



The Development of Practice Packages on Chinese Pronunciation Skills through Seesaw Online Classroom for Students Majoring in Chinese Language Teaching

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Abstract

This research aimed to 1) develop and measure the efficiency of a set of reading and pronunciation skills in Chinese phonetics via Seesaw online classroom; 2) examine the effectiveness of the set; and 3) evaluate students' satisfaction with practice packages on Chinese pronunciation via Seesaw online classroom. Thirty-six undergraduate students majoring in Chinese language teaching at a university in Thailand were the participants of this study. This study used descriptive statistics (mean and S.D.) and dependent samples t-test. The results of this research indicated a substantial increase in students' learning achievement due to the Seesaw online classroom. Additionally, the Development of Practice Packages for Chinese Pronunciation Skill Acquisition via Seesaw Online Classroom was greater ($\bar{x}=4.84$, S.D.=0.37) than the researcher's standard of 3.50, and achieved the efficiency standard criteria of 82.50/84.97, which was greater than the 80/80 efficiency standard criterion chosen. Students' satisfaction with learning was high when they utilized Seesaw's Chinese pronunciation practice packages ($\bar{x}= 4.50$, S.D.= 0.54).

Keywords: Practice packages on Chinese pronunciation skill, Seesaw online classroom, TCFL context.

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Contribution of this paper to the literature:

Exercises in Chinese phonetic pronunciation skills were designed to be adapted through the application in the online classroom, which includes both video and audio data through a recording device, so that users can perceive the information knowledge through visualization and listening to audio while practicing consonant, vowel, and tone.

1. Introduction

In the 21st century, China becomes regional and global economic, political, and military powerhouse (Hang, 2017). Additionally, Chinese is the language of individuals of Chinese ancestry, and Chinese culture has spread across the globe. China is a large nation with the world's largest population. In this respect, Chinese has become an important language and one of the United Nations' five official languages (Young, 2009). Being able to communicate in Chinese will be very beneficial when dealing with ancient countries rich in culture and civilization. China's Ministry of Education has defined the fundamental education reform by increasing the use of information technology (IT) in the teaching process and integrating IT into the teaching and learning curriculum (Cheng, 2020). Thailand has a strategy in 2017 that is aligned with the country's National Education Scheme. B.E. 2560 - 2574 (2017 - 2031), indicating that all institutions at all levels can organize learning activities in accordance with the curriculum with the goal of developing learners' characteristics and skills for the twenty-first century through access to learning resources, textbooks, media, innovation, and high-quality learning materials, and should increase educational opportunities through information and communication technology. As a result, teachers must include technology into the development of teaching and learning activities (Ahmadi & Reza, 2018). In this regard, the use of different media technologies is a critical component of implementing educational reforms in the twenty-first century, and the use of information technology to promote the concept of education reform has been generally embraced by many education-related sectors. Teaching Mandarin Chinese should begin with an understanding of the Mandarin phonetic alphabets, often referred to as "Hànyǔ Pīnyīn" (汉语拼音), a standard Chinese audio broadcasting system that uses roman letters to assist the learning of Chinese characters. This is comparable to the sound system used in Thai, which consists of consonants (声母, shēng mǔ), vowels (韵母, yùn mǔ) and tones (声调, shēng diào), all of which are derived from the International Phonetic Alphabets (IPA) in order to aid in the reading of Chinese characters aloud. The researcher observed that most students still struggle with reading and pronouncing Mandarin Chinese phonetic characters, which include consonants, vowels, and tones.

As demonstrated by Tianguang (2018) study which examined the frequent mistakes in learning Chinese among Thai students, learners used their familiarity with the Thai language to substitute for Mandarin Chinese sounds. In addition, it was found that learners had difficulty in pronouncing consonants /j/ /q/ /x/ /z/ /c/ /s/ /zh/ /ch/ /sh/ /r/ /g/ /k/ /h/, vowels /ia/ /ie/ /ua/ /uo/ /ü/ /üe/, and Zhitong (2018) studied the problem of tonal pronunciation of Thai students, with the result of problems with first and third tones. Junyan (2019) analyzed errors in Chinese speech from a sample of Thai students enrolled at Tianjin Normal University's College of International Studies and determined that the level of Chinese language proficiency is at the intermediate level by having Thai students pronounce words and sentences using the HSKK test. Furthermore, the majority of speech errors include the consonants /k/ /h/ /j/ /q/ /x/ /z/ /c/ /s/ and /zh/ /ch/ /sh/. Additionally, Chen (2006) discovered that the difficult vowels for Thai learners were /er/ /ia/ /ie/ /ian/ /iang/ /u/ /ua/ /uo/ /ü/ /üe/ /üan/ and /ün/.

Similarly, Yang (2020) also examined pronunciation issues among Thai students in higher education and discovered that students struggled with the vowels /ü/ /üe/ /ün/ and /er/. Tarone (1987) describes the phonetic system between two languages. Learners' second language pronunciation of foreign language is influenced partly by the mother tongue, so the reason why learners' pronunciation is distorted may be caused by the fact that the learners used the aforementioned consonant phonemes to compare with the Thai consonant phonemes that had similar sounds. Students should be trained to enhance their pronunciation and errors should be corrected as a result of the aforementioned issues (Ustaci & Ok, 2014), as Chinese phonetic pronunciation is the foundation of Chinese language teaching.

When a recipient is misunderstood or the meaning of a word changes as a result of mispronunciation, it can result in unsuccessful communication. As a result, teachers must pronounce words accurately and clearly using phonetics. The pronunciation of consonants and vowels in Chinese is critical to mastering the language (Deterding, 2010). One of the intriguing proposed learning activities is teaching via skill drills. For example, Phupluem (1996) asserts that exercises are critical and necessary for the development of language abilities because they assisted learners in remembering information sustainably, comprehending a variety of information, having fun while studying, and being able to use exercises to review their own original content. Additionally, Zainuddin, Habiburrahim, Muluk, and Keumala (2019) assert that exercises enable students to monitor their own progress and errors in order to develop and rectify them on time.

Also, Bouwmeester et al. (2019) affirm that exercises can help teachers manage their workloads more effectively, while also increasing students' learning efficiency. According to Tangpatthanasomboon (2003), teachers' practice should be relevant to the learners' level of knowledge and aptitude, consisting of brief explanations that are easy to comprehend and sufficient time to finish. Additionally, it should be interesting and challenging in order to spark students' curiosity and abilities and motivate them to engage actively in the learning process (Yang, 2018).

All of the aforementioned take the learners' development and maturity into consideration, and the emphasis on problem solving helps to accommodate individual differences. As previously stated, the researcher was interested in studying and developing skill practice packages related to Thai people's pronunciation problems in order to help students majoring in Chinese language teaching pronounce Chinese phonetic characters correctly according to Chinese phonetics. Additionally, the researcher considered individual differences, which means that learners may practice using the lessons provided and can do a pronunciation practice test outside of the classroom, which includes submitting audio clips for teachers to correct pronunciation. The researcher implemented practice packages for Chinese phonetic reading skills in the SeeSaw online classroom. According to Sankaburanurak (2017),

the capacity to use multimedia and technology effectively is a critical component of education in the twenty-first century. That is, utilizing the latest educational technology to improve the quality of Chinese instruction and changing traditional instruction to stimulate learners' attention are both consistent with 21st-century learning. The researchers employed the Seesaw Application, which was created as a "digital platform" for learners of all ages, and users may register by scanning the QR code.

There are customizable learning patterns available in the program for learners to select from, such as typing, drawing, taking photographs, recording videos, or connecting additional links, which makes it simple and enjoyable to use. For instance, students can record a video to describe their response or their own work, utilizing a media that is easily accessible. Notably, it is completely free, providing unlimited access. Students can access internet resources using their laptops, tablets, or cellphones to maximize their learning potential. Given its significance, the researchers anticipated that producing Chinese phonetic pronunciation practice packages via the Seesaw online classroom would serve as a guide for successful teaching and learning, reducing disparities between students and allowing students to reach their full potential.

1.1. Research Purposes

1) To develop the Chinese phonetic pronunciation practice packages through the Seesaw online classroom and examine its effectiveness.

2) To assess the effectiveness of the Chinese Phonetic Pronunciation Skills Practice Packages delivered via the Seesaw online classroom by comparing students' abilities to read aloud before and after instruction using the created skill packages.

3) To determine students' satisfaction with the created practice packages for Chinese phonetic pronunciation.

2. Materials and Methods

2.1. Participants

The participants in this study were 78 students majoring in Chinese language teaching. The participants were divided into two groups:

1) The sample group for evaluating the efficiency of the practice packages was 42 students majoring in Chinese language teaching enrolled in the first semester of Academic Year 2020. This is not an experimental group.

2) The experimental group consisted of 36 students majoring in Chinese language education who were enrolled in the second semester of Academic Year 2020 on a voluntary basis.

2.2. Variables

The independent variable: the Chinese phonetic pronunciation skill packages through the online classroom Seesaw

The dependent variables: 1) the learning achievement of the learners who studied with the Chinese phonetic pronunciation skill packages, 2) the efficiency of the developed practice packages, and 3) the students' satisfaction towards the Chinese phonetic pronunciation practice packages.

2.3. Research Instruments

1) Chinese phonetic reading skill packages were divided into 3 categories: consonants, vowels, and tones for students majoring in Chinese language teaching. These packages were produced by the researcher using a computer program. Each session lasts 5-10 minutes, and students are given listening exams during class.

2) Form for evaluating the quality of practice packages for Chinese phonetic pronunciation skills.

3) The Chinese Phonetic Pronunciation Ability Test was divided into six sections with a total of 47 items. The pre- and post-tests were evaluated by three Chinese language teachers.

4) A satisfaction survey for the online classroom's Chinese phonetic pronunciation skill practice packages through the online classroom Seesaw.

2.4. Research Procedures

In this study, the research procedures are described in [Figure 1](#).

1) Establish the experimental location and instruments.

2) Establish a learner orientation prior to learning.

3) Provide 21 sets of CVT Chinese phonetic pronunciation practice for 10 weeks.

a. Week 1: Learner orientation by explaining how to attend classes, how to learn with the application Seesaw, and measurement and evaluation methods. The pre-test was administered and graded during this week by two full-time Chinese language professors and one Chinese instructor.

b. Weeks 2-4: provide learning sessions using the consonant pronunciation practice through the Seesaw online classroom.

c. Weeks 5 – 7: provide learning sessions using the phonetic pronunciation practice packages on Chinese characters (Vowel pronunciation practice) through the Seesaw online classroom.

d. Weeks 8 – 10: provide learning sessions using the phonetic pronunciation practice packages on Chinese characters (Tonal pronunciation practice) through the Seesaw online classroom.

e. Week 11: Students took a post-test which was assessed by two full-time Chinese language professors and one Chinese teacher.

4) After the students finished the post-test, the experiment group was invited to complete a satisfaction survey on the Chinese phonetic pronunciation skill packages using the Seesaw online classroom on Google Forms.

2.5. Research Framework

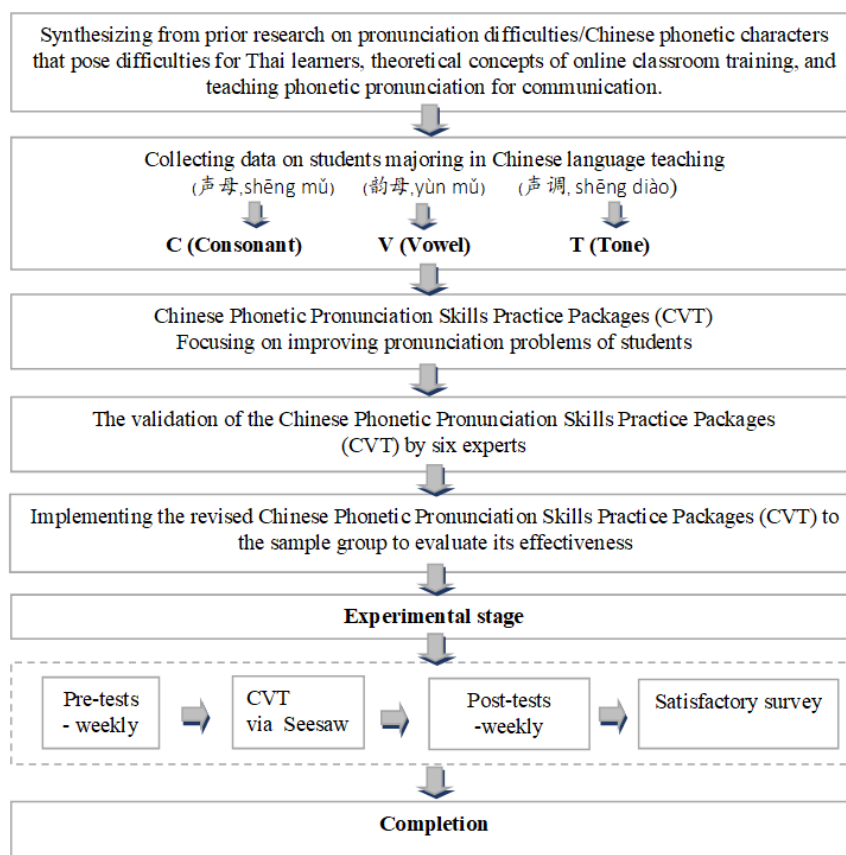


Figure 1. The development of practice packages on Chinese pronunciation skills through seesaw online classroom for students majoring in Chinese language teaching.

3. Results

1. The results from the development of the Chinese phonetic pronunciation practice packages through the Seesaw online classroom

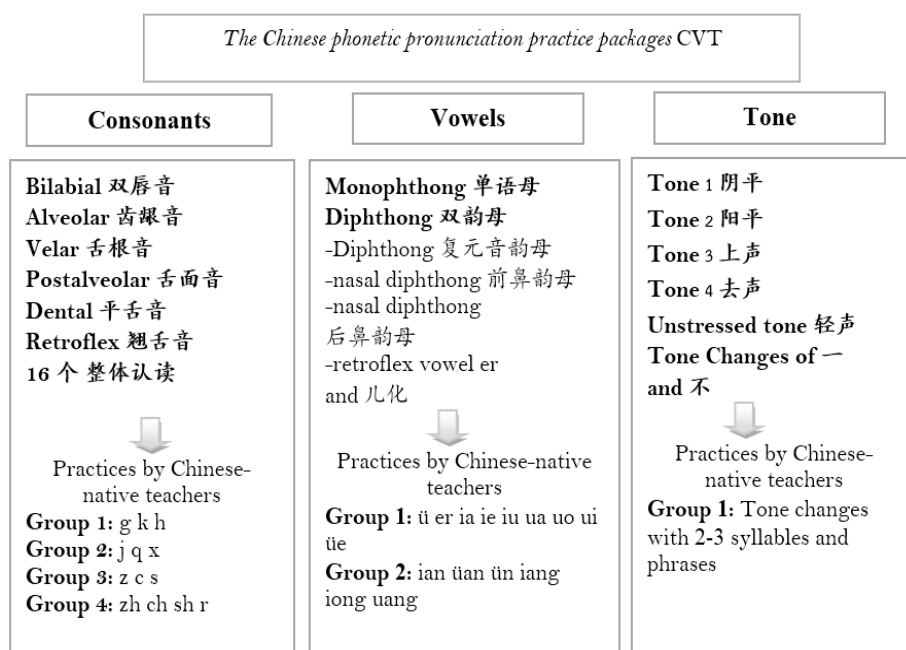


Figure 2. The Chinese phonetic pronunciation practice packages CVT.

The CVT Chinese Phonetic Pronunciation Skills Practice Packages (Figure 2) include a five-step teaching process that is essential as follows.

Step 1: Bring to the lesson. The teacher greets, introduces the content and informs the students of the purposes.

Step 2: Content is divided into 2 sub-sections as follows: 1) The instructor explains the essential tasks and emphasizes the difficult points to the students by illustrating the pronunciation system and illustrating the meaning of words with images. 2) To practice reading aloud, students listen to and mimic the sounds they hear.

Step 3: Concluding. The teacher outlines the pronunciation's most important aspects. Simultaneously, students review their pronunciation.

Step 4: Enhance your reading abilities. Learners listen to and mimic the sounds they hear, which may include vocabulary, phrases, poetry, and brief texts.

Step 5: Enhance your listening abilities. From simple to difficult levels, learners listen and pick the correct answer; they also listen and fill in the proper response; and they listen to syllables, vocabulary, and short sentences.

Table 1. The quality of the Chinese phonetic pronunciation practice packages through SeeSaw.

No.	Aspects	Mean	S.D.	Interpretation
1	Content	4.78	0.42	Excellent
2	Presentation	4.78	0.42	Excellent
3	Evaluation	5.00	0.00	Excellent
4	Visual, Auditory, and Language use	4.76	0.44	Excellent
5	Texts and colors	4.90	0.31	Excellent
6	Learning Organization	4.83	0.38	Excellent
Total		4.84	0.37	Excellent

From Table 1, it revealed that the results of quality analysis of the Chinese phonetic pronunciation skill practice packages were at a very good level ($\bar{x}=4.84$, S.D. = 0.37). The quality evaluation aspect was at very good level ($\bar{x}=5.00$, S.D. = 0.00). In terms of letters and color selection, the quality was at a very good level ($\bar{x}=4.90$, S.D. = 0.31). The quality was at a very good level ($\bar{x}=4.83$, S.D. = 0.38) in terms of content and presentation. The quality was at a very good level ($\bar{x}=4.78$, S.D. = 0.42) in terms of visual, sound and language use. The quality was at a very good level ($\bar{x}=4.76$, S.D. = 0.44), respectively.

2. The efficiency of the Chinese phonetic pronunciation practice packages through the online classroom Seesaw (Field Testing), which was conducted with 30 students.

Table 2. The efficiency of the Chinese phonetic pronunciation practice packages through the online classroom Seesaw (Field Testing).

Tools	N	K	Total Scores (all tests)	Total scores (all students)	Percentages
During-study Tests (E_1)	30	145	4.350	3.589	82.50
Post-Test (E_2)	30	65	1.950	1.657	84.97

The findings of the Seesaw online classroom field testing of the Chinese Phonetic Pronunciation Skills Practice Packages are shown in Table 2. The percentage of average test scores obtained during the course was 82.50, and the percentage of average test scores obtained after the class was 84.97, indicating that Chinese phonetic pronunciation skill packages delivered via an online classroom, Seesaw, were constructed with an efficiency of 82.50/84.97, achieving the established benchmarks of at least 80/80.

In conclusion, the Chinese phonetic pronunciation practice packages delivered via the Seesaw online classroom demonstrated excellent performance and were suitable for classroom usage. Additionally, the results supported the research hypothesis.

3. Inter-rater reliability in using the pre- and post-tests of the Chinese Phonetic Pronunciation Skills Practice Packages through the online classroom Seesaw

Table 3. Reliability statistics for pre- and post-tests of a Chinese phonetic pronunciation skills practice packages through the seesaw online classroom with three experts: 2 Chinese language professors and 1 Chinese teacher.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.998	0.998	3

According to Table 3, the reliability between experts, as measured by a Pearson correlation coefficient (r), was 0.998, suggesting that the tests were performed at a very high level. As a result, this test was found its use appropriate in a positive direction.

Table 4. The reliability coefficient of the three instructors' ratings.

Raters		Professor 1	Professor 2	Professor 3
Professor 2	Pearson Correlation	0.994** (0.00)**	1	
Professor 3	Pearson Correlation	0.995** (0.00)**	0.997** (0.00)**	1

Note: **Correlation is significant at the 0.01 level (2-tailed).

According to Table 4, the reliability coefficient was evaluated based on the raters' internal reliability, and it was found that the Coefficient Index between the raters among the three Chinese teaching professionals (experts 1, 2, and 3) was consistent. Additionally, the Coefficient Index from expert 1 and 2 evaluations was statistically significant at the .01 level ($p=0.000$), with a very high level of correlation in the same direction (positive direction) ($r=0.994$). Correlations between experts 1 and 3 were statistically significant at the .01 level ($p=0.000$), with a very high degree of correlation (positive direction) ($r=0.995$). Between the raters of the second and third expert evaluations, there was a statistically significant correlation at the 0.01 level ($p=0.000$), with a very high degree of correlation in the same direction (positive direction). ($r=0.992$).

4. A comparison of learning achievement with scores before and after learning from Chinese phonetic pronunciation skills packages through the online classroom Seesaw.

Table 5. A comparison of learning achievement.

	\bar{x}	S.D.	\bar{D}	S.D. _D	t	Sig.(1-tailed)
Pre-test	46.29	8.94				
Post-test	54.93	4.94	8.64	4.84	10.70*	0.0000

Note: * $p \leq .05$.

According to Table 5, the participants' learning achievement was significantly higher after studying with the Chinese phonetic pronunciation skill packages via the online classroom SeeSaw with the statistical significance at

the .05 level. The average score before using the phonetic pronunciation skill packages was 46.29 and the average score after using the phonetic pronunciation skill packages was 54.93 out of a full 60 points.

It was concluded that the researcher's Chinese phonetic pronunciation skill packages delivered via the online classroom SeeSaw were successful in improving the learning achievement of students majoring in Chinese language teaching.

Table 6. Students' satisfaction towards Chinese phonetic pronunciation skill package through SeeSaw.

Statements	Mean	S.D.	Interpretation
1) Teachers			
1.1 The teacher properly and clearly described how to use the online classroom Seesaw to practice Chinese phonetic pronunciation skills.	4.42	0.50	Agree
1.2 Teachers advise, recommend, and monitor students in using the Seesaw online classroom's Chinese phonetic pronunciation skill practice thoroughly.	4.50	0.56	Agree
1.3 Teachers utilize a variety of methods to encourage students to actively develop their Chinese phonetic pronunciation skills via the Seesaw online classroom's Chinese Phonetic Pronunciation Skills Practice.	4.42	0.56	Agree
1.4 Teachers are skilled at improving students' Chinese phonetic pronunciation abilities via the use of the Chinese Phonetic Pronunciation Skills Practice in the Seesaw online classroom and by providing opportunities for students to ask questions.	4.55	0.55	Strongly Agree
Total	4.49	0.54	Agree
2) Content			
2.1 The material is clear and comprehensible.	4.61	0.54	Strongly Agree
2.2 The material is organized in a step-by-step fashion, from basic to advanced.	4.55	0.50	Strongly Agree
2.3 The content is easy to understand.	4.58	0.55	Strongly Agree
2.4 The content is interesting	4.55	0.55	Strongly Agree
2.5 The pronunciation issue has been resolved in accordance with the goals.	4.39	0.65	Agree
2.6 Instructions, suggestions, and learning guidelines are clear.	4.45	0.56	Agree
2.7 It is clear in the demonstration and practice processes.	4.45	0.56	Agree
2.8 There are appropriate interaction activities with teachers through the online classroom.	4.29	0.62	Agree
2.9 The test format is appropriate.	4.45	0.56	Agree
2.10 The number of test items is appropriate.	4.42	0.56	Agree
2.11 Test reports are appropriate.	4.45	0.56	Agree
2.12 The timing of testing is appropriate.	4.47	0.61	Agree
Total	4.50	0.57	Agree
3) Media			
3.1 Colors and font sizes are appropriate.	4.53	0.51	Strongly Agree
3.2 Background and illustration colors are appropriate.	4.53	0.51	Strongly Agree
3.3 The illustrations are appropriate and meaningful.	4.53	0.51	Strongly Agree
3.4 The size and type of images are appropriate.	4.39	0.49	Agree
3.5 The narration is clear.	4.37	0.60	Agree
3.6 The length of time spent is appropriate.	4.45	0.56	Agree
Total	4.47	0.53	Agree
4) Reading Practice			
4.1 Pronunciation exercises are appropriate for your interests, aptitudes, and abilities that are beneficial to you.	4.61	0.49	Strongly Agree
4.2 Pronunciation exercises consist of steps or processes that encourage students to learn effectively.	4.58	0.50	Strongly Agree
4.3 Pronunciation skills exercises help students learn and use them in their daily life.	4.58	0.50	Strongly Agree
Total	4.59	0.49	Strongly Agree
5) Post-Practice			
5.1 Consonant pronunciation	4.66	0.48	Strongly Agree
5.2 Vowel pronunciation	4.47	0.51	Agree
5.3 Tone pronunciation	4.55	0.50	Strongly Agree
5.4 Pronunciation of compound words	4.32	0.53	Agree
5.5 Word Stress	4.45	0.61	Agree
5.6 Pronunciation of phrases and sentences	4.39	0.55	Agree
Total	4.49	0.54	Agree
6) Benefits			
6.1 I can improve my Chinese phonetic pronunciation skills effectively.	4.58	0.50	Strongly Agree
6.2 Exercises are useful for further study or provide knowledge of a specific group.	4.50	0.51	Agree
Total	4.54	0.50	Strongly Agree
Total of 6 aspects	4.50	0.54	Agree

According to Table 6, students reported the highest degree of satisfaction with the development of Chinese phonetic pronunciation skills via the online SeeSaw classroom ($\bar{x}=4.50$, S.D. = 0.54). The pronunciation skill practice ($\bar{x}=4.59$) was the most satisfied by students, followed by the benefits of the online classroom ($\bar{x}=4.54$) and the content ($\bar{x}=4.50$). The teachers, the pronunciation abilities after the pronunciation exercise ($\bar{x}=4.49$), and the media composition ($\bar{x}=4.47$) were all followed respectively.

4. Conclusion and Discussion

1. It can be concluded that the CVT Chinese Phonetic Pronunciation Skills Practice Packages created by the researcher consist of six steps: (1) studying related documents; (2) structuring online lessons and writing lesson plans; (3) implementing the storyline and plans; (4) producing the Chinese phonetic and pronunciation practice kits; (5) editing and audio recording; and (6) using the media of the Chinese phonetic pronunciation skill practice packages to achieve the level of efficiency. There are three main components in the section, namely 1) Consonant practice set, 2) Vowel practice set, and 3) Tone practice set. The teaching process has five steps as follows: Step 1 introduce into the lesson, Step 2 Content, Step 3 Wrap-up, Step 4 Practice reading skills, and Step 5 Practice listening skills. The researcher combined the concept of [Khlaisang \(2017\)](#) which has proposed an IPO+8 Model. To elaborate, the design of an instructional system should be systematic and include the following three primary steps and eight sub-steps: Inputs, processes, and outputs to be used in the process of developing skill practice packages. 1) The input aspect entails the process of analyzing inputs, which includes analyzing problems/needs associated with the preparation of skill practice packages, learner characteristics, lesson content, objectives, presentation styles, and appropriate activities, as well as developing strategies for developing a set of skill practices. 2) Process: it entails the synthesis of the process of selecting and utilizing current and new instructional aids and resources; and 3) Evaluation of the learning from the use of skill practice packages in the online classroom (Output): An evaluation of the learning from the use of skill practice packages in the online classroom was conducted, as well as an evaluation of the skill practice packages' performance. Additionally, the researcher combined the concepts associated with teaching Chinese pronunciation suggested by [Thabseerak \(2019\)](#); [Tianguang \(2018\)](#); [Avery & Ehrlich \(1994, cited in Kotcharat and Limsiriruengrai \(2014\)\)](#); [Celce-Murcia \(2000, cited in Kotcharat and Limsiriruengrai \(2014\)\)](#), which focused on pronunciation skill development, by introducing a method for teaching pronunciation to Thai students and suggesting methods for teaching phonetic pronunciation consistent with the teaching of language for communication.

The creation of the CVT Chinese Phonetic Pronunciation Skills Practice Packages had a mean of 4.82 and a standard deviation of 0.14. The criteria for approving the quality of the CVT Chinese Phonetic Pronunciation Skills Practice packages were determined using the mean of each question; any of the following has an average of "good to very good." Additionally, the overall average cannot be less than the "good" standard. The development of Chinese phonetic pronunciation practice packages for students majoring in Chinese language instruction via the online classroom Seesaw aids in the transmission of information and appropriate material for learners. The material is presented in an acceptable manner for the intended audience. There is a logical progression of the information, clear and simple-to-understand language, and intriguing topics to pique learners' interest. Additionally, assessments throughout the course were consistent with the test, offering ongoing lessons and allowing learners to respond to the lessons, assisting in the strengthening of activities for the development of effective pronunciation abilities for learners. [Kang \(2010\)](#) demonstrated that integrating technology information and curricula does not imply the use of information technology as a supplement to teaching and learning; rather, it emphasized the use of information technology as a tool to promote self-learning and emotional motivation in students. Additionally, it is compatible with [Clark \(1996\)](#), who investigated the use of interactive multimedia systems to monitor instructors' professional development. The findings indicated that instructors who used the interactive multimedia software to monitor teacher professional development had a greater capacity to recall, demonstrate, and explain than teachers who utilized the handbook of professional teaching standards.

Thus, the CVT Chinese Phonetic Pronunciation Skills Practice Packages may efficiently practice Chinese phonetic pronunciation skills, allowing learners to properly pronounce them. By illustrating the phonetic system and visualizing words during pronunciation practice, learners may get a better understanding of the language. Pronunciation practice through online classrooms may be done at anytime and anywhere.

2. Using field testing to determine the effectiveness of the CVT Chinese Phonetic Pronunciation Skills Practice Packages, it was determined that the CVT Chinese Phonetic Pronunciation Skills Practice Packages were 82.50/84.97 efficient. According to the established criterion of 80/80, the CVT Chinese phonetic pronunciation was successful. The CVT Chinese Phonetic Pronunciation Skills Practice Packages assist students in developing a better understanding of the Mandarin Chinese pronunciation system, as well as developing Chinese phonetic or pinyin pronunciation skills and resolving the issue of frequently mispronounced pronunciation with native speakers through online classroom learning. This is consistent with [Pimkot \(2017\)](#), who examined the improvement of phonetic reading abilities in Mandarin Chinese (Hanyu Pinyin) among Grade 3 children using the electronic book "Happy Chinese Pinyin." 《快乐学拼音》. The findings indicated that the E-book "Happy Chinese Pinyin" 《快乐学拼音》 series for Grade 3 students fulfilled the stated requirements with an efficiency of 83.30/82.27.

3. A comparison of learning achievement with scores obtained before and after using the CVT Chinese Phonetic Pronunciation Skills Practice Packages through the Seesaw online classroom demonstrates that the package may be utilized to teach according to the hypothesis. The mean score prior to utilizing the CVT Chinese Phonetic Pronunciation Skills Training Packages was 19.45. When comparing average scores before and after utilizing the CVT Chinese Phonetic Pronunciation Skills training package, CVT Chinese characters had a mean score of 29.00, out of a maximum score of 60. The CVT Chinese Phonetic Pronunciation Skills Practice Packages were statistically significant at the 0.05. This indicates that the researcher's CVT Chinese Phonetic Pronunciation Skills Training Packages were successful and could affect the participants' learning achievement. [Xiao \(2017\)](#), who used the phonetic learning software called "English Liulishuo" (<http://www.liulishuo.com/>) with sixty-seven non-English-majored freshmen from the Electrical and Information College in Jinan University. They were divided into two classes, 34 for the experimental class (EC), 33 for the control class (CC). T-test result show that the scores of the post-test of these two classes are significantly different from each other ($t = 4.23, p = .000 < 0.05$). Therefore, she concluded that the EC has outperformed the CC at the end of the study. This is also consistent with [Nokklang \(2016\)](#), who examined grade 4 students' improved Chinese phonetic reading (Pinyin) abilities and their pleasure with learning activities including games. The findings indicated that students' competence in Chinese phonetic (Pinyin) pronunciation improved by 70% over the 0.05 criterion.

Utilizing an interesting Chinese phonetic pronunciation exercise package CVT that includes pictures and sounds and has simple-to-understand material may encourage pupils. The training sequence should progress from simple to challenging material. Notably, the researcher included pronunciation practice with a native speaker in the process of resolving the issue of often mispronounced consonants, vowels, and tones. By integrating the CVT Chinese Phonetic Pronunciation Skills Practice Packages into an online classroom Seesaw application, learners may engage, communicate, and question instructors about each CVT Chinese phonetic pronunciation skill package. Additionally, students may record the audio and submit it to the instructor for verification.

4. Students expressed satisfaction with the greatest degree of improvement of Chinese phonetic pronunciation abilities achieved via the online SeeSaw classroom ($\bar{x}= 4.50$, $SD = 0.54$). This is congruent with Sripayat (2010), who created a series of spelling activities for Thailand's sixth-grade pupils. Their pupils had the following sentiments on the spelling practice packages: 1) Students had favorable attitudes towards the content's complexity, and 2) Students expressed favorable attitudes towards the training set's structure. This is also in line with Seubsom and Mheplad (2017), who created flip classroom learning activities for students majoring in Computer Studies in Thailand by combining multimedia technology courses through Google Classroom. The findings indicated that students were pleased with flipped classrooms since they allowed for the creation of workpieces via project-based learning techniques, as well as the ability to speak with or question instructors about academic difficulties.

Additionally, students offer the following recommendations for a variety of problems. 1) Students may improve their pronunciation abilities independently and without regard for time constraints. When there is no restriction on the number of students who practice pronunciation throughout each session, students get a better understanding of how to pronounce the Chinese phonetic characters and also the pronunciation system. This is because learners have practiced pronunciation in accordance with the method established during the content stage in order to develop an understanding of the pronunciation system. Finally, the instructor highlights the difficult content and reviews the material once more. Following that, reading and listening skill exercises were performed to assess students' ability to read vocabulary, poetry, and short essays. Finally, students practice the procedure with native speakers in order to correct common pronunciation errors. This appears to be consistent with the findings of Chokpaiboon, Wongwattananukun, and Xu (2017), who developed Mandarin phonetic pronunciation skills for Chinese students in Thailand and discovered that all trainees acquired the correct pronunciation of the Mandarin phonetic alphabet, a natural pronunciation, and the ability to apply the knowledge gained to other Chinese-related courses. Additionally, their participants expressed the most satisfaction with the skill development process. 2) The students suggested broadly disseminating this material to allow students to review their self-practice. Additionally, they would like to participate in group activities to strengthen this approach to learning and would like the researcher to encourage more teaching of Chinese majors in the area of online teaching methods, including how to use programs or applications that assist in teaching, in order to remain consistent with the modern era, which does not rely exclusively on classroom instruction.

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