

# Edited Using Digital Tools and Storytelling to Improve Thai EFL Varangkana.docx

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## Using Digital Tools and Storytelling to Improve Thai EFL Pre-service Teachers' Pronunciation Ability

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### ABSTRACT

*This research aimed to study the impacts of digital tools and storytelling on Thai EFL pre-service teachers' pronunciation ability. The research employed the mixed methods design to gather qualitative and quantitative data. To investigate the impacts of digital tools and storytelling on pronunciation, a pre-experimental one-group pre-test post-test design was conducted with 34 Thai EFL pre-service teachers at a public university in the lower north of Thailand for eight weeks. The research instruments comprised 1) lesson plans, using digital tools and storytelling to enhance pronunciation ability, 2) pre-and post-tests on pronunciation ability, and 3) learning logs. The statistical measurements included means, percentage, frequency, and dependent t-tests. In terms of qualitative analysis, the coding and thematic analysis methods were adopted to analyze the data. The findings revealed that the post-test average scores of the Thai EFL pre-service teachers' pronunciation ability were higher than the pre-test ( $p < 0.05$ ). For the qualitative findings, the impacts found were 1) phonological awareness, 2) confidence increases, 3) positive learning motivation, 4) pronunciation improvement, and 5) self-directed learning.*

*Keywords: digital tools; storytelling; pronunciation ability; feedback*

## INTRODUCTION

Since clear and correct pronunciation can lead to a better interpretation of the messages, English language learners need to <sup>5</sup> be able to analyze the speech heard, which leads <sup>to</sup> adequate comprehension (Huwig, 2004). As pronunciation plays a vital role in communication, many researchers have researched how to improve students' pronunciation for decades, aiming to enhance learners' listening skills and oral communication with the belief that pronunciation instruction could shed some light on the efficient pronunciation of students. Previous studies show <sup>4</sup> a positive correlation between pronunciation ability and pronunciation teaching (Arrieta, 2017; Camus-Oyarzun, 2016). However, there is little focus on enhancing pre-service teachers' pronunciation ability, although they are expected to be good models for learners. Many studies focused on improving students' pronunciation regardless of EFL pre-service teachers whose pronunciation is supposed to be high so that they can <sup>39</sup> guide students. According to Aksakalli and Yağiz (2020), little research has paid attention to EFL <sup>pre-service teachers'</sup> pronunciation ability and instruction.

<sup>Pre-service teachers</sup> should provide utterances <sup>in</sup> both segmental and supra-segmental elements correctly, fluently, and clearly. As Cabrera (2016) mentioned, Thai teachers should be able to coach students to produce suprasegmental elements. EFL pre-service teachers must be trained to analyze pronunciation problems and produce accurate ones. Hamilton (2011) also supported the idea that pronunciation is concerned with producing individual sounds correctly, and the suprasegmental <sup>34</sup> elements, such as stress and intonation, should be aimed at efficient communication. <sup>Since English is</sup> perceived <sup>as a foreign language in Thailand</sup>, in such a context, Thai people tend to need help pronouncing words in English with correct pronunciation, which yields effective communication. This case also occurs in EFL pre-service teachers who need more training to effectively control their pronunciation and guide their students in improving their pronunciation. According to Pusiripinyo (2020), even though they have passed the phonology course, student teachers need help to produce speech correctly while teaching their students in the teaching practicum. This is aligned with Kotcharat and Limsiriruengrai (2014), whose study <sup>46</sup> revealed that English primary students could not pronounce English speech correctly. However, <sup>due to the lack of practice</sup>, they passed <sup>the</sup> Phonetics <sup>course</sup> and learned about phonological systems.

To detail the obstacles for Thai EFL pre-service teachers, pronunciation difficulty is likely due to interlanguage systems (Selinker, 1972). It is clear that language transfer, one of the critical factors for the formation of interlanguage, caused Thai EFL pre-service teachers to produce negative transfer due to <sup>48</sup> the first language and second language differences. Hence, they tend to produce errors when they produce English speech. The study by Dee-in (2006) revealed that Thai people usually produce errors in the following sounds <sup>6</sup> /g/, /tʃ/, /dʒ/, /v/, /z/, /ʒ/, /θ/, /ð/, /ʃ/ and the problems with vowel sounds were /i/, /ɪ/, /e/, /ə/, /u/, /ʊ/, /aʊ/, /eɪ / and /eə/. In addition, final sounds are frequently absent since the Thai language omits the final sounds. In suprasegmental aspects, it was found that Thai people face the problems of using stress and intonation since the Thai language is tonal, and the stress and intonation are different from English. Another factor that causes difficulty for Thai EFL pre-service learners is overgeneralization of the target language, which is concerned with learners' expanding or mixing some language rules of the target language (Richards, 1971).

From the reasons that obstruct EFL pre-service teachers from mastering English pronunciation ability, there have been various studies aiming at applying technologies to enhance pronunciation ability (Yoshida, 2018). Some research studies focused on <sup>15</sup> using computer-assisted language learning (CALL) to assist learners in observing and receiving native speakers' speech. Moreover, various applications for teaching pronunciation have appeared in this digital era, and those digital tools provide input for learners to understand the concepts and practice to give output. However, a great digital tool does not function well without a helpful teacher, peers, and feedback. Pokrivcakova (2015) suggested that the best way to apply digital materials is to have learners practice pronunciation skills in communicative exercises such as interactive exercises, simulating conversations, or peer-to-peer role-playing. From these viewpoints, it is explicit that blending digital tools in teaching pronunciation should be connected to interactive activities. Thus, in this research, the researcher would instead choose digital tools that provide interaction between students and teachers so that the corrective feedback would be helpful for pronunciation development.

Digital tools can be robust materials for language teachers. However, another efficient learning process used to boost oral skills is storytelling. Storytelling is an interactive communication between the teller and the audience. Notably, a storyteller will convey meaning entertainingly and interact with listeners. From this feature, storytelling is considered an authentic

task for learners since it provides learners with a real context of speaking (Lucarevski, 2016). Therefore, this study applied storytelling techniques to provide EFL pre-service teachers with opportunities to produce language in a meaningful context. According to Aruntharee (1999), storytelling techniques are divided as 1) telling stories by using the teller's voice only, 2) telling stories by using actions, 3) telling stories with pictures, 4) telling and drawing, 5) telling and singing, and 6) telling stories by using props. From these concepts, storytelling is not just memorizing a story and telling, but it is rather challenging for EFL pre-service teachers to deal with making their storytelling enjoyable. Moreover, storytelling is an excellent tool for language teaching, so pre-service teachers will practice telling stories in the classroom. Within the concept of storytelling, digital tools can also be integrated with storytelling to become digital storytelling, which is widely used to improve learners' four skills (Thang et al., 2014).

The key objective of this research is to assess the potential impact of digital tools and storytelling on the pronunciation abilities of Thai EFL pre-service teachers as well as analyzing their pronunciation errors produced before and after the intervention. Given their tendency to make pronunciation errors due to the interlanguage system, this study could significantly contribute to our understanding of how these tools can be used to enhance their pronunciation.

To investigate the effects of digital tools and storytelling on the pronunciation abilities of Thai EFL pre-service teachers, the following research questions have been formulated:

1. Is there a significant difference between the pronunciation ability before and after using digital tools and storytelling?
2. What errors do Thai EFL pre-service teachers produce before and after using digital tools and storytelling?
3. In what ways do digital tools and storytelling impact the pronunciation abilities of Thai EFL pre-service teachers?

## METHODOLOGY

### RESEARCH DESIGN

This study employed a mixed-methods approach, incorporating qualitative and quantitative data collection methods. A pre-experimental, one-group pre-test, and post-test design was utilized to explore the participants' progress in pronunciation ability.

## PARTICIPANTS

The research involved 34<sup>17</sup> Thai EFL pre-service teachers preparing for their teaching practicum in their teacher education program's fourth and final year. Purposive sampling was used to select the EFL<sup>7</sup> pre-service teachers who were to complete the last year of the study program by working in schools for their teaching practicum credits. All participants had completed the phonetics course in their second year. Among the participants, 30 were female, and 4 were male.

## RESEARCH INSTRUMENTS

This investigation utilized a set of five<sup>52</sup> research instruments, namely: 1) lesson plans, 2) a pronunciation test, and 3) learning logs. In order to elucidate the methodology for the data collection, the instruments were outlined below.

## LESSON PLANS

There were 8 lesson plans designed regarding the eight stories selected. The concepts of teaching integrate the pedagogical tasks that are standard parts of pronunciation teaching (Yoshida, 2018) to the steps of using storytelling in ELT classrooms (Wright, 1995) and storytelling techniques (Arunthari, 1999). Designing lessons began with choosing digital tools, choosing stories, scoping lesson plan components, and examining their validity and reliability.

Beginning with choosing digital tools, according to their usefulness, they were selected with the quality of providing students with rich input and activating them to analyze pronunciation and give feedback. To systematically choose digital tools, the researcher used the following criteria (Yoshida, 2018) to select the tools that could be put in the lesson plan. Those criteria are<sup>27</sup> appropriateness to learning objectives, quality and accuracy, practicality, and cost. Therefore, YouTube was selected to provide rich input from native speakers. Since it is authentic material, learners can access and watch a digital story told by a native speaker at their own pace.

Moreover, Padlet was used as a platform for discussion and interaction. Teachers can upload video links through the page. To elaborate, Padlet allows learners to share their opinions with various functions. It can help learners to share their findings and even learn the input at their own pace. Lastly, Seesaw was chosen as the platform for providing and sharing output, a

participant storytelling performance. Seesaw has a function that learners can do a video record via mobile and upload the video file immediately through the application. Learners can also provide comments and give feedback on their peers' pronunciation. These three digital tools are practical and cost-effective, as they are easy to use without any additional cost.

The next step before designing a lesson plan integrating digital tools and storytelling is identifying the content area. A needs analysis was conducted to seek the stories used as language input by the pre-service teachers. All 15 stories with synopses were surveyed through a questionnaire. Then, eight stories that had the highest scores were selected. Based on the problematic sounds, stress, and intonation found in the pre-service teachers' pronunciation, each story was analyzed to detect the features of pronunciation that provide the pre-service teachers to experience input and produce output for solving and improving their pronunciation. There were eight stories selected, namely, 1) Do You Speak English, Moon?, 2) There Was an Old Woman Who Swallowed a Fly, 3) Grandfather Bear is Hungry, 4) Jack and the Robber, 5) Squeaky Door, 6) Green Eggs and Ham, 7) It is a Squash and a Squeeze, and 8) The Little Engine that Could.

TABLE 1. An example of the story used and its pronunciation analysis

Title	Pronunciation Focus				
	Initial sounds	Final sounds	Vowel sounds	Stress	intonation
It's a Squash and a Squeeze	/θ/, /ð/, /p/,	/z/, /f/, /s/, /n/,	/i/, /u/, /ɔ/, /ə/,	Two-word stress;	Rising/falling
	/r/, /l/, /β/, /kr/,	/k/, /g/, /t/,	/e/, /ɛ/, /o/,	lady, tickle,	intonation
	/sq/, /gr/	final/-ed/,	/ɑo/	implore, heaven,	Ex;
		/tʃ/, /ʃ/, /ŋ/		grumbled	Take in my hen? What a curious plan!
			Three-word stress;	gigantic, enormous, happiness	

After identifying content areas, the learning objectives were determined according to the prominent pronunciation aspects, starting from sounds, stress, and intonation. Moreover, the teaching steps were designed by integrating teaching pronunciation with teaching storytelling. Before designing the content specification, the framework of the teaching model was created as a guideline.

8 According to Yoshida (2018), the pedagogical tasks used for teaching pronunciation are 1) providing a pronunciation model, 2) recording students' pronunciation practice, 3) collecting and responding to students' recorded practice, and providing independent pronunciation practice. These tasks were applied in teaching, integrating storytelling and digital tools. To design the steps of teaching, the researcher used the steps from Wright (1995), which are 1) pre-storytelling, 2) 28 While-storytelling, and 3) post-storytelling. In pre-storytelling, the teacher can use pictures and actions to activate students' background knowledge and pre-teach vocabulary. In while-storytelling, the teacher uses actions and voice 53 to encourage students to speak. In post-storytelling, the students retell the story, using their creativity to tell.

The teaching activities were then divided into three main stages to put everything together. In the first stage, the pre-storytelling started with a discussion of the title, characters, places, actions of the characters, and event prediction. The story's phonological analysis of phonological sounds, word stress, and intonation was presented, 14 analyzed, and discussed using an online dictionary and Padlet. Next, storytelling was given, and the EFL pre-service teachers analyzed the story and the techniques used to tell it. Moving to the next stage, the while-telling stage, the participants again watched a digital storytelling video clip from YouTube. They analyzed the sounds, stress, and intonation in the story. Then, they would practice telling the story in groups and provide peer feedback to their teammates. During the while-storytelling stage, the teacher coached the EFL pre-service teachers and gave corrective feedback. Lastly, in the post-storytelling stage, the participants performed their storytelling and used the Seesaw application to record a video and share it with their peers. The participants had to give self-feedback and peer feedback to encourage their peers through Seesaw. After completing one lesson, the participants wrote their reflections through Seesaw.

Developing content specifications and lesson plans was conducted due to the steps of teaching identified previously. Subsequently, the content specification and lesson plans 56 underwent a rigorous validation process involving three experts' assessments utilizing the item objective congruence index (IOC). Lesson plans attaining an IOC value falling within the range of 0.67 to 1.00 were deemed suitable for inclusion in the pilot study, reflecting a high degree of alignment with instructional objectives and content specifications. 7 Following the validation phase, the qualified lesson plans underwent trial implementation with a cohort of six EFL pre-service teachers excluded from the study sample. Feedback from this pilot phase facilitated iterative adjustments

to the lesson plans, ensuring refinement in line with instructional efficacy and participant needs. Specifically, modifications were made to the duration of lessons, with additional emphasis placed on extending the time allocated for video creation and sharing activities. Additionally, it was observed that providing corrective feedback during the practice phase of the while-telling stage was imperative. This adjustment was necessary as students exhibited difficulty in self-correction during the while-storytelling phase. Consequently, corrective feedback was integrated into the while-telling stage to address this deficiency effectively. The refined lessons were subsequently implemented with the actual study sample after these revisions.

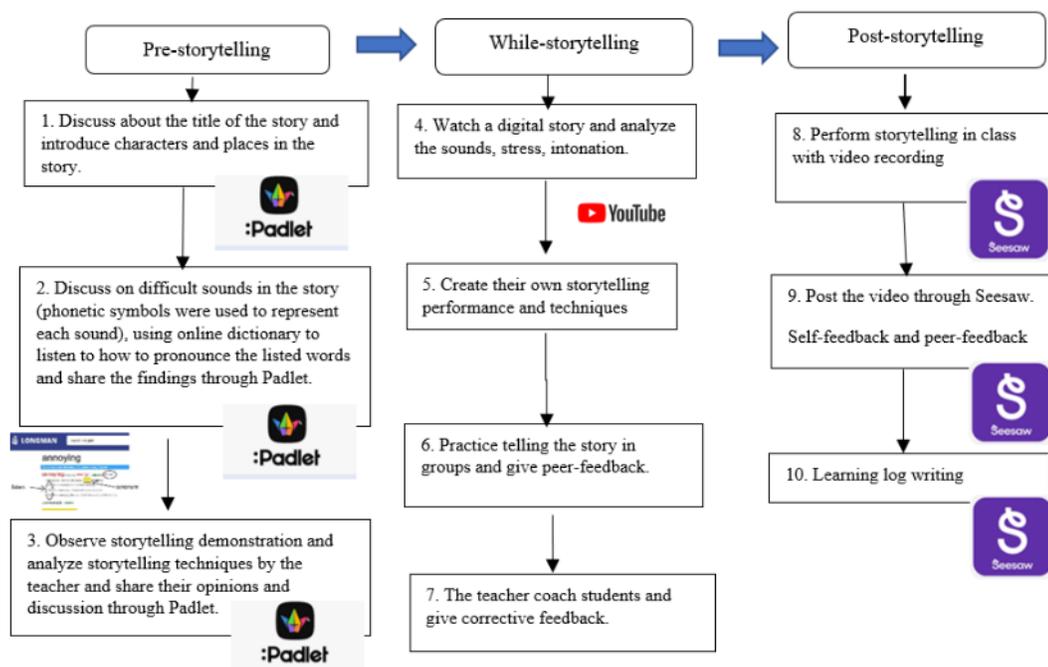


FIGURE 1. The model of the instruction, integrating digital tools and storytelling to enhance the pre-service teachers' pronunciation.

#### PRONUNCIATION TEST

The pronunciation test was developed by integrating elements from the pronunciation test devised by Gerhisier & Wrenn (2007), coupled with principles delineated in the design of pronunciation tests as elucidated by Brown & Abeywickrama (2019). Comprising six distinct sections, the test evaluated various aspects of pronunciation proficiency, including 1) initial consonant sounds, 2) final consonant sounds, 3) vowel sounds, 4) stress patterns in two-syllable

words, 5) stress patterns in three-syllable words, and 6) intonation patterns. Each section is worth 10 points, making 60 points for the whole test.

TABLE 2. part one test example; testing ability to produce sounds of initial consonants

Part 1: Testing initial consonant. Circle the sound that the test taker pronounces incorrectly.	Initial Sounds tested	Wrong sounds pronounced
Once, a <b>b</b> lacksmith had the most beautiful daughter. She was such a good daughter to him. He was so <b>p</b> roud. He <b>w</b> ished to wed her with the best male in the <b>u</b> niverse. "My daughter must have the best male in the universe as her husband!" said the blacksmith. One day, as he was pounding iron, he saw the <b>r</b> eflection of the sun. <b>T</b> hen, he looked up in the sky. Seeing the sun, he said, "the sun has sent the <b>b</b> rightest <b>l</b> ight to earth. So, I <b>t</b> hink he is the best male in the Universe. He will be my son in law. I will not <b>ch</b> ange my mind for <b>s</b> ure"	/b/, /p/, /t/, /l/, /br/, /v/, /w/, /tʃ/, /ʃ/, /θ/, /ð/	Score: ...../10

After designing the test specification, the pronunciation test was administered to three experts to validate the item objective congruence index and evaluate whether <sup>44</sup> the test items were relevant to the test objectives. The analysis result displayed an IOC value between 0.67-1.00, indicating an excellent value of IOC. The scoring method was conducted by listening to the test taker's pronunciation, with one point for each correctly pronounced sound marked in each part of the test. Test administration required participants to read aloud excerpts from stories individually, with an allotted 8–10-minute timeframe. Voice recordings of the test sessions were employed to facilitate subsequent verification of scoring accuracy, thus bolstering the reliability of test scoring.

Furthermore, the three experts <sup>51</sup> evaluated the test specifications <sup>45</sup> to ascertain the appropriateness of the test construct. Subsequently, the test was piloted with a cohort of EFL pre-service teachers excluded from the study participants. The pronunciation test scores from the pilot study were used to identify the discrimination index and reliability. As a result, the discrimination index of the pronunciation test for each section was between 0.36 and 0.68. The Kuder-Richardson Formula 20 (KR-20) was employed to achieve test reliability, and the analyzed data revealed a value of 0.932.

#### LEARNING LOG

Thai EFL pre-service teachers used a learning log to document their pronunciation problems, progress, reflections, and lessons learned for each instructional session. To prevent translation ambiguities and language barriers, each EFL pre-service teacher reflected on eight lessons and

their progress in Thai language, illustrating clearer expression and comprehension of their learning experiences across the duration of the 8-week intervention.

## 12 DATA ANALYSIS

Qualitative data from the learning logs were analyzed using coding and thematic analysis techniques. The coding schemes were 47 conducted to explore the themes that emerged from the learning logs. The framework used for the coding process started with familiarizing the texts, 13 generating initial codes, searching for themes, reviewing themes, defining and renaming themes, and discussing the emerging themes to answer the research questions (Braun & Clarke, 2006). The coding schemes were conducted in the pilot study before being applied in the main study. Two inter-coders participated to ensure the coding method's reliability and consistency. One of the coders was the researcher, and the other was a lecturer from an English program holding a doctoral degree in English language teaching. 9

The pre-test and post-test pronunciation scores were analyzed using a dependent samples t-test for quantitative data. Additionally, the Thai EFL pre-service teachers' problematic aspects in pronunciation 5 were analyzed using frequency and percentage.

## RESULTS

### RESEARCH QUESTION 1: DIFFERENCE BETWEEN THE PRONUNCIATION TEST SCORES BEFORE AND AFTER USING DIGITAL TOOLS AND STORYTELLING

The first question of this research considered whether digital tools and storytelling can improve pre-service teachers' pronunciation test scores. 24 To answer this first research question, the pre-test and post-test scores were used to compare the pre-service teachers' pronunciation before and after the instruction that integrated digital tools and storytelling were implemented. The total score for the pronunciation test is 60 points. 4

TABLE 3. The pre-test and post-test scores of the pre-service teachers (N=34).

Testing	Mean	SD	t	Sig.
Pre-test	28.00	5.10	15.93	0.0000
Post-test	40.50	6.30		

From Table 3, the average of pre-test score was 28.00 and the post-test score was 40.50. Therefore, there was a statistically significant difference between the pre-test and post-test score ( $p < 0.05$ ). It can be concluded that using digital tools and storytelling can effectively enhance Thai EFL pre-service teachers' pronunciation ability.

#### RESEARCH QUESTION 2: ERRORS PRODUCED BY THAI EFL PRE-SERVICE TEACHERS BEFORE AND AFTER USING DIGITAL TOOLS AND STORYTELLING

TABLE 4. Demographical variables of pre-service teachers' pronunciation problems. (N=34)

Types of Errors	Pre-test		Post-test	
	Frequency of mispronounced words	Percentage of mispronounce words	Frequency of mispronounced words	Percentage of mispronounce words
Initial sounds; bl/, /pr/, /r/, /l/, /br/, /v/, /w/, /tʃ/, /ʃ/, /θ/, / ð/	198	58.23	110	32.35
Final sounds; final/-ed/, /θ/, /f/, /z/, /ŋ/, /tʃ/, /ʃ/ /dʒ/, /v/	210	61.76	135	39.71
Vowel; /i/, /ɪ/, /e/, /ə/, /u/, /ʊ/, /aʊ/, /eɪ/, /ɔɪ/, /eə/	140	41.17	98	28.82
Two-syllable word stress	156	45.88	102	30.00
Three-syllable word stress	188	55.29	112	32.94
Intonation; rising and falling	196	57.65	105	30.88
<b>Total</b>	1,088	53.33	662	32.45

From Table 4, each type of error was analyzed by the pronunciation test consisting of 6 aspects: beginning sounds, final sounds, vowel sounds, two-syllable word stress, three-syllable word stress, and intonation. Each element contained ten testing spots, which included 60 points in total. Thirty-four participants were being tested. Hence, each aspect tested had 340 points. The most common issue found with errors was final sounds, which displayed 61.76% in the pre-test and 39.71% in the post-test. The last aspect found with errors was vowel sounds, with 41.17% errors on the pre-test and 28.82% on the post-test.

For the beginning sounds, the participants read aloud an excerpt of a story with these sounds tested: bl/, /pr/, /r/, /l/, /br/, /v/, /w/, /tʃ/, /ʃ/, /θ/, / ð/. The pre-test indicated that the participants had problems producing the words blacksmith, proud, universe, brightest, light, change, and think as the beginning sounds tested. The participants mostly dropped the /r/ and /l/ sounds in the clusters. They would say /'bæk.smɪt/ instead of /'blæk.smɪθ/. In addition, they often pronounced /l/ instead of /r/. Interestingly, the participants also replaced /θ/ and / ð/ with the letter

sound of their native Thai language. However, the errors decreased after exposure to the intervention, as seen in Table 4.

As for the final sounds tested (final/-ed/, /θ/, /f/, /z/, /l/, /ŋ/, /tʃ/, /ʃ/ /dʒ/, /v/), the results showed that all the digraphs and the final /-ed/ were the most errors found. For instance, in the word “walked” (/wɑ:kt/), the participants pronounced /wɑ:kɪd/. They also dropped the final sounds when they read aloud a story. For example, they pronounced “touch” (/tʌtʃ/) with a silent final sound as /tʌt/ but unpronounced the /t/ sound.

Moving to the vowel sounds, the most problematic sounds that they produced were/aʊ/, as in the words “bouncing” and “grouch” (/graʊtʃ/). They pronounced those words as /'bʌnsɪŋ/ and (/grɑ:ʃ/). Additionally, for some words that were spelled with -ew, the participants tended to say /ɪw/ instead of /u:/. As found in the phrase “grew,” the participants pronounced /grɪw/ instead of /gru:./

Two-syllable and three-syllable stress were tested to state the problematic aspects of pronunciation in the suprasegments. It was revealed that the participants emphasized <sup>35</sup> three-syllable words more incorrectly than the two-syllable words. As in the word “marvelous,” they tend to stress the second or final syllables. Most of them emphasized the first syllable when pronouncing two-syllable words. However, some of the two-syllable words were not stressed on the first syllable, like the words “because” and “perhaps.” They tended to pronounce <sup>16</sup> /'bɪkɑ:z/ and /'pə'hæps/. Moreover, Thai EFL pre-service teachers mostly stressed the final syllable of two- and three-syllable words with loud and long stress as they stressed in the Thai language. For instance, in the word “happy,” they stressed the second syllable with prolonged stress, sounding like /'hæ'pi:/. For intonation, the participants were likely to drop the rising intonation in the Yes/No questions. For example, in the sentence “Do you speak English, moon?” most did not raise their voice at the end. They instead said, “Do you speak English, moon?” without the rising pitch.

<sup>18</sup>  
RESEARCH QUESTION 3: THE IMPACTS OF DIGITAL AND STORYTELLING IN THE EFL PRE-SERVICE TEACHERS' PRONUNCIATION ABILITY

The data collected from learning logs after being coded, the six emerging themes were found as 1) phonological awareness, 2) confidence increases, 3) positive learning motivation, 4) pronunciation improvement, 5) pronunciation teaching application, and 6) self-directed learning.

#### PHONOLOGICAL AWARENESS

Analysis of the learning logs revealed that EFL pre-service teachers demonstrated an improved ability to differentiate incorrectly pronounced sounds following practice and corrective feedback. Several participants noted their efforts to control final sounds, recognizing that incorrect pronunciation could alter the meaning of words. Additionally, they learned that some sounds were pronounced differently from the rules they had previously learned. Some participants reflected on the necessity of consulting dictionaries to ensure accurate pronunciation. The learning logs also indicated that pre-service teachers identified and attempted to address their problematic sounds, particularly those aspects of pronunciation absent in Thai. This improvement was further evidenced by their ability to subconsciously correct their peers' mispronunciations and self-correct during storytelling activities. Participants frequently repeated mispronounced words upon recognizing their errors, illustrating enhanced phonemic awareness and self-monitoring capabilities as demonstrated as follow:

“I need to control my final sounds because I tend to drop them. I know that this could change the meaning of those words. When I watch my video clips, I realized that I have a problem with /r/ and /l/ since we don't have them in our language”

#### CONFIDENCE INCREASES

The learning logs <sup>3</sup> of the Thai EFL pre-service teachers revealed a notable increase in their confidence levels. Initially, participants reported nervousness and shyness about performing storytelling activities, primarily due to their lack of experience and limited opportunities to speak English daily. They also expressed concerns about their pronunciation, reflecting on their previous phonetics course, which needed more practical application. However, viewing their storytelling performances on the Seesaw platform allowed them to observe their progress. This reflective practice significantly boosted their confidence, reassuring them of their ability to conduct storytelling and guide students effectively during their teaching practicum. As mentioned by the Thai EFL pre-service teachers' reflection:

“After practicing storytelling and record my performance, I became more confident little by little. It seems I have a chance to apply what I learned in the real context.”

#### POSITIVE LEARNING MOTIVATION

The Thai EFL pre-service teachers' learning logs indicated a positive emotional response to the lessons. They reported enjoying the sessions and finding the storytelling activities engaging and entertaining. The digital tools employed in the instruction were particularly well-received, as these platforms facilitated the sharing of ideas and the practice of analytical thinking. The participants noted that these tools enhanced their engagement and enjoyment, especially when reading feedback and words of encouragement from their peers, which fostered a sense of enthusiasm for class participation. The participants also wrote in their learning logs that they were eager to learn about upcoming stories and expressed a keen interest in receiving corrective feedback, as they were motivated to improve the quality of their storytelling. Some even suggested creating elaborate videos with realistic settings for making movies. This demonstrated their enthusiasm and active involvement in learning and practicing pronunciation.

“It was so much fun to get to listen to a story and try to perform it by myself. I also like when the teacher used Padlet dashboard to get us share our opinion after analyzing sounds and stress in each story. I had to think a lot and became active learner.”

#### PRONUNCIATION IMPROVEMENT

The EFL pre-service teachers' learning logs documented notable progress in their pronunciation skills. By identifying their problematic pronunciation aspects, such as specific sounds, stress patterns, and intonation, the participants actively worked to address and improve these areas. They reported an increase in speech fluency over time. Several pre-service teachers compared their initial video recordings to their most recent ones, expressing pride and satisfaction with their progress.

“I think my pronunciation is getting better. I can overcome my weakness on pronouncing /r/. I know that we don't have this sound in our language. However, I could manage to get rid of this problem after getting feedback and keeping practicing. I could finally coach my friend to be able to solve the same problem”.

#### SEFL-DIRECTED LEARNING

Using digital tools and storytelling, the Thai EFL pre-service teachers reflected on their commitment to practicing pronunciation outside class hours. They reported engaging in self-

directed practice sessions and exploring additional storytelling content on platforms like YouTube when they had time out of their learning schedules. Some participants identified supplementary applications offering pronunciation improvement games, recognizing the importance of serving as effective language models for their friends. Moreover, several Thai EFL pre-service teachers demonstrated a spirit of collaboration by sharing instructional videos on pronunciation improvement via the Seesaw platform, thereby facilitating peer learning. Many expressed their intent to continue practicing pronunciation independently, even after completing the eight lessons. They acknowledged the value of sustained practice in honing their pronunciation skills, having gained insights into effective pronunciation strategies during class sessions. This collective commitment to ongoing practice underscores their recognition of the correlation between diligent practice and eventual proficiency attainment.

“Using digital tools is a good way to learn English. I could listen to English whenever I have free time. Also, I could share a learning tool with my classmates. I could even see my storytelling performance and try to fix it before sharing with my classmates.”

## DISCUSSION

To address <sup>15</sup> the first research question, the analysis of results <sup>17</sup> indicates a notable enhancement in the pronunciation <sup>17</sup> ability of the EFL pre-service teachers after the intervention. A marked increase <sup>30</sup> in post-test scores compared to pre-test scores was observed, suggesting a significant improvement in pronunciation ability. This study's findings are relevant to Lucarevschi (2018), who similarly observed the pronunciation skills of EFL learners while implementing storytelling. Lucarevschi's research demonstrated higher post-test pronunciation scores than pre-test scores, thus corroborating the outcomes of the present study. Additionally, this outcome underscores the efficacy of digital tools and storytelling methodologies, which allow learners ample opportunities to engage with language input and output. <sup>38</sup> This finding is consistent with prior research, notably the work of Blake (2013), which highlights the capacity of digital tools to facilitate personalized and effective avenues for improving pronunciation among L2 learners.

For the second research question, analyzing the English pronunciation of Thai EFL pre-service teachers, the problematic beginning and final sounds found <sup>49</sup> in the pre-test and post-test indicated that they substituted English sounds with their native letter sounds when they came

across sounds that did not exist in the Thai language. This complied with Selinker (1972), who proposed that language learners tend to have their own L2 language system during learning. It was revealed that language transfer was essential since the Thai alphabet system differs from English. As a result, the Thai EFL pre-service teachers were likely to use /w/ instead of /v/ and /t/ instead of /θ/ since the Thai alphabet system does not have those sounds. Significantly, they tended to omit final sounds due to the unpronounced final sounds of the Thai language (Tangtorrith & Pongpairaj, 2022).

Furthermore, overgeneralization is one of the reasons for mispronunciation, especially when people learn sound rules and try to apply them in every situation (Selinker, 1972). As found in the final /-ed/ pronunciation, Thai EFL pre-service teachers tended to pronounce /ɪd/ when pronouncing words ending with -ed (Limsangkass, 2009). Moreover, they created their sound systems, such as saying /grɪw/ instead of /gru:/ since they knew that /ɪ/ is a short vowel when being combined with other final consonants such as /t/, /n/, and /d/ in words "sit," "pin," and "kid." Hence, they would pronounce the word "grew" as /grɪw/, which is not the correct way to pronounce it.

Apart from segmental elements of phonemes, the suprasegmental aspects, such as stress and intonation, were also found problematic. Based on Isarankura (2018), the stress of the Thai and English languages is considered counterparts since Thai has loud and long stress in a polysyllabic word, especially the emphasis on the final syllable. From this point, Thai EFL pre-service teachers tended to put stress on the final syllable. Some other cases are found in incorrect emphasis based on overgeneralization. Since word classes can formulate stress rules, the common two-syllable nouns and adjectives have stress on the first syllable. Hence, Thai EFL pre-service teachers usually stress the first syllable, although some two-syllable words are noted on the second syllable, like the words "because," "perhaps," and "and permit," for example. The results aligned with Isarankura's (2018) study, which discussed the transfer of L1 on L2 pronunciation in terms of emphasizing the last syllable with the entire length.

To elaborate on the effects of digital tools and storytelling on enhancing EFL pre-service teachers' pronunciation, the concepts of explicit and implicit knowledge, input, interaction, output, and corrective feedback play an essential role in the pronunciation learning process. This study employed storytelling told by storytellers through face-to-face and digital tools. In the pre-storytelling stage, pronunciation analysis was discussed. To become successful in learning pronunciation, the ability to differentiate the sound differences is essential (Foote & Trofimovich,

2018). Therefore, explicit learning through phonological analysis before access while storytelling, identifying sounds, stress, and intonation led Thai EFL pre-service teachers to be able to observe storytelling from YouTube, their peers, and themselves. Since they practiced analyzing pronunciation in both segmental and suprasegmental aspects, this provided them with explicit knowledge with awareness or intention to discover concepts or rules in which the language is formed (Suzuki, 2017). In the while-storytelling, the participants observed storytelling and practiced it before sharing it with their peers in the post-storytelling stage. From conscious to unconscious learning, receiving input and practicing producing output can lead them to procedural knowledge driven by implicit knowledge, which occurs naturally without referring to input processing or intention (Ellis et al., 2009). The process of implicit knowledge can be activated by frequently practicing in a natural setting until the learners reach automatization (Gass et al., 2020). From this viewpoint, Thai EFL pre-service teachers became more fluent and natural in pronounced English sentences.

In terms of language output, digital tools, and storytelling, they offered Thai EFL pre-service teachers the opportunity to share their output, which is their storytelling. Based on (Brown, 2001), storytelling can be used as interactive tasks where students can act out, recite long monologs, exchange information, etc. From these features, storytelling can be applied as activities for language producing or output provided Thai EFL pre-service teachers with practicing pronunciation through their storytelling performances both on the stage and in a video shared through the Seesaw application, enabling them to notice their pronunciation and adjust the errors. This was aligned with Swain (1995), who postulated that learners can find gaps between the target language and learn how to develop their language further through language output. This process leads them to check their assumption about their pronunciation rules by checking their pronunciation from retelling a story.

Storytelling can provide learners with interaction as it is a communication process between storytellers and listeners (Tifani et al., 2020). Also, digital tools can allow learners to access the input and share their output. In this case, both tools provide opportunities for interaction. According to Mackey, Abbuhl, and Gass (2012), the interaction approach accounts for learning through input by exposure to the language and through the output or the production of language and feedback resulting from the interaction. In this case, learners negotiate, adjust, recast, and receive or give feedback, leading to language development. In storytelling practicing and

performing telling a story, Thai EFL pre-service teachers received input, which is a story from YouTube told by native speakers, and also learned storytelling techniques such as using questions, eliciting the listeners to say the next part of the story, asking them to be part of the story. After that, they practiced telling their stories by adding techniques to their storytelling before performing their stories to their peers. As seen from the interaction through storytelling, Thai EFL pre-service teachers adjusted their pronunciation and repeated some words that their friends did not understand. During the practice, they also learned to add some techniques to make their friends comprehend their stories more.

Feedback also played a vital role in this study since Thai EFL pre-service teachers received corrective feedback from the instructor, and they had to give self-feedback and write down their errors or difficulties in a learning log. Learning from feedback, they could notice what they lack and try to reduce the problematic issues in their pronunciation. Later on, they possessed the ability to give peer feedback since they learned from the instructor and used the problem found to suggest their friends and how to overcome the problems. It was proposed that feedback is **an intervention where the learner is provided with information about their utterances. It is specific, evidence-based, and actionable concerning an L2-targeted production to further pronunciation development** (Gass, 2013; Wiggins, 2012).

**To answer the third research question**, the extent of **the impacts of digital tools and** storytelling on the Thai EFL pre-service teachers' pronunciation ability, the findings revealed six features, which were 1) phonological awareness, 2) confidence increases, 3) positive learning motivation, 4) pronunciation improvement, and 5) self-directed learning. The five features found were discussed as follows.

In discussing phonological awareness, Thai EFL pre-service teachers revealed the ability to distinguish between sounds and identify their problematic areas. This aligned with the noticing hypothesis proposed by Schmidt (1994), which stated that second language acquisition (SLA) learners can effectively monitor language when they consciously attend to input. In this study, participants engaged in activities that involved the analysis of sounds, stress patterns, and intonation while receiving and providing feedback to peers through digital tools and storytelling. According to Celce-Murcia, Brinton, & Goodwin (2010), learners can benefit from recording and listening to their pronunciation. From this point, learners can attain self-correction abilities, leading to pronunciation skill refinement. As a result, Thai EFL pre-service teachers could reduce the

errors or difficulty in producing pronunciation issues of sounds that do not exist in their native language and notice their errors, leading to repetitive practice until they have better pronunciation.

From the perspective of Thai EFL pre-service teachers, their confidence levels had increased due to the continuing practices through digital tools and storytelling. They experienced personal practice and self-observation in actual storytelling performances. This enhanced confidence can be explained by the fact that Thai EFL pre-service teachers had the frequent opportunity to refine their skills and receive feedback on their performances before sharing their videos, leading to confidence to perform and share their storytelling. This finding complied with Lucarevschi (2016), who suggested that learners can benefit from opportunities to practice speech by retelling a story within natural contexts. Hence, their confidence in speech production increased.

The Thai EFL pre-service teachers became more enthusiastic about the lessons using digital tools and storytelling and had positive feelings toward the activities. These drove them to be motivated to learn and practice more since the digital tools engaged them to learn and practice. This result went in the same direction as the study of Haryadi and Aprianoto (2020), which revealed that digital technology tools could engage learners and motivate them to learn. In addition, the EFL pre-service teachers expressed their opinions toward expected pronunciation improvement and enjoyed the practice stage since storytelling created interaction. The emergence was in line with Sharma (2018), who postulated that a storytelling activity could increase motivation and reduce anxiety in language learning. Furthermore, storytelling encourages learners to practice English speaking both inside and outside classrooms (Difuzza, 2021). Both digital tools and storytelling motivate learners to learn and practice pronunciation. Additionally, digital tools are considered the motivation, learning autonomy, and creativity accelerators (Hafner & Miller, 2015).

Regarding pronunciation improvement, the Thai EFL pre-service teachers reported their progress and improvement since they were more aware of pronunciation aspects through phonological analyzing activity and giving self-feedback, peer feedback, and receiving corrective feedback from the teacher. This helped them be mindful of reducing language transfer and producing correct ones. As proposed by Ferguson (2011), it is necessary for learners' development if they are provided with feedback since it can lead learners to monitor, evaluate, and regulate their learning. Furthermore, storytelling provides rich, comprehensible input and interactive output in a

realistic context, activating them to keep practicing inside and outside the classroom. According to Wang & Castro (2010), comprehensible input through listening and reading can help improve speaking fluency.

Lastly, based on <sup>14</sup> the results of the learning logs, the EFL pre-service teachers tried to practice their pronunciation through storytelling <sup>3</sup> both inside and outside the classroom. They also explored other digital tools to receive more language input and shared other digital learning resources with their peers. They would prefer to continue improving their English despite the lessons ending. <sup>54</sup> Relating to the concept of self-directed learning, the learning process is performed <sup>41</sup> by individuals to achieve their knowledge on their own, to serve their own needs, select the learning strategies, and choose their learning materials (Knowles, 1975). With the support of <sup>5</sup> digital tools and storytelling activities, EFL pre-service teachers use various digital tools and online resources to perform their learning beyond the classroom context, which is considered formal learning (Sundqvist & Sylvén, 2016). Additionally, the lessons using digital tools and storytelling provide an opportunity <sup>21</sup> to recognize and assess their learning and reflect on what they have learned critically, thus leading them to develop their self-directed learning (Acar et al., 2015).

## CONCLUSION

<sup>25</sup> This study aimed to explore the effects of digital tools and storytelling on the pronunciation abilities of the participants who were Thai EFL pre-service teachers. It was found that some challenging aspects that Thai EFL pre-service teachers usually mispronounced were reduced, making the post-test score higher. After analyzing the results, the errors they pronounced aligned with the concept of the interlanguage system, which focuses on language transfer and overgeneralization. Thai EFL pre-service teachers still produced some common mistakes after the intervention, although those mistakes have been reduced.

This study offered insights to improve English language learners' pronunciation and reduce negative language transfer and overgeneralization by providing comprehensible input, interaction, output, and feedback. In this study, digital tools and storytelling worked as input processes, presenting comprehensible input for learners to intake. The more they hear or come into contact with the target language, the better pronunciation they will acquire. Moreover, explicit instruction

is provided for learners to apply the input throughout language production for pronunciation development. Therefore, in the pre-storytelling stage, the session for phonological analysis was conducted. In addition, based on the output hypothesis, the output is another essential process to help learners apply their internalized knowledge to improve accuracy and fluency. Importantly, the output is a process that can help learners transfer their expertise to active mode, allowing them to notice their language level in a while and post-storytelling stage. Through interaction, input and feedback are provided to learners, who observe the language while receiving input and providing output, facilitating them to activate both explicit and implicit knowledge. Since digital tools and storytelling create the settings for input, interaction, and output processes from the pre-storytelling, while-storytelling, and post-storytelling stages, they enhanced Thai EFL pre-service teachers' pronunciation abilities.

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