a good relationship with their teacher. Fan (2021) studied “A study on the application of Total Physical Response in teaching integrated Chinese classes in Thai elementary schools” and found that TPR supplemented with teaching props like different dolls could stimulate their interest, attract their attention and develop their listening-speaking ability.

In conclusion, all the above research results show the great role of TPR in foreign or second language teaching in different social backgrounds. Many scholars have also shown that TPR is very suitable for the initial stage of language learning and for young learners who are learning a new language. Learners in the initial stage of language learning do not have enough competency to understand the new language, but TPR can help them directly understand a new language under the learning condition of without the use of their mother tongue. Moreover, a relaxing atmosphere was provided by TPR and it supplemented with teaching props also can attract young learners’ attention and stimulate their interest in the class. Since the past studies of TPR supplemented with teaching props in teaching Chinese in Thailand had not focused on Thai kindergartens and those studies’ findings had not also showed the changes in the students’ Chinese vocabulary knowledge (the students physically respond to the verbally commands and pronounce each Chinese word) and their learning behaviors. Therefore, the researcher would use TPR supplemented with teaching props in teaching Chinese vocabulary to Thai kindergarten 3 students based on relevant studies and record the real teaching situation to test the two hypotheses where TPR supplemented with teaching props could affect the Thai K3 students’ Chinese vocabulary knowledge and learning behaviors positively.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

Since the target group of students' Chinese level was at the stage of pre-production, a one-group experimental design was mainly used to meet the objectives of this study. Price, Jhangiani, Chiang, Leigton, and Cuttler (2017) referred to this method as an independent variable implemented in a single group then some dependent variables are measured once the independent variable is implemented. In this research, the independent variable is TPR supplemented with teaching props used as a treatment and the dependent variables are Thai K3 students' Chinese vocabulary knowledge and learning behaviors. Mitchell (2012) also discovered that this research method's external validity is more accurate once the original group of participants was treated under conditions close to reality. Therefore, during the four-week teaching process, one k3 class was a non-random group of participants in this research, in which the researcher taught Chinese vocabulary to his k3 class using the TPR supplemented with teaching props to find out how TPR supplemented with teaching props would positively affect their Chinese vocabulary knowledge and learning behavior.

3.2 POPULATION AND SAMPLE OF THE STUDY

3.2.1 Population

The population of the study consists of five sections of kindergarten 3 Thai students studying at Talat Bang Khu Lat School one of the government schools in Nonthaburi, Thailand. Each section had various numbers of students and their age ranges were between 4 - 5 with mixed gender.

3.2.2 Sample

Since the researcher was only assigned to teach one section of 14 students (five boys and nine girls), the purposive sampling was suitable for this study. They had zero Chinese language foundation, or were at the stage of pre-production, so the levels of their Chinese competence were not balanced.

3.3 RESEARCH INSTRUMENTS

There were four research instruments in this research. The first one was a four-week lesson plan, the second one was video records, the third one was Chinese vocabulary knowledge tests and the last one was a behavioral observation form.

3.3.1 Lesson Plans

The researcher developed a four-week lesson plan which implemented TPR and teaching props (i.e., wigs, toys, monster fish headgears, funny masks, and glasses) to teach Chinese vocabulary related to the students' daily and school lives and chosen from the book "Growing Chinese" the school has used (see Table 3.1). Each week included three sessions, 50 minutes each session. The researcher gave the treatment during Sessions 1 and 2; in Session 3, he would review the previous two lessons and assess the students' Chinese vocabulary knowledge informally. Through the processes of teaching, learning, reviewing, and assessing, he could speak Thai to a great extent, he mainly instructed in Chinese and a little bit of Thai, and a Thai homeroom teacher's assistance to maintain classroom order. See lesson plans in Appendix D.

Table 3.1 List of Topics and Vocabulary to be Taught for Four Weeks

Time	Topics	Chinese Vocabulary
First Week	Class Language	1st session: 起立 (stand up), 坐下 (sit down), 举手 (put your hand up) 2nd session: 放手 (put your hand down), 拉手 (hold teacher's hand),喝水(drink water) 3rd session: Reviews
Second Week	Daily Activities	1st session: 起床 (wake up), 睡觉(sleep), 刷牙 (brush teeth) 2nd session: 洗脸 (wash face), 洗手 (wash hands), 吃饭 (eat) 3rd session: Reviews
Third Week	Ball Games Instructions	1st session: 拍球 (bounce the ball), 接球 (catch the ball), 扔球 (throw the ball) 2nd session: 传球 (pass the ball), 捡球 (pick up the ball), 踢球(kick the ball) 3rd session: Reviews
Fourth Week	Physical Activities	1st session: 跑(run), 跳(jump), 走(walk) 2nd session: 爬(creep), 翻 (roll over), 蹲(squat) 3rd session: Reviews

3.3.2 Video Records

During the four-week lesson plan, a video recorder was used to record the processes of teaching, learning, and assessing from the beginning to the end (See Appendix E). The records were also employed for interrater reliability of the students' Chinese vocabulary knowledge and learning behaviors.

3.3.3 Chinese Vocabulary Knowledge Tests

Four different tests were made based on the four-week lesson plan to assess the students' Chinese vocabulary knowledge weekly (See Appendix F). Each test had two parts. The first part checked their understanding of six Chinese words' meanings while the second checked their pronunciations of those words. If they could physically respond

to the researcher's six commands, then they would be marked one point for each command or without any point if doing nothing. If they could say the words according to six pictures in Chinese comprehensibly or fluently, they would be marked one point for each picture, 0.5 points if they could say a certain part of the words in Chinese correctly, or zero if saying nothing. The scoring rubrics were shown in Table 3.2. To prevent any bias, the researcher invited a native Chinese colleague to assess the students' Chinese vocabulary knowledge by watching the video records.

Table 3.2 The Scoring Rubrics of the Chinese Vocabulary Knowledge Tests

Part 1	**Descriptions**
0 point	Students could not physically respond to any of the six commands.
1 point	Students could physically respond to one command accurately.
Part 2	**Descriptions**
0 point	Students say nothing according to the six pictures.
0.5 point	Students could only pronounce Chinese vocabulary partly.
1 point	Students could pronounce Chinese vocabulary comprehensibly or fluently.

3.3.4 Behavioral Observation Form

The researcher used this form, designed based on the four teaching steps of TPR, to observe and record each student's learning behaviors during each step through the video records. Another Chinese colleague also did the same in her own time (See Appendix G).

3.4 VALIDITY OF RESEARCH INSTRUMENTS

3.4.1 Validity

According to Mohajan (2017), validity means measuring the accuracy of research instruments in terms of whether they meet the expected quantification. If the research instruments are effective, in which the accuracy of findings in this research will

be ensured. So, the validity of the research instruments was validated by three experts (all of them from Thailand and one is competent in Chinese). The item objective congruence (IOC) was used to evaluate the items' correspondence with the objectives based on the scores +1, 0, and -1.

+1: the item meets the objective

0: unsure or unclear whether the item meets the objective

-1: the item cannot meet the objective

Any item with an IOC value of 0.67 to 1.00 is considered acceptable and valid, and then any item with an IOC value of 0.67 to -1.00 is considered invalid and needs to be changed.

Table 3.3 The Item Objective Congruence of the Objective

Research Instruments	IOC Average	Remarks
1. Lesson Plans	+1	Accepted
2. Video Records	+1	Accepted
3. Chinese Vocabulary Knowledge Tests	+1	Accepted
4. Behavioral Observation Form	+1	Accepted

The item objective congruence (IOC) of the research instruments was +1, which means all of them were acceptable and valid.

3.5 DATA COLLECTION AND RESEARCH ETHICS CONSIDERATION

The researcher took a great consideration into research ethics clearance prior to data collection, and this research was approved by the University Ethics Review

Board (see Appendix A). After that, two consent letters were sent to the students and their parents who then permitted the experiment, and the letter of placement was successfully accepted by the target school (see Appendix C). After that, this experimental research was conducted face-to-face in the classroom setting during January and February 2022, following the four-week lesson plan with video recording.

3.6 DATA ANALYSIS

1) To test the first hypothesis, data collected from the four Chinese vocabulary knowledge tests were at first scored and interpreted based on the criteria adapted from Roduta Roberts and Gotch (2019) in Table 3.4. Then one-way ANOVA was used to compare their mean scores to determine if there were statistically significant differences between those means, using SPSS version 21.

Table 3.4 Interpreting Criteria of Chinese Vocabulary Knowledge Tests Scores

Number of Questions Answered Correctly	**Descriptive Rating** (Degree of Acquiring Chinese vocabulary knowledge)
10 - 12	very well
7 - 9	well
4 - 6	moderately
1 - 3	slightly

2) To test the second hypothesis, a frequency distribution was used to count the occurrence of active and passive learning behaviors from the behavioral observation forms during the four-week lesson plan (see Appendix) and interpreted based on the criteria adapted from Xiao, Cao, and Peng (2020) in Table 3.5.

Table 3.5 Interpreting Criteria of Learning Behaviors of Four weeks

Frequency	**Descriptive Rating**	**Meaning**
12	Always	Highly active
6 - 11	Mostly	Moderately active
1 - 5	Seldom	Slightly active
0	Rarely	Passive

CHAPTER 4

RESEARCH RESULTS

This chapter reports the results of the quantitative data.

4.1 QUANTITATIVE DATA RESULTS

The quantitative data results included the data collected from the Chinese vocabulary knowledge tests and behavioral observation form.

4.1.1 Chinese Vocabulary Knowledge Tests

Data collected from 14 Thai K3 students' Chinese vocabulary knowledge tests were analyzed to test the first hypothesis. From Table 4.1, all the students acquired Chinese vocabulary knowledge at different levels in the first week. Out of 12 marks, Students 2 and 3 received the top score, Students 1, 5, 7, 11, and 13 earned the second highest score, Students 6, 8, 9, 10, 12, and 14 scored moderately, and only Student 4 scored slightly.

In Week 2, Students 2 and 3 remained at the top. Students 1, 5, 11, and 13 stayed in the second-highest scores, while Students 6, 8, 9, 10, and 14 scored higher as second best. Student 7 regressed to the moderate level, and Students 12 and 4 had the same score.

In Week 3, Students 2 and 3 remained at the top. Students 5, 6, 9, 10, 11, 13, and 14 kept getting the second top scores. Students 4 and 12 also scored the same as Weeks 1 and 2 while Students 1, 7, and 8 made progress.

In Week 4, Students 1, 2, and 3 remained the top scores. Students 5, 7, and 10 improved to the top scores. Students 6, 9, 11, 13, and 14 remained the second top scores. Student 8 regressed to the second top scores. Students 4 and 12 scored the same as Weeks 1, 2, and 3. In sum, two students received top scores every week, nine students progressed after Week 2, one student improved in Weeks 3 and 4, and two students never made any progress.

Table 4.1 Chinese Vocabulary Knowledge Tests Scores From Week 1 to Week 4

Student No.	1st week score	Acquiring the knowledge	2nd week score	Acquiring the knowledge	3rd week score	Acquiring the knowledge	4th week score	Acquiring the knowledge
1	8	Well	9	well	10	very well	11	very well
2	10	very well	10	very well	11	very well	10	very well
3	10	very well	11	very well	11	very well	10	very well
4	2	slightly	3	slightly	3	slightly	3	slightly
5	7	well	8	well	8	well	10	very well
6	4	moderately	7	well	9	well	8	well
7	7	well	6	moderately	7	well	10	very well
8	5	moderately	8	well	10	very well	9	well
9	6	moderately	7	well	9	well	9	well
10	6	moderately	8	well	8	well	10	very well
11	7	well	8	well	7	well	9	well
12	4	moderately	6	moderately	4	moderately	6	moderately
13	8	well	9	well	7	well	9	well
14	6	moderately	7	well	8	well	9	well

When comparing the students' four-week mean scores: 6.43, 7.64, 8 and 8.79 as shown in Table 4.2, the significant value is .041, (*p-value* > 0.05). The results show statistically significant differences indicating the positive effect of the treatment on their Chinese vocabulary knowledge.

Table 4.2 The Comparison of the Four-Week Tests' Mean Scores

	1st week scores	2nd week scores	3rd week scores	4th week scores
Mean	6.43	7.64	8	8.79
Std. Deviation	2.24343	1.94569	2.28709	2.04483
Sig. (2-tailed)	.041			
Significance Level (p): < 0.05 (significant)				

4.1.2 Behavioral Observation Form

Data collected from observing those 14 Thai K3 students' learning behaviors through the video records were analyzed to test the second hypothesis. The results of the count occurrence of active learning behaviors during four TPR steps in each session of four weeks are shown in the appendix (See Appendix H).

Table 4.3 shows that students 1, 2, 3, 5, 11, and 13 were very active in learning because they clapped their hands, smiled, jumped, screamed excitedly, laughed, held up their hands, ran to the researcher,, said "ครู" and "หนูๆครู" from Week 1 to Week 4; Students 6, 8, 9, 10, and 14 started to be highly active because they were running circles, smiled, waved arms, clapped hands, hands up, jumped, screamed excitedly, laughed, said "หนูยังไม่ได้ทำ" and "หนูทำได้" in Week 2 onward; Student 7 was highly active and ran to the researcher, screamed excitedly, clapped hands, hands up, smiled, laughed and said "ครูๆ" in week 1, 3, and 4 were slightly active with doing nothing, talked to friends, kept silence and watched the researcher in Week 2; Students 4 and 12 remained slightly active because they were physically responded to the some verbally commands, imitated some actions, watched surroundings, kept sat, doing nothing, kept quiet, bowed head and watched the researcher in every week. It can be said that all students were active learners with different degrees, and it appeared that the student's learning behaviors were in line with their acquired Chinese vocabulary knowledge.

Table 4.3 The Frequency of the Four Weeks' Learning Behaviors

Student No.	The frequency of active learning behaviors during the four teaching steps of TPR				Interpretation (active learning)			
	Week 1	2	3	4	Week 1	2	3	4
1	12	12	12	12	Highly			
2	12	12	12	12	Highly			
3	12	12	12	12	Highly			
4	3	1	1	1	Slightly			
5	12	12	12	12	Highly			
6	1	12	12	12	Slightly	Highly		
7	12	2	12	12	Highly	Slightly	Highly	
8	1	12	12	12	Slightly	Highly		
9	5	12	12	12	Slightly	Highly		
10	2	12	12	12	Slightly	Highly		
11	12	12	12	12	Highly			
12	3	1	1	1	Slightly			
13	12	12	12	12	Highly			
14	1	12	12	12	Slightly	Highly		

4.1.3 Results Conclusion

Six students acquired Chinese vocabulary knowledge well/very well in four weeks while they were very active learners from beginning to end; five students progressed in acquisition from week 2 and were also very active learners from week 2; one student acquired well and very well every week except week 2 and he was also a very active learner except week 2; two students acquired moderately and slightly in four weeks while they remained slightly active learners all the time. It can be concluded that all Thai K3 students had acquired Chinese vocabulary knowledge at different levels and were active learners to different degrees after the introduction of TPR supplemented by

teaching props and that their Chinese vocabulary knowledge was consistent with their learning behavior.

CHAPTER 5

DISCUSSION, CONCLUSION, LIMITITATIONS AND RECOMMENDATIONS

This chapter presents the discussion of the findings, the conclusion from the research results, and recommendations for future studies.

5.1 DISCUSSION

The findings reported in chapter four were used to test the two research hypotheses.

5.1.1 RH1: TPR and teaching props could affect the Thai K3 students' Chinese vocabulary knowledge positively.

The results confirmed the first hypothesis with statistically significant differences at .041 ($P<0.05$). The reason was that they could neither comprehend the Chinese vocabulary they learned in K2 nor respond to the researcher's commands in Chinese. However, after giving the treatment in Week 1 to all 14 Thai K3 students who were in the pre-production stage in Chinese, two of them acquired Chinese vocabulary knowledge very well, five acquired well, six moderately acquired, and one slightly acquired. It can be said that TPR has played a good role in developing language learners' vocabulary knowledge (Zainudin, 2018) and it supplemented with teaching props in this study allowed enough comprehensible input to help them acquire the words of a new language in different levels in such a short time (Zhu, 2020).

During Weeks 2 and 4, the number of students who acquired very well and well increased from 2 to 6, and 5 to 6, respectively. Once they constantly accepted

comprehensible input, they began to understand what was going on in the class, take part and learn successfully (Guan, 2012). Especially each word's meaning could be explained in an intuitive and visualized way by TPR supplemented with teaching props (Noviani & Situmorang, 2018). This way learners got enough comprehensible input in this way, and their interest in learning was also stimulated by colorful teaching props that they could accept more comprehensible input and got good language learning achievement (Alagözlü & Kiymazarslan, 2020). Furthermore, their left-right brains worked together through multiple body actions, and the muscle memories formed by their physical responses could help them with long-term memory. One student had regression with a moderate-scored level in Week 2 probably because this week's teaching topic was not attractive to him, pointed out by Che (2019) and Ding and Wang (2021) that uninteresting topics would lose some young children's attention and desire to learn and lower their learning performance. Two students' Chinese vocabulary knowledge remained the same throughout the experiment perhaps because they were introverted. As Zhang (2019) clearly explained, TPR does not work very well for this type of language learner and their introversion results in their inability to fully engage in learning activities as TPR requires them to actively participate in class (Mishra, Jeyasakthi & Velmurugan, 2021).

The above findings were supported by Kuo, Hsu, Fang & Chen' s (2018) study, which showed that TPR is a good teaching method to increase young children's second language vocabulary, and by Duan (2015), which showed that TPR is suitable for kindergarten children who are in the pre-production or silent stage to learn a target language vocabulary. Shang and Yang (2014) and Liu (2019) additionally proposed that TPR could attract young children's attention well while improving their vocabulary knowledge. Lu (2018) points out that TPR supplemented with teaching props can directly provide comprehensible input with attraction to the learners, which strengthened their efficacy of language acquisition in line with the statement of Sun (2019) from the results of the class experiment found that the students' vocabulary learning performances are better than before after TPR supplemented with puppets and balls was conducted in the class.

Since Thai K3 students' Chinese vocabulary knowledge was positively affected by TPR supplemented with teaching props, they could physically respond to the researcher's verbal commands and pronounce the researcher's pictures in Chinese comprehensibly and it also agrees with their learning behaviors in learning Chinese vocabulary. All had acquired Chinese vocabulary at varying levels during the first week, which corresponded with the fact that all had been actively studying in class to varying degrees during the first week. The progression of their acquired Chinese vocabulary knowledge from the second week and their active learning in the class also improved at the same time. Concannon-Gibney (2021) stated that TPR supplemented with teaching props would not only provide comprehensible input but also form a relaxed atmosphere for the learners to make them involved with learning easily while improving their language learning achievements.

5.1.2 RH2: TPR and teaching props could affect the Thai K3 students' learning behaviors positively.

The results confirmed the second hypothesis since all 14 students were active in learning after giving them the treatment during Week 1 and Week 4. Six of them stayed highly active throughout the treatment while five others began to engage with the activities highly after the first week. It was obvious to identify those six students as kinesthetic learners as they always moved around in the class (Putri, 2016), and physical responses to the researcher's commands made them feel free and joyous turning them into active learners (Shao, 2015; Liu, 2020) in the Chinese classroom. There was also always a relaxed and cheerful atmosphere in the class, which encouraged them to actively learn in class (Malik, 2021). These five students also became familiar with the teaching methods (Margaliot & Gorev, 2020), and they were more willing to engage learning in class because they felt that the learning environment was not constrained by rules (Zhong, 2010). They also actively learned language skills when they started to enjoy it and worked well with these teaching methods (Ren, 2018).

One student had a regression and was only slightly active in learning in Week 2 because he seemed to lose interest in the teaching topics, similar to Tang's (2021)

argument that sometimes the teaching topics or the content could not stimulate their imagination, curiosity, and desire, which led to passive learning behaviors. Especially if the students would not feel happy and enjoy the teaching topics, they would stop their active learning in the class (Dumančić, 2018). At the same time, two students remained slightly active in all four weeks because they were introverts who tended to keep themselves in their own space, prefer to be quiet, and learn passively (Ai, 2017; Zhao, Chen & Zhao, 2015). It could be said that different teaching props with colorful and exaggerated funny images which supplemented TPR could decrease the negative effects of this teaching method on these two introverts, for they were not passive in any week but stayed slightly active in learning every week.

The above findings were supported by He (2018), Xiao (2019), and Fan (2021) because their studies showed that TPR supplemented with teaching props could improve young Thai students' Chinese vocabulary and stimulate them to actively learn the language. Their props included balls, simple objects, and dolls with some games. It is in line with the statement of Englishtina (2019) who found that TPR supplemented with teaching props would strengthen the students' active in learning a new language. In this research, the teaching props were wigs, toys, monster fish headgears, funny masks, and glasses, aiming to create some joy and excitement during each lesson. Different tones of voice were also used to give the commands and then all kinds of toys were offered to the students to help them take part during the treatment.

The results also indicated a relationship between their learning behaviors and Chinese vocabulary knowledge in a manner that the students who were active in learning in the classroom would acquire the knowledge better than those passive learners. In line with Yue (2016), language learners' active learning behaviors and achievements are mutually affected and a good learning achievement always takes place when the students learn actively in the class (Wang & Huang, 2020).

5.2 CONCLUSION

This research investigates the effects of the use of TPR supplemented with teaching props (i.e., wigs, toys, monster fish headgears, funny masks and glasses) on Thai K3 students' Chinese vocabulary knowledge and learning behaviors. The researcher used a one-group experimental design to collect quantitative data to test the following two research hypotheses:

1) TPR and teaching props could affect the Thai K3 students' Chinese vocabulary knowledge positively;

2) TPR and teaching props could affect the Thai K3 students' learning behaviors positively.

The results after using TPR supplemented with teaching props as the treatments for four weeks revealed positive effects on Thai K3 students' Chinese vocabulary knowledge and learning behaviors which supported the two hypotheses. During the four weeks of teaching, TPR had explained the meaning of each Chinese word to the Thai K3 students through various body actions, and they had to physically respond to the researcher's verbal commands several times so that they could acquire Chinese vocabulary. At the same time, TPR was supplemented with a series of different teaching props, which the students were more active, attracted and enjoyed when they learned Chinese words by physically responding.

TPR supplemented with teaching props (i.e., wigs, toys, monster fish headgears, funny masks, and glasses) could provide comprehensible input to the Thai K3 students and lower their affective filter since TPR required them to physically respond to the verbal commands and teaching props as supplementary of TPR with brightly, funny and exaggerated images. In other words, these multiple body actions they had performed in TPR also helped their left and right brain hemispheres work together to enhance the effectiveness of Chinese vocabulary acquisition, which continued to provide them with enjoyment in class and more comprehensible input. In addition, the learning

environment was created without pressure and rule restrictions through TPR and teaching props, which stimulated their visual attention and made them actively participate in learning, engage more in learning, and enjoy learning. It can be concluded that TPR supplemented with teaching props positively affected Thai K3 students' Chinese vocabulary knowledge and learning behaviors.

5.3 LIMITITATIONS OF THE STUDY

5.3.1 The research was carried out with only one group of K3 Thai students at the target school, so the findings could not be representative of other kindergarten levels' Thai students.

5.3.2 Due to the time constrain, the data for the research were collected for four weeks instead of the whole term, so the findings could not be interpreted that TPR could work for long-term memory.

5.4 RECOMMENDATIONS

This research found that TPR supplemented with teaching props positively affected the Thai K3 students' Chinese vocabulary knowledge and learning behaviors. The following recommendations are based on the results of this research and are intended to help other Chinese teachers use TPR in conjunction with teaching props to help their students learn Chinese vocabulary.

5.4.1 Recommendation for Practice

1) The non-native and native Chinese teachers can consider using teaching props that are colorful, vivid and funny;

2) TPR supplemented with teaching props can also try out this technique with vocabulary in other parts of speech e.g. adjective and noun.

5.4.2 Recommendation for Future Studies

1) This research was limited by time, and it was conducted within four weeks of teaching. The researcher recommends that further studies should be conducted for a long time to acquire more reliable data and find out whether it helps learners' long-term memory or not;

2) The TPR supplemented with teaching props was only conducted in Thai K3 students in this study and it should be conducted in other kindergarten levels.

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APPENDICES

APPENDIX A

CERTIFICATE OF RESEARCH ETHICS APPROVAL

COA. No. RSUERB2021-029

RSU-ERB

Certificate of Approval
By
Ethics Review Board of Rangsit University

COA. No.	COA. No. RSUERB2021-029
Protocol Title	The Effects of Total Physical Response on Thai Kindergarten Students' Chinese Vocabulary Knowledge and Learning Behaviors
Principle Investigator	TAO JIANG
How to review	Full Board Review
Affiliation	Suryadhep Teachers College, Rangsit University
Approval includes	1. Project proposal 2. Information sheet 3. Informed consent form 4. Data collection form/Program or Activity plan
Date of Approval:	08 / 04 / 2021
Date of Expiration:	08 / 04 / 2023

The prior mentioned documents have been reviewed and approved by Ethics Review Board of Rangsit University based Declaration of Helsinki, The Belmont Report, CIOMS Guideline and International Conference on Harmonization in Good Clinical Practice or ICH-GCP

Signature.....
(Assistant Professor Dr. Panan Kanchanaphum)
Chairman, Ethics Review Board for Human Research

APPENDIX B

LETTERS OF INVITATION FOR THE IOC EXPERTS

Expert 1

Memorandum

STC.4800/0938 23 March 2021

Ref: Invitation for you to be our IOC (Item Objective Congruence) expert

Dear Assoc. Prof. Dr. Napak-on Sritrakarn

Suryadhep Teachers College, Rangsit University

Our student, Mr. Tao Jiang 6204905, who is studying in the second year of Bilingual Education, has now completed her Thesis Proposal Defense on 19 February 2021. The research title is "The Effects of Total Physical Response on Thai Kindergarten Students' Chinese Vocabulary Knowledge and Learning Behaviors". Currently, he is in the middle of the instrument design phase and has come up with the instrument for her study.

Thus, I would like to invite you to be our IOC (Item-Objective Congruence) expert in assessing the validity of the instruments. The package has been attached herewith.

I truly appreciate your kind support in this matter and hope that you will accept my invitation.

Sincerely yours,

(Assoc. Prof. Dr. Usaporn Swekwi)
Dean
Suryadhep Teachers College
Rangsit University

Expert 2

Memorandum

STC.4800/0937 23 March 2021

Ref: Invitation for you to be our IOC (Item Objective Congruence) expert

Dear Dr. Boonsri Cheevakumjorn

Suryadhep Teachers College, Rangsit University

Our student, Mr. Tao Jiang 6204905, who is studying in the second year of Bilingual Education, has now completed her Thesis Proposal Defense on 19 February 2021. The research title is "The Effects of Total Physical Response on Thai Kindergarten Students' Chinese Vocabulary Knowledge and Learning Behaviors". Currently, he is in the middle of the instrument design phase and has come up with the instrument for her study.

Thus, I would like to invite you to be our IOC (Item-Objective Congruence) expert in assessing the validity of the instruments. The package has been attached herewith.

I truly appreciate your kind support in this matter and hope that you will accept my invitation.

Sincerely yours,

(Assoc. Prof. Dr. Usaporn Swekwi)
Dean
Suryadhep Teachers College
Rangsit University

Expert 3

Memorandum

STC.4800/0936 23 March 2021

Ref: Invitation for you to be our IOC (Item Objective Congruence) expert

Dear Assoc. Prof. **Suchada Nimmannit**

Suryadhep Teachers College, Rangsit University

Our student, Mr. Tao Jiang 6204905, who is studying in the second year of Bilingual Education, has now completed her Thesis Proposal Defense on 19 February 2021. The research title is "The Effects of Total Physical Response on Thai Kindergarten Students' Chinese Vocabulary Knowledge and Learning Behaviors". Currently, he is in the middle of the instrument design phase and has come up with the instrument for her study.

Thus, I would like to invite you to be our IOC (Item-Objective Congruence) expert in assessing the validity of the instruments. The package has been attached herewith.

I truly appreciate your kind support in this matter and hope that you will accept my invitation.

Sincerely yours,

Usaporn Swekwi

(Assoc. Prof. Dr. Usaporn Swekwi)
Dean
Suryadhep Teachers College
Rangsit University

APPENDIX C

CONSENT LETTERS FOR THE SCHOOL, STUDENTS AND PARENTS

RSU มหาวิทยาลัยรังสิต
RANGSIT UNIVERSITY

มหาวิทยาลัยรังสิต เมืองเอก ถ.พหลโยธิน จ.ปทุมธานี 12000
Rangsit University Muang-Ake, Paholyothin Rd. Pathumthani 12000, Thailand
T. (66) 2997 2200-30 F. (66) 2791 5757 E. info@rsu.ac.th

ที่ วสท.4800/1711

13 ธันวาคม 2564

เรื่อง ขอความอนุเคราะห์เก็บข้อมูลวิจัย

เรียน ผู้อำนวยการโรงเรียนตลาดบางคูลัด

เนื่องด้วย Mr. Tao Jiang รหัส 6204905 นักศึกษาหลักสูตรศึกษาศาสตรมหาบัณฑิต สาขาวิชาการศึกษาระบบสองภาษา วิทยาลัยครูสุริยเทพ มหาวิทยาลัยรังสิต กำลังดำเนินการวิจัย เรื่อง "THE EFFECTS OF TOTAL PHYSICAL RESPONSE ON THAI KINDERGARTEN STUDENTS' CHINESE VOCABULARY KNOWLEDGE AND LEARNING BEHAVIORS" โดยการสอนด้วยเทคนิคการตอบสนองด้วยท่าทางในเด็กปฐมวัยสำหรับนักเรียนชั้นอนุบาล 3 ในวันที่ 20 ธันวาคม 2564 ถึงวันที่ 4 กุมภาพันธ์ 2565 โดยมี ผศ.ดร.นพรัตน์ ธนานุรักษาภูล เป็นอาจารย์ที่ปรึกษา

ขณะนี้นักศึกษาอยู่ในขั้นตอนเก็บรวบรวมข้อมูลการวิจัยเพื่อให้การดำเนินการเป็นไปได้ด้วยความเรียบร้อยและมีประสิทธิภาพ วิทยาลัยครูสุริยเทพ มหาวิทยาลัยรังสิต จึงใคร่ขอความอนุเคราะห์จากท่านอนุญาตให้ Mr. Tao Jiang ดำเนินการเก็บรวบรวมข้อมูลวิจัยด้วย

จึงเรียนมาเพื่อโปรดทราบและโปรดพิจารณาให้ความอนุเคราะห์อนุญาตให้นักศึกษาดำเนินการเก็บรวบรวมข้อมูลเพื่อการวิจัยดังกล่าวข้างต้น และวิทยาลัยครูสุริยเทพขอขอบพระคุณท่านมา ณ โอกาสนี้

ขอแสดงความนับถือ

(ดร.มลิวัลย์ ประดิษฐ์ธีระ)
คณบดีวิทยาลัยครูสุริยเทพ

หลักสูตรศึกษาศาสตรมหาบัณฑิต สาขาวิชาการศึกษาระบบสองภาษา
โทร. 02-997-2222 ต่อ 1275

โครงการวิจัยนี้ทำขึ้นเพื่อจะศึกษาว่าแนวการสอนของครูจะช่วยเพิ่มความรู้คำศัพท์ภาษาจีนให้กับเด็กนักเรียนอนุบาลในโรงเรียนตลาดบางคูลัดมีความรู้คำศัพท์ภาษาจีนไหม

ครูชวนนักเรียนเข้าร่วมโครงการนี้เพราะว่าครูสอนภาษาจีนให้กับนักเรียนระดับอนุบาลอายุระหว่าง 4-5 ปี ซึ่งครูอยากจะศึกษาว่านักเรียนมีความคิดเห็นอย่างไรกับการเรียนคำศัพท์ภาษาจีนกับครู

ถ้านักเรียนยินดีร่วมโครงการนี้ นักเรียนจะได้รับการปฏิบัติดังนี้

1. ทำแบบทดสอบความรู้คำศัพท์ภาษาจีนตามวิธีการสอนของครูยินดีตอนท้ายชั่วโมงการสอน

2. ตอบคำถามเพื่อสอบถามความคิดเห็นเกี่ยวกับวิธีการสอนคำศัพท์ของครู

งานวิจัยนี้มีความเสี่ยงน้อย ครูจะคอยดูแลนักเรียนอย่างดี ไม่ให้เหนื่อยเกินไป แต่ถ้านักเรียนรู้สึกไม่สบายใจ อึดอัด ไม่อยากเข้าร่วมในการวิจัยนี้ นักเรียนสามารถถอนตัวได้ตลอดเวลา และถ้านักเรียนหรือผู้ปกครองมีเรื่องสงสัยประการใดสามารถถามได้ ครูชื่อ เถาเจียง โทรศัพท์ 084-125-9871 อาจารย์ที่ปรึกษาวิทยานิพนธ์ ผู้ช่วยศาสตราจารย์ ดร.นพรัตน์ ธนานุรักษากุล โทรศัพท์ 082-3380703

ครูจะเก็บเรื่องส่วนตัวนักเรียนเป็นความลับ ไม่เปิดเผยให้ใครทราบ

นักเรียนได้อ่านและเข้าใจรายละเอียดของโครงการแล้ว

☺ ถ้านักเรียนเต็มใจเข้าร่วมในโครงการนี้ลงชื่อ.....

☹ ถ้านักเรียนไม่เต็มใจเข้าร่วมโครงการนี้ ลงชื่อ.....

RSU-ERB.005-3 หนังสือแสดงเจตนายินยอมฯ สำหรับผู้ปกครองของเด็กอายุต่ำกว่า 12 ปี

(สำหรับผู้ปกครอง) (Legal Guardian Informed Consent Form)

วันที่ _____ เดือน _____ พ.ศ._____

ข้าพเจ้า_____

ผู้ปกครองของเด็กชาย/เด็กหญิง _____

โดยข้าพเจ้าได้รับทราบรายละเอียดเกี่ยวกับที่มาและจุดมุ่งหมายในการทำวิจัยรายละเอียดขั้นตอนต่างๆ ที่เด็กในปกครองของข้าพเจ้าจะต้องปฏิบัติหรือได้รับการปฏิบัติ ประโยชน์ที่คาดว่าจะได้รับของการวิจัย ความเสี่ยงที่อาจจะเกิดขึ้นจากการเข้าร่วมการวิจัย รวมทั้งแนวทางป้องกันและแก้ไขหากเกิดอันตรายขึ้น โดยได้อ่านข้อความที่มีรายละเอียดอยู่ในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด อีกทั้งยังได้รับคำอธิบายและตอบข้อสงสัยจากหัวหน้าโครงการวิจัยเป็นที่เรียบร้อยแล้ว โดยไม่มีสิ่งใดปิดบังซ่อนเร้น

ข้าพเจ้าจึงสมัครใจให้เด็กในปกครองของข้าพเจ้าเข้าร่วมในโครงการวิจัยนี้ :

ข้าพเจ้าได้ทราบถึงสิทธิที่ข้าพเจ้าจะได้รับข้อมูลเพิ่มเติม ทั้งทางด้านประโยชน์และโทษจากการเข้าร่วมการวิจัย และสามารถถอนตัวเด็กในปกครองของข้าพเจ้าหรือตัดเข้าร่วมการวิจัยได้ทุกเมื่อ โดยจะไม่มีผลกระทบใดๆ ต่อการทำกิจกรรมด้านต่างๆที่เด็กของข้าพเจ้าจะเข้าร่วมในอนาคต และยินยอมให้ผู้วิจัยใช้ข้อมูลส่วน ตัวของเด็กในปกครองของข้าพเจ้าที่ได้รับจากการวิจัย แต่จะไม่เผยแพร่ต่อสาธารณะเป็นรายบุคคล โดยจะนำเสนอเป็นข้อมูลโดยรวมจากการวิจัยเท่านั้น

หากเด็กในปกครองของข้าพเจ้ามีอาการผิดปกติ รู้สึกไม่สบายกาย หรือมีผลกระทบต่อจิตใจของเด็กในปกครองของข้าพเจ้าเกิดขึ้นระหว่างการวิจัย ข้าพเจ้าจะแจ้งผู้วิจัยโดยเร็วที่สุด และหากข้าพเจ้ามีข้อข้องใจเกี่ยวกับขั้นตอนของการวิจัย หรือหากเกิดการบาดเจ็บ/เจ็บป่วย หรือหากเกิดเหตุการณ์ที่ไม่พึงประสงค์จากการวิจัยขึ้นกับเด็กในปกครองของข้าพเจ้า ข้าพเจ้าจะสามารถติดต่อกับ นาย Tao Jiang **ได้ที่หมายเลขโทรศัพท์** 084-1259871 **หรือ** อาจารย์ที่ปรึกษาวิทยานิพนธ์ ผู้ช่วยศาสตราจารย์ ดร.นพรัตน์ ธนานุรักษากุล **หมายเลขโทรศัพท์** 082-3380703 **ได้ตลอด 24 ชั่วโมง**

หากเด็กในปกครองของข้าพเจ้า ได้รับการปฏิบัติไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าจะสามารถติดต่อกับประธานคณะกรรมการฯ หรือเลขานุการฯ ได้ที่สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน อาคารอาทิตย์ อุไรรัตน์ (อาคาร 1) ชั้น 5 ห้อง 504 มหาวิทยาลัยรังสิต 52/347 หมู่บ้านเมืองเอก ถ.พหลโยธิน ต.หลักหก อ.เมือง จ.ปทุมธานี 12000 หมายเลขโทรศัพท์ 0-2791-5728 โทรสาร 0-2791-5689

ข้าพเจ้าเข้าใจข้อความในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และหนังสือแสดงเจตนายินยอมนี้โดยตลอดแล้ว จึงลงลายมือชื่อไว้

ลงชื่อ _____ ลงชื่อ _____

(_____) (_____)

ผู้ปกครอง ผู้ให้ข้อมูลและขอความยินยอม/หัวหน้าโครงการวิจัย

วันที่...../...../..... วันที่...../...../.....

ในกรณีผู้ปกครองของผู้เข้าร่วมการวิจัยไม่สามารถอ่านหนังสือได้ผู้ที่อ่านข้อความทั้งหมดแทนผู้ปกครองของผู้เข้าร่วมการวิจัยคือ ..... จึงได้ลงลายมือชื่อไว้เป็นพยาน

ลงชื่อ.....พยาน

วันที่...../...../.....

APPENDIX D

LESSON PLANS

Lesson Plan 1

Subject: Chinese

Topic: Classroom language

Student: K 3

Time: 150 minutes (50 minutes/1 session)

Session 1 (50 minutes)

Objectives: To enable the students to:

1) Understand the meaning of these words, 起立(Stand up), 坐下(Sit down) and 举手(Put your hand up); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. Warm the students up with an activity by showing the students a magic game and asking them to guess what topic was about in Chinese and Thai. (3 minutes)
2. Ask the students to close their eyes and then the researcher puts a green monster fish headgear on his head. (2 minutes)
3. a) The researcher makes "stand up" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and puts a wig on his/her head to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Sit down and put your hand up are taught by using the same four steps).
4. Practice

   The researcher asks the Thai homeroom teacher to physically respond to the Chinese words by doing actions. If the researcher gives the command with a low voice, then the home room teacher needs to repeat the command loudly with

physical responses. There is an example to show the students. After this, the students will do this practice with the researcher. (25 minutes)

Session 2 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 放手(Put your hand down), 拉手 (Hold teacher's hand) and 喝水(Drink water); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. The researcher reviews those three Chinese words with the students by doing actions. (2 minutes)
2. The researcher introduces the three words "put your hand down", "hold teacher's hand" and "drink water" in Chinese by toys. (3 minutes)
3. a) The researcher makes "put your hand down" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and puts an orange monster fish headgear on his/her head to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Hold teacher's hand and drink water are taught by using the same four steps).

4. Practice

   The researcher sticks some pictures on the whiteboard and asks two volunteer students stand in the front. When the researcher issues the command out, two volunteer students must clap the right picture and quickly repeat the command.

There is an example to show the students. After this, the students will do this practice with the researcher. (25 minutes)

Session 3 (50 minutes)

Objectives: To review and evaluate the students' Chinese vocabulary knowledge.

Teaching Procedures:

1. The researcher put a pink monster fish headgear on his head and reviews these six Chinese words "stand up", "sit down", "put your hand down", "hold teacher's hand" and "drink water" with the students by using four steps of TPR. (3 minutes)
2. Practice:
   2.1 Review with the researcher

   The researcher asks a volunteer student to stand in front of the class and wear a funny glass. The researcher will issues a command out with slight voice to the volunteer student and asks him/her to physically respond, and the rest of students are required to say the command after the volunteer student has physically responded. There is an example to show the students. After this, the students will do this practice with the researcher. (14 minutes)

   2.2 Review through a game

   The researcher puts a map with the numbers and pictures of all the six Chinese words on the ground first and shakes a dice then walk on the map based on the number was shaken and the researcher issues the command out and physically respond to the picture on the map. There is an example to show the students. After this, the students will do this practice with the researcher. (13 minutes)
3. Evaluate the students' Chinese vocabulary knowledge. (20 minutes)

Lesson Plan 2

Subject: Chinese

Topic: Daily Activities

Student: K 3

Time: 150 minutes (50 minutes/1 session)

Session 1 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 起床(wake up), 睡觉(sleep) and 刷牙(brush teeth); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. Warm the students up with an activity by issuing the commands such as "stand up", "sit down", "put your hand up", "put your hand down", "hold teacher's hand" and "drink water" and ask them to physically respond.(3 minutes)
2. The researcher puts a wig on his head and introduces the three Chinese words "wake up", "sleep" and "brush teeth" in Chinese by using toys. (2 minutes)
3. a) The researcher makes "wake up" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and wears a funny glasses on his/her eyes to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Sleep and brush teeth are taught by using the same four steps).
4. Practice:

The researcher uses a fishing roll to catches the right fishs (with pictures) based on himself command and physically respond to the command after the fish with picture has caught. There is an example to show the students. After this, the students will do this practice with the researcher. (25 minutes)

Session 2 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 洗脸(wash face), 洗手(wash hands) and 吃(eat); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. The researcher issues the commands out to the three words "wake up", "sleep" and "brush teeth" and the students are required to physically respond. (2 minutes)
2. The researcher puts a funny mask on his face introduces these three words "wash face", "wash hands" and "eat" in Chinese by playing a video. (3 minutes)
3. a) The researcher makes "wash face" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and wears a funny mask on his or her face to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Wash hands and eat are taught by using the same four steps).
4. Practice:

   The researcher puts five bowling pins (with pictures) on the ground and plays the bowling ball based on the commands that he has issued out then the

researcher repeats the command with physically respond after plays the bowling ball. There is an example to show the students. After this, the students will do this practice with the researcher. (25 minutes)

Session 3 (50 minutes)

Objectives: To review and evaluate the students' Chinese vocabulary knowledge.

Teaching Procedures:

1. The researcher reviews these six Chinese words "wake up", "sleep", "brush teeth", "wash face", "wash hands" and "eat" with students by using four steps of TPR. (3 minutes)
2. Practice:
   2.1 Review with the researcher

   Two volunteer students are asked to act teeth and toothbrush respectively then the researcher asks the rest of students to speak the command out after the two volunteer students has performed the action of "brush teeth". There is an example to show the students. After this, the students will do this practice with the researcher.(14 minutes)

   2.2 Review through a game

   The researcher shoots the picture on the whiteboard with the bow and arrow based on his commands and repeats the command with physically respond after the picture was shot. There is an example to show the students. After this, the students will do this activity with the researcher.(13 minutes)
3. Evaluate the students' Chinese vocabulary knowledge. (20 minutes)

Lesson Plan 3

Subject: Chinese

Topic: Ball Sports

Student: K 3

Time: 150 minutes (50 minutes/1 session)

Session 1 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 拍球(bounce the ball), 接球(catch the ball) and 扔球(throw the ball); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedure:

1. Warm the students up with an activity-the researcher will plays the ball with his students and asks them to guess what topic was about in Chinese and Thai. (2 minutes)
2. The researcher puts a red monster fish headgear on his head and introduces the three words "bounce the ball", "catch the ball" and "throw the ball" in Chinese by using basketball tabletop game.(3 minutes)
3. a) The researcher makes "bounce the ball" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and puts a yellow wig on his or her head to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Catch the ball and throw the ball are taught by using the same four steps).

4. Practice:

   The researcher wears a suit of sport uniform and physically respond to the three Chinese words “bounce the ball”, “catch the ball” and “throw the ball” based on his own commands. There is an example to show the students. After this, the students will do this practice with the researcher. (25 minutes)

Session 2 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 传球(pass the ball), 捡球(pick up the ball) and 踢球(kick the ball); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedure:

1. The researcher issues the commands of those three words “bounce the ball”, “catch the ball” and “throw the ball” and the students are required to physically respond. (2 minutes)
2. The researcher puts a funny mask on his face and introduces these three words “pass the ball”, “pick up the ball” and “kick the ball” in Chinese by using toys. (3 minutes)
3. a) The researcher makes “pass the ball” action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and wears a funny glasses on his or her eyes to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (Pick the ball and kick the ball are taught by using the same four steps).

4. Practice:

   The researcher with his three volunteer students stand in a circle and physically respond to those three Chinese words based on the researcher's commands. There is an example to show the students. After this, the students will do this practice with the researcher.(25 minutes)

Session 3 (50 minutes)

Objectives: To review and evaluate the students' Chinese vocabulary knowledge.

Teaching Procedures:

1. The researcher reviews those six Chinese words "bounce the ball", "catch the ball", "throw the ball", "pass the ball", "pick up the ball" and "kick the ball" with students by using four steps of TPR. (3 minutes)
2. Practice:
   2.1 Review with the researcher

   The researcher plays music and issues a command about the ball sport to the first student and asks the other students to pass this word one by one to the back. When the researcher stops the music that the last student has to say the word and physically respond. There is an example to show the students. After this, the students will do this practice with the researcher. (14 minutes)

   2.2 Review through a game

   The researcher puts six ball sport cards in the different boxes and hides these boxes in the corners of the classroom. The researcher needs to seek the right box after he issues the command. There is an example to show the students. After this, the students will do this practice with the researcher.(13 minutes)
3. Evaluate the students' Chinese vocabulary knowledge. (20 minutes)

Lesson Plan 4

Subject: Chinese

Topic: Athletic Activity

Student: K 3

Time: 150 minutes (50 minutes/1 session)

Session 1 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 跑(run), 跳(jump) and 走(walk); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. Warm the students up with an activity that the researcher issues them to physically respond to the six Chinese words "bounce the ball", "catch the ball", "throw the ball", "pass the ball", "pick up the ball" and "kick the ball". (3 minutes)
2. The researcher puts a purple wig on his head and introduces these three words "run", "jump" and "walk" in Chinese by using toys. (2 minutes)
3. a) The researcher makes "run" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and wears a funny mask on his or her face to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (jump and walk are taught by using the same four steps).

4. Practice:

   The researcher asks his six volunteer students to stand in a circle and physically respond to his commands. There is an example to show the students. After this, the students will do this practice with the researcher.(25 minutes)

Session 2 (50 minutes)

Objectives: To enable the students to:

1) Understand the meanings of these words, 爬(creep), 翻(roll over) and 蹲(squat); and
2) Say each word comprehensible or fluently in Chinese.

Teaching Procedures:

1. The researcher issues the commands of the three Chinese words "run", "jump" and "walk" and the students are required to physically respond.(3 minutes)
2. The researcher wears a funny mask on his face and introduces the three Chinese words "creep", "roll-over" and "squat" in Chinese by playing a video.(2 minutes)
3. a) The researcher makes "creep" action first and say it out loud for the students to listen to and observe;

   b) The researcher says the word and does the action. Then the students need to listen and imitate his action, but they are not forced to say the word immediately;

   c) The researcher issues the command to his students and they are required to physically respond to the command by doing actions;

   d) The researcher asks one student to stand in front of the class voluntarily and puts a black monster fish headgear on his or her head to give the command to the other students, who will need to physically respond to the command by doing actions. (20 minutes)

   (roll over and squat are taught by using the same four steps).
4. Practice:

   A volunteer student will stand in front and physically respond to the researcher's command and the rest of students have to speak the command out after the

volunteer student has physically responded. There is an example to show the students. After this, the students will do this practice with the researcher.

(25 minutes)

Session 3 (50 minutes)

Objectives: To review and evaluate the students' Chinese vocabulary knowledge.

Teaching Procedures:

1. The researcher puts a yellow monster fish headgear on his head and reviews the six Chinese words "run", "jump", "walk", "creep", "roll over" and "squat" with students by using four steps of TPR. (3 minutes)
2. Practice:
   2.1 Review with the researcher

   The researcher puts some jigsaw puzzles of these six Chinese words and makes jigsaw puzzle based on his own command then speak the word out. There is an example to show the students. After this, the students will do this practice with the researcher.(13 minutes)

   2.2 Review through a game

   The researcher puts six hula hoops (with pictures) on the ground and his eyes were covered by a strip of cloth. The researcher starts to walk between these hula hoops as playing the music then stop walking when the music has stopped. The researcher speaks the word out and physically respond to the picture in the hula hoop. There is an example to show the students. After this, the students will do this practice with the researcher.(14 minutes)
3. Evaluate the students' Chinese vocabulary knowledge. (20 minutes)

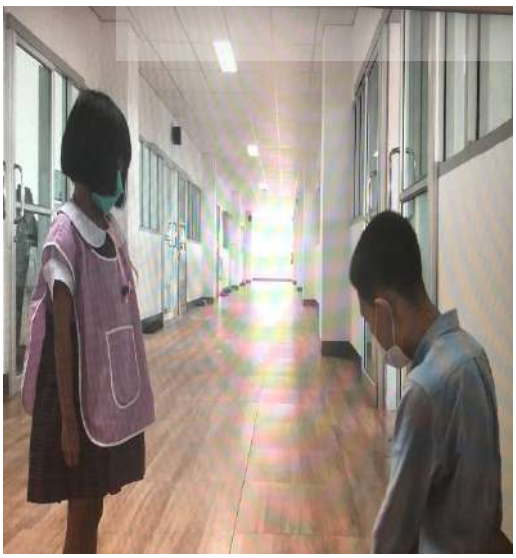
APPENDIX E

VIDEO RECORDS

A mobile phone was used to record the four weeks' process of teaching, learning and assessing from the beginning to the end.








APPENDIX F

CHINESE VOCABULARY KNOWLEDGE TEST 1 AND TEST 2

CHINESE VOCABULARY KNOWLEDGE TEST 1:

WEEK 1 SESSION 3

Student No.	起立 (Stand up)		坐下 (Sit down)		举手 (Put your hand up)		放手 (Put your hand down)		拉手 (Hold teacher's hand)		喝水 (Drink water)		Total scores
1	√	X	√	X	√	X	√	X	√	X	√	X	
2	√	X	√	X	√	X	√	X	√	X	√	X	
3	√	X	√	X	√	X	√	X	√	X	√	X	
4	√	X	√	X	√	X	√	X	√	X	√	X	
5	√	X	√	X	√	X	√	X	√	X	√	X	
6	√	X	√	X	√	X	√	X	√	X	√	X	
7	√	X	√	X	√	X	√	X	√	X	√	X	
8	√	X	√	X	√	X	√	X	√	X	√	X	
9	√	X	√	X	√	X	√	X	√	X	√	X	
10	√	X	√	X	√	X	√	X	√	X	√	X	
11	√	X	√	X	√	X	√	X	√	X	√	X	
12	√	X	√	X	√	X	√	X	√	X	√	X	
13	√	X	√	X	√	X	√	X	√	X	√	X	
14	√	X	√	X	√	X	√	X	√	X	√	X	

WEEK 2 SESSION 3

Student No.	起床 (Wake up)	睡觉 (Sleep)	刷牙 (Brush teeth)	洗脸 (Wash face)	洗手 (Wash hands)	吃饭 (Eat)	Total scores
1	√ X	√ X	√ X	√ X	√ X	√ X	
2	√ X	√ X	√ X	√ X	√ X	√ X	
3	√ X	√ X	√ X	√ X	√ X	√ X	
4	√ X	√ X	√ X	√ X	√ X	√ X	
5	√ X	√ X	√ X	√ X	√ X	√ X	
6	√ X	√ X	√ X	√ X	√ X	√ X	
7	√ X	√ X	√ X	√ X	√ X	√ X	
8	√ X	√ X	√ X	√ X	√ X	√ X	
9	√ X	√ X	√ X	√ X	√ X	√ X	
10	√ X	√ X	√ X	√ X	√ X	√ X	
11	√ X	√ X	√ X	√ X	√ X	√ X	
12	√ X	√ X	√ X	√ X	√ X	√ X	
13	√ X	√ X	√ X	√ X	√ X	√ X	
14	√ X	√ X	√ X	√ X	√ X	√ X	

WEEK 3 SESSION 3

Student No.	拍球 (Bounce the ball)	接球 (Catch the ball)	扔球 (Throw the ball)	传球 (Pass the ball)	捡球 (Pick up the ball)	踢球 (Kick the ball)	Total scores
1	√ X	√ X	√ X	√ X	√ X	√ X	
2	√ X	√ X	√ X	√ X	√ X	√ X	
3	√ X	√ X	√ X	√ X	√ X	√ X	
4	√ X	√ X	√ X	√ X	√ X	√ X	
5	√ X	√ X	√ X	√ X	√ X	√ X	
6	√ X	√ X	√ X	√ X	√ X	√ X	
7	√ X	√ X	√ X	√ X	√ X	√ X	
8	√ X	√ X	√ X	√ X	√ X	√ X	
9	√ X	√ X	√ X	√ X	√ X	√ X	
10	√ X	√ X	√ X	√ X	√ X	√ X	
11	√ X	√ X	√ X	√ X	√ X	√ X	
12	√ X	√ X	√ X	√ X	√ X	√ X	
13	√ X	√ X	√ X	√ X	√ X	√ X	
14	√ X	√ X	√ X	√ X	√ X	√ X	

WEEK 4 SESSION 3

Student No.	跑 (Run)	跳 (Jump)	走 (Walk)	爬 (Creep)	翻 (Roll over)	蹲 (Squat)	Total scores
1	√ X	√ X	√ X	√ X	√ X	√ X	
2	√ X	√ X	√ X	√ X	√ X	√ X	
3	√ X	√ X	√ X	√ X	√ X	√ X	
4	√ X	√ X	√ X	√ X	√ X	√ X	
5	√ X	√ X	√ X	√ X	√ X	√ X	
6	√ X	√ X	√ X	√ X	√ X	√ X	
7	√ X	√ X	√ X	√ X	√ X	√ X	
8	√ X	√ X	√ X	√ X	√ X	√ X	
9	√ X	√ X	√ X	√ X	√ X	√ X	
10	√ X	√ X	√ X	√ X	√ X	√ X	
11	√ X	√ X	√ X	√ X	√ X	√ X	
12	√ X	√ X	√ X	√ X	√ X	√ X	
13	√ X	√ X	√ X	√ X	√ X	√ X	
14	√ X	√ X	√ X	√ X	√ X	√ X	

CHINESE VOCABULARY KNOWLEDGE TEST 2:

WEEK 1 SESSION 3

Student No.	 起立(Stand up)	 坐下(Sit down)	 举手(Put your hand up)	 放手(Put your hand down)	 拉手(Hold teacher's hand)	 喝水(Drink water)	Total scores
1	√ x	√ x	√ x	√ x	√ x	√ x	
2	√ x	√ x	√ x	√ x	√ x	√ x	
3	√ x	√ x	√ x	√ x	√ x	√ x	
4	√ x	√ x	√ x	√ x	√ x	√ x	
5	√ x	√ x	√ x	√ x	√ x	√ x	
6	√ x	√ x	√ x	√ x	√ x	√ x	
7	√ x	√ x	√ x	√ x	√ x	√ x	
8	√ x	√ x	√ x	√ x	√ x	√ x	
9	√ x	√ x	√ x	√ x	√ x	√ x	
10	√ x	√ x	√ x	√ x	√ x	√ x	
11	√ x	√ x	√ x	√ x	√ x	√ x	
12	√ x	√ x	√ x	√ x	√ x	√ x	
13	√ x	√ x	√ x	√ x	√ x	√ x	
14	√ x	√ x	√ x	√ x	√ x	√ x	

WEEK 2 SESSION 3

Student No.	 起床(Wake up)	 睡觉(Sleep)	 刷牙(Brush teeth)	 洗脸(Wash face)	 洗手(Wash hands)	 吃饭(Eat)	Total scores
1	√ x	√ x	√ x	√ x	√ x	√ x	
2	√ x	√ x	√ x	√ x	√ x	√ x	
3	√ x	√ x	√ x	√ x	√ x	√ x	
4	√ x	√ x	√ x	√ x	√ x	√ x	
5	√ x	√ x	√ x	√ x	√ x	√ x	
6	√ x	√ x	√ x	√ x	√ x	√ x	
7	√ x	√ x	√ x	√ x	√ x	√ x	
8	√ x	√ x	√ x	√ x	√ x	√ x	
9	√ x	√ x	√ x	√ x	√ x	√ x	
10	√ x	√ x	√ x	√ x	√ x	√ x	
11	√ x	√ x	√ x	√ x	√ x	√ x	
12	√ x	√ x	√ x	√ x	√ x	√ x	
13	√ x	√ x	√ x	√ x	√ x	√ x	
14	√ x	√ x	√ x	√ x	√ x	√ x	

WEEK 3 SESSION 3

Student No.	 拍球(Bounce the ball)	 接球(Catch the ball)	 扔球(Throw the ball)	 传球(Pass the ball)	 踢球(Kick the ball)	Total scores
1	√ x	√ x	√ x	√ x	√ x	
2	√ x	√ x	√ x	√ x	√ x	
3	√ x	√ x	√ x	√ x	√ x	
4	√ x	√ x	√ x	√ x	√ x	
5	√ x	√ x	√ x	√ x	√ x	
6	√ x	√ x	√ x	√ x	√ x	
7	√ x	√ x	√ x	√ x	√ x	
8	√ x	√ x	√ x	√ x	√ x	
9	√ x	√ x	√ x	√ x	√ x	
10	√ x	√ x	√ x	√ x	√ x	
11	√ x	√ x	√ x	√ x	√ x	
12	√ x	√ x	√ x	√ x	√ x	
13	√ x	√ x	√ x	√ x	√ x	
14	√ x	√ x	√ x	√ x	√ x	

WEEK 4 SESSION 3

Student No.	 跑(Run)	 跳(Jump)	 走(Walk)	 爬(Creep)	 翻(Roll over)	 蹲(Squat)	Total scores
1	√ x	√ x	√ x	√ x	√ x	√ x	
2	√ x	√ x	√ x	√ x	√ x	√ x	
3	√ x	√ x	√ x	√ x	√ x	√ x	
4	√ x	√ x	√ x	√ x	√ x	√ x	
5	√ x	√ x	√ x	√ x	√ x	√ x	
6	√ x	√ x	√ x	√ x	√ x	√ x	
7	√ x	√ x	√ x	√ x	√ x	√ x	
8	√ x	√ x	√ x	√ x	√ x	√ x	
9	√ x	√ x	√ x	√ x	√ x	√ x	
10	√ x	√ x	√ x	√ x	√ x	√ x	
11	√ x	√ x	√ x	√ x	√ x	√ x	
12	√ x	√ x	√ x	√ x	√ x	√ x	
13	√ x	√ x	√ x	√ x	√ x	√ x	
14	√ x	√ x	√ x	√ x	√ x	√ x	

APPENDIX G

BEHAVIORAL OBSERVATION FORM

Learning behaviors during the four steps of TPR

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer students' commands
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

APPENDIX H

OBSERVING THE STUDENTS' LEARNING BEHAVIORS DURING FOUR TPR STEPS IN FOUR WEEKS

Active learning behaviors of session 1 of week 1

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Clapped hands	Jumped	Excited screamed, laughed	Hands up, ran, laughed
2	Smiley face	Excited screamed	Laughed and jumped	Hands up, ran, excited screamed
3	Smiley face	Smiley face with laughed	Ran to the researcher, laughed	Hands up, smiley face
4	Doing nothing	Imitated the actions	Doing nothing	Watched surroundings
5	Smiley face	Clapped hands	Clapped hands, smiley face	Hands up, laughed
6	Watched the researcher	Watched peers	Physically responded slowly	Kept sat
7	Excited screamed	Clapped Hands	Ran to the researcher	Hands up, jumped
8	Shook head	Talked to friends	Physically responded	Kept Hands down
9	Watched the researcher	Talked to friends	Physically responded	Hands up, kept sat
10	Watched the researcher	Hands up	Physically responded	Kept sat
11	Laughed	Ran to the researcher	Smiley face, excited screamed	Hands up, smiley face
12	Watched the researcher	Doing nothing	Physically responded to the commands	Kept sat
13	Smiley face	Excited screamed	Laughed	Ran, Hands up
14	Doing nothing	Jumped	Lay down	Kept sat

Active learning behaviors of session 2 of week 1

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Laughed	Excited screamed	Jumped, ran to the researcher	Hands up, jumped
2	Ran circles, excited screamed	Smiley face	Smiley face, clapped hands	Hands up, ran to the researcher
3	Said "ครู", smiley face	Clapped hands, jumped	Laughed	Hands up, smiley face
4	Head up and down at times	Head bowed	Physically responded to the commands	Doing nothing
5	Smiley face and jumped	Ran to the researcher, laughed	Clapped hands	Hands up, excited screamed
6	Doing nothing	Imitated some actions	watched peers	Hands up
7	Excited screamed	Ran, smiley face	Jumped, laughed	Hands up, laughed
8	Lay down on the ground	Laughed	Physically responded	Doing nothing
9	Talked to others	Imitated some actions	Physically responded	Doing nothing
10	Doing nothing	Imitated some actions	Kept sat	Hands up
11	Clapped Hands	Smiley face	Ran circles	Hands up, clapped hands
12	Kept sat	Imitated the actions	Kept quiet	Doing nothing
13	Ran to the researcher, smiley face	Excited screamed	Smiley face, hands up	Hands up
14	Kept sat	Doing nothing	Physically responded	Talked to friends

Active learning behaviors of session 3 of week 1

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Smiley face	Jumped	Excited screamed	Hands up, smiley face
2	Smiley face	Ran to the researcher, laughed	Ran circles smiley face	Hands up, laughed
3	Hands up, excited screamed	Excited screamed	Jumped, ran to the researcher	Hands up, ran to the researcher
4	Doing nothing	Kept sat and shook head	Doing nothing	Physically responded
5	Ran circles, laughed	Smiley face	Jumped, clapped hands	Waved hands
6	Doing nothing	Imitated some actions	Kept sat	Physically responded
7	Smiley face, ran to the researcher	Ran to the researcher, excited screamed	Hands up	Hands up, excited screamed
8	Doing nothing	Imitated some actions	Doing nothing	Hands up, laughed
9	Watched the researcher	Imitated some actions	Physically responded	Physically responded
10	Doing nothing	Imitated some actions	Physically responded	Physically responded
11	Hands up, laughed	Ran circles	Hands up, laughed	Hands up, ran to the researcher
12	kept quiet	Imitated some actions	Doing nothing	Doing nothing
13	Hands up, smiley face	Excited screamed	Ran to the researcher	Hands up, laughed
14	Watched the researcher	Kept sat	Physically responded	Doing nothing

Active learning behaviors of session 1 of week 2

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Laughed, shook body	Excited screamed	Smiley face, jumped	Hands up, laughed
2	Laughed, clapped hands	Said "หนูทำได้"	Ran to the researcher	Hands up, ran circles
3	Pronounced the commands, ran	Laughed	Excited screamed	Hands up, laughed
4	Doing nothing	Bowed head	Doing nothing	Physically responded to the commands
5	Pronounced the commands, laughed	Smiley face	Smiley face	Hands up, said "หนูๆครู"
6	Clapped hands	Ran circles, excited screamed	Jumped, Clapped hands	Hands up, swagged head, said "หนูๆ"
7	Doing nothing	Doing nothing	Talked to friends	Physically responded
8	Excited screamed	smiley face	Laughed	Hands up, smiley face
9	Clapped hands, ran circles	Shook head, excited screamed	Waved hands, smiley face	Hands up, said "หนูๆ"
10	Said "หนูๆ"	Clapped hands	Ran to the researcher	Hands up, ran to the front
11	Jumped, ran to the researcher	Clapped hands, smiley face	Hands up, laughed	Hands up, excited screamed
12	Bowed head	Doing nothing	Physically responded to the commands	Doing nothing
13	Excited screamed, hands up	Laughed, jumped	Laughed	Hands up, excited screamed
14	Smiley face, clapped hands	Ran to the researcher	Clapped hands	Hands up, smiley face

Active learning behaviors of session 2 of week 2

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Jumped, laughed	Clapped hands	Hands up, jumped	Hands up, smiley face
2	Pronounced the commands, laughed	Excited screamed	Ran circles	Hands up
3	Waved arms, smiley face	Said "คฐ"	Laughed	Hands up, excited screamed
4	Doing nothing	Watched surroundings	Doing nothing	Kept silent
5	Clapped hands, excited screamed	Smiley face	Clapped hands	Hands up, laughed
6	Smiley face	Excited screamed, jumped	Ran to the researcher	Hands up, clapped hands
7	Doing nothing	Kept silence	Watched the researcher	Doing nothing
8	Jumped, laughed	Ran circles, jumped	Jumped	Hands up
9	Smiley face	Clapped hands	Excited screamed	Hands up, jumped
10	Clapped hands	Waved arms	Ran to the researcher	Hands up, waved arms
11	Excited screamed	Smiley face	Smiley face	Hands up, excited screamed
12	watched the researcher	Doing nothing	Kept sat	Doing nothing
13	Hands up, said "คฐ"	Ran to the researcher	Excited screamed	Hands up, laughed
14	Smiley face	Jumped, laughed	Clapped hands	Hands up, excited screamed

Active learning behaviors of session 3 of week 2

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Smiley face	Excited screamed	Laughed	Hands up
2	Laughed, ran to the researcher	Jumped	Hands up	Hands up, excited screamed
3	Shook body	Laughed	Clapped hands	Hands up, smiley face
4	Kept silent	Bowed head	Doing nothing	Doing nothing
5	Jumped	Jumped	Smiley face	Hands up
6	Clapped hands	Laughed	Said "ครู"	Laughed
7	Doing nothing	Imitated some actions	Kept silent	Watched the researcher
8	Smiley face	Laughed	Excited screamed	Hands up, said "หนูๆ"
9	Hands up	Smiley face	Clapped hands	Hands up, smiley face
10	Excited screamed	Ran to the researcher	Smiley face	Hands up, excited screamed
11	Smiley face	Excited screamed	Ran to the researcher	Hands up, laughed
12	Kept silent	Doing nothing	Watched the surroundings	Doing nothing
13	Laughed	Smiley face	Hands up	Hands up, clapped hands
14	Jumped	Ran circles	Laughed	Hands up, smiley face

Active learning behaviors of session 1 of week 3

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Laughed, clapped hands	Excited screamed	Said "หนูทำได้"	Hands up, smiley face
2	Smiley face	Smiley face	Said "หนูๆ"	Hands up, ran to the researcher
3	Clapped hands	Jumped	Smiley face	Hands up, excited screamed
4	Doing nothing	Watched surroundings	Kept sat	watched the researcher
5	Ran to the researcher	Laughed	Said "ครูๆ"	Hands up, said "หนูๆ"
6	Laughed	Said "หนูๆ"	Smiley face	Hands up, Said "หนูยังไม่ได้"
7	Smiley face	Said "ครูๆ"	Excited screamed	Hands up, smiley face
8	Ran circles, hands up	Laughed	Jumped	Hands up, laughed
9	Excited screamed	Said "หนูทำได้"	Ran to the researcher	Hands up, "หนูๆ"
10	Smiley face	Shook head, smiley face	Ran circles	Hands up, Said "ครูๆ"
11	Clapped hands	Jumped	Said "หนูทำได้"	Hands up, laughed
12	Kept quiet	Doing nothing	Doing nothing	Watched the surroundings
13	Jumped	Smiley face	Laughed	Hands up, excited screamed
14	Smiley face	Excited screamed	Ran to the researcher	Hands up, smiley face

Active learning behaviors of session 2 of week 3

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Laughed	Smiley face	Jumped	Hands up, excited screamed
2	Jumped	Laughed	Ran to the researcher	Hands up, said "หนูๆครู"
3	Smiley face	Waved body, smiley face	Excited screamed	Hands up, smiley face
4	Doing nothing	Imitated the actions	Watched the researcher	Doing nothing
5	Excited screamed	Clapped hands	Hands up	Hands up, laughed
6	Ran to the researcher	Imitated the actions	Laughed	Hands up, jumped
7	Smiley face	Excited screamed	Hands up	Hands up, ran circles
8	Ran circles	Laughed	Ran to the researcher	Hands up, said "หนูๆ"
9	Jumped	Clapped hands	Laughed	Hands up, excited screamed
10	Hands up	Ran to the researcher	Ran circles	Hands up, smiley face
11	Smiley face	Laughed	Clapped hands	Hands up, said "หนูๆ"
12	Watched the researcher	Imitated the actions	Doing nothing	Kept sat
13	Laughed	Clapped hands	Excited screamed	Hands up, smiley face
14	Clapped hands	Laughed	Jumped	Hands up, said"ครูๆ"

Active learning behaviors of session 3 of week 3

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Excited screamed	Laughed	Smiley face	Hands up, smiley face
2	Laughed	Excited screamed	Jumped	Hands up, laughed
3	Shook head	Jumped	Excited screamed	Hands up, smiley face
4	Doing nothing	Kept silence	Doing nothing	Watched the researcher
5	Ran to the researcher	Smiley face	Clapped hands	Hands up, said "หนูยังไม่ได้ไป"
6	Laughed	Ran to the researcher	Smiley face	Hands up, said "หนูๆ"
7	Clapped hands	Smiley face	Said "ครู"	Hands up, laughed
8	Smiley face	Ran circles	Smiley face	Hands up, said "หนู"
9	Clapped hands	Clapped hands	Laughed	Hands up, smiley face
10	Smiley face	Laughed	Said "หนูทำได้"	Hands up, said "หนูๆ"
11	Excited screamed	Jumped	Smiley face	Hands up, said "หนูๆ"
12	Kept sat	Doing nothing	Watched the researcher	Doing nothing
13	Clapped hands	Ran circles	Smiley face	Hands up, laughed
14	Excited screamed	Clapped hands	Jumped	Hands up, "หนูๆครู"

Active learning behaviors of session 1 of week 4

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Excited screamed	Jumped	Ran to the researcher	Hands up, laughed
2	Smiley face, waved arms	Ran to the researcher	Clapped hands	Hands up, smiley face
3	Clapped hands	Excited screamed	Hands up	Hands up, said "หนูๆ"
4	Bowed head	Doing nothing	Watched the researcher	Physically responded to the commands
5	Clapped hands	Smiley face	Laughed	Hands up, said "ครูๆ"
6	Smiley face	Laughed	Excited screamed	Hands up, said "หนูๆ"
7	Jumped	Clapped hands	Smiley face	Hands up, smiley face
8	Excited screamed	Smiley face	Ran circles	Hands up, said "หนูยังไม่ได้"
9	Laughed	Ran circles	Smiley face	Hands up, excited screamed
10	Smiley face	Clapped hands	Jumped	Hands up, smiley face
11	Laughed	Jumped	Excited screamed	Hands up, ran circles
12	Watched the researcher	Imitated the actions	Doing nothing	Watched the researcher
13	Excited screamed	Laughed	Smiley face	Hands up, laughed
14	Laughed	Smiley face	Hands up	Hands up, ran to the researcher

Active learning behaviors of session 2 of week 4

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Laughed	Clapped hands	Excited screamed	Hands up, said "หนูๆ"
2	Excited screamed	Smiley face	Jumped	Hands up, said "หนูยังไม่ได้ไง"
3	Waved hands, laughed	Ran circles	Smiley face	Hands up, said "หนูๆ"
4	Doing nothing	Bowed head	Watched the researcher	Doing nothing
5	Ran to the researcher	Smiley face	Clapped hands	Hands up, said "สู้ๆ" to others
6	Smiley face	Laughed	Jumped	Hands up, clapped hands
7	Clapped hands	Excited screamed	Ran circles	Hands up, smiley face
8	Hands up	Jumped	Excited screamed	Hands up, jumped
9	Excited screamed	Smiley face	Laughed	Hands up, excited screamed
10	Laughed	Clapped hands	Smiley face	Hands up, ran to the researcher
11	Clapped hands	Laughed	Ran to the researcher	Hands up, laughed
12	Doing nothing	Watched the researcher	Doing nothing	Doing nothing
13	Clapped hands	Laughed	Smiley face	Hands up, smiley face
14	Jumped	Ran circles	Laughed	Hands up, clapped hands

Active learning behaviors of session 3 of week 4

Student No.	1. Listening to the researcher's commands and observing his actions	2. Listening to the researcher's commands and imitating his actions	3. Doing actions based on the researcher's commands	4. Doing actions based on the volunteer student's commands
1	Stood up quickly, laughed	Ran to the researcher	Laughed	Hands up, laughed
2	Smiley face	Clapped hands	Excited screamed	Hnads up, smiley face
3	Hnads up	Excited screamed	Smiley face	Hands up, ran circles
4	Doing nothing	Watched surroundings	Kept sat	Watched others
5	Laughed	Smiley face	Jumped	Hands up, said "หนูๆ"
6	Smiley face	Clapped hands	Hands up	Hands up, said "หนูๆครู"
7	Excited screamed	Ran to the researcher	Smiley face	Hands up, said "หนูๆ"
8	Clapped hands	Smiley face	Jumped	Hands up, said "หนูๆครู"
9	Hands up	Ran to the researcher	Smiley face	Hands up, laughed
10	Laughed	Excited screamed	Hands up	Hands up, said "หนูๆ"
11	Ran circles	Laughed	Ran to the researcher	Hands up, said "หนูๆ"
12	Watched the researcher	Doing nothing	Kept sat	Doing nothing
13	Smiley face	Laughed	Excited screamed	Hands up, laughed
14	Excited screamed	Jumped	Clapped hands	Hands up, said "หนูๆ"

BIOGRAPHY

Name	Tao Jiang
Date of Birth	September 22, 1997
Place of Birth	Qinhuangdao, China
Institution Attended	Xiangsihu college of Guangxi University for Nationalities, Guangxi, China Bachelor of Arts, 2019 Rangsit University, Thailand Master of Education in Bilingual Education, 2022
Address	1037629954@qq.com