

The Development of Thai L1 Grade 4 Students' Spelling Skills Using the Integrated Explicit Instruction and Metacognition Exercises

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Abstract

The purposes of the current study were 1) to investigate the effectiveness of the integrated explicit instruction and metacognition exercises on Thai L1 grade 4 students' spelling skills, 2) to compare Thai L1 grade 4 students' spelling skills before and after using the integrated explicit instruction and metacognition exercises, and 3) to study students' satisfaction toward the integrated explicit instruction and metacognition exercises. The participants were 42 4th grade primary school students in Thailand selected by the purposive sampling method. The instruments were a set of spelling exercises designed using the integration of explicit teaching and metacognitive instruction, a pre-posttest, and a questionnaire. The data were analyzed using percentage, mean score, standard deviation, a paired samples t-test, and the effectiveness index with the criterion of 80. The results of the study indicate that 1) the effectiveness of the integrated explicit instruction and metacognition exercises on Thai L1 grade 4 students' spelling skills was at 84.57/83.97 reaching the criteria of 80, 2) the students' score after learning with the integrated explicit instruction and metacognition exercises was significantly higher than students' score before the treatment at a statistical level of .05, and 3) students' satisfaction toward the integrated explicit instruction and metacognition exercises was at a very high level ($\bar{x} = 4.53$, S.D. = 0.52). The result of the study could be implicated in

both pedagogic and academic aspects.

Keywords: Spelling instruction, Metacognition instruction, Thai language teaching

1. Introduction

Learning to create written output is one of the essential tasks for students at the early stage of their educational paths. Spelling is the first gate to writing as learners are instructed to learn a written language system in which components like consonants, vowels, and tones are used to construct words and represent meaning (Nunes & Bryant, 2006). Once the spelling ability is acquired, learners of a language start to communicate in written mode using such mediums as sentences, paragraphs, essays, reports, dissertations, etc. Therefore, spelling benefits learners' education as it is a fundamental skill leading to success in courses throughout the education path.

However, learning to spell is not an easy task. Especially for young learners who have just acquired an L1, the complication of language might be confusing. According to Varshney (2003), the natural order of L1 acquisition starts from exposure of a spoken language to the control of language uses in daily life. A child might start babbling, imitating their caretakers, learning word meaning, and using the words in communication. Nevertheless, in learning spelling, students need to develop knowledge of the linguistic system. Words used in daily life are substituted by symbolics such as alphabets and numbers. Therefore, it is a burden for students to learn how these signs operate to form words and sentences, and it is not a surprise that spelling ability becomes one of the crucial problems for young students (Holmes & Davis, 2002).

Moreover, the problem of young learners' spelling ability also depends on the complexity of the language. In the Thai context, the students are put in a more difficult situation due to the complicated system of their L1 spelling system. To illustrate, the Thai language is in the Kra-Dai language family. Words derived or borrowed from Pali, Sanskrit, Mon, and Old Khmer account for over half of its vocabulary (Noss, 1964). Therefore, students learning Thai have to develop a great size of vocabulary knowledge. Furthermore, different alphabets can account for the same final consonant sounds. The students consequently need to remember the specific alphabets used in the spelling of the words they used in the sentence. These complication results in students' errors in spelling and problems in the Thai language teaching context (Chuapetch & Klaimongkol, 2018).

It could be seen that teaching students to spell become a great challenge for teachers especially ones with young learners who are at the beginning stage of their educational path. According to Kemper, Verhoeven, and Bosman (2012), explicit instruction could not be avoided in teaching primary school students. They need to understand language regulations and use them repeatedly and comprehensively to acquire the skills. However, explicit instruction practiced among teachers in the Thai context could not lead to the desired results of Thai students' learning achievement. In learning such a language with complex and flexible rules as the Thai language, students could still be confused and fail to spell words correctly. Therefore, an alternative instructional method could be applied in the classroom to

improve the situation.

Teaching students to use learning strategies is one of the effective methods in improving both learners' learning behaviors and learning achievement. According to Gu and Nguyen (2013), strategy-based instruction relies on the explicit teaching of learning techniques that could establish a desired practice in learning that helps them acquire knowledge, skills, and concepts instructed in the class. One of the effective learning strategies used in strategy-based instruction is metacognition—the awareness of one's thoughts in learning. Learners with a metacognitive learning strategy could control the processes of thinking while learning and understanding patterns behind them (Flavell, 1979). Therefore, the instruction of metacognitive strategy could help learners understand the processes of spelling and language regulations used in each process which could lead to learning achievement. With these rationales, the current study integrated metacognitive instruction to explicit instruction of Thai language spelling and proposed 2 purposes of the study including 1) to investigate the effectiveness of the integrated explicit instruction and metacognition exercises on Thai L1 grade 4 students' spelling skills, 2) to compare Thai L1 grade 4 students' spelling skills before and after using the integrated explicit instruction and metacognition exercises, and 3) to study students' satisfaction toward the integrated explicit instruction and metacognition exercises.

2. Literature Reviews

2.1 Ending Consonants in the Thai Language

As mentioned, the complexity in the spelling system in the language varies the difficulties of spelling instruction. In this case, ending consonants in spelling in the Thai language can be a great impact leading to problems in Thai language classrooms (Chuapetch & Klaimongkol, 2018). In detail, 44 alphabets provide 21 sounds in the Thai language. 8 sounds called *mātrā* including no sound can be used as ending. What makes it more complicated is the fact that 4 out of 8 sounds can be produced by different alphabets. In detail, the ending sound of “k” can be provided by the alphabets /ก/, /ข/, /ค/, and /ฆ/; “t” can be provided by the alphabets จ /ต/, /ด/, /ถ/, /ท/, /ธ/, /ฏ/, /ฏ/, /ฑ/, /ฒ/, /ช/, /ช/, /ศ/, /ษ/, and /ส/; “p” can be provided by the alphabets /ป/, /ป/, /พ/, /ภ/, and /ฟ/; “n” can be provided by the alphabets /น/, /ณ/, /ญ/, /ร/, /ล/, and /ฬ/. To demonstrate, the word “การ” and “กาล” are pronounced both “Khan” as the alphabets /ร/ and /ล/ are in the same *mātrā* producing the ending sound of “n”. However, the two words are different in meaning and as “การ” can be translated as the state of being while “กาล” can be translated as time. This complicated ending consonant system could confuse learners especially ones in primary schools where they transform from acquiring L1 naturally to learning language system. According to Phapor (2019), word ending is one of the common

mistakes found in young learners of the Thai language as they have to comprehend the system and remember specific ending consonants of each word as it can change the meaning of the word completely. The ending consonant system is the focus of spelling skills in the current study.

2.2 Metacognition

Metacognition can be defined as the awareness, knowledge, and thinking about one's cognitive processes and strategies (Flavell, 1979). Harris, Graham, Brindle, and Sandmel (2009) indicate that learners with cognitive awareness can monitor their cognitive processes. For example, learners with cognitive awareness understand the structure of a sentence, the meaning of words used in it, and the function of each sentence component while writing it. To acquire metacognition, one should have declarative knowledge—knowledge about oneself as a learner; knowledge, skills, and strategies needed to accomplish a task, procedural knowledge—knowledge about how the task has to be performed, and conditional knowledge—knowing the application of knowledge in different situations (McCormick, 2003). Instruction of metacognition could be potential in developing students' Thai language ending consonant spelling skills. Learners with metacognition can control their processes of spelling learning. They are aware of *mātrā* that is being used, the alphabet that is account for the word they are spelling, and the meaning of the word.

It could be noted that strategies in learning are important in developing metacognition. However, learners at a young age tend to poorly use learning strategies (Graham, 1983). Therefore, explicit instruction of learning strategies could be an alternative to develop both effective learning behavior and skills. The instruction of learning strategies is also found in the development of spelling instruction. For example, Kernaghan and Woloshyn (1995) found that spelling strategies could be learned by even first-grade students, and they led to the development of spelling skills. Paffen and Bosman (2005) found that developing learning strategies of careful listening of words, segmenting words into syllables, and deducing spelling rules were beneficial in developing learners' spelling ability. Cordewener, Hasselman, Verhoeven, and Bosman (2018) applied metacognitive strategy instruction to teach Dutch 9 years old learners and found that the participants made more progress in spelling performance and became more accurate at assessing which words they could spell correctly. Likewise, Alshahrani (2019) applied reading strategies, story book reading strategies, memorization strategies, CCC strategies, and writing strategies to improve English vocabulary and spelling in the classroom for ELL, ESL, EO and LD students in the US. It was found that the strategies are effective for enhancing vocabulary and spelling skills of students who are ESL, EO-speakers, and/or have learning disabilities.

It could be seen in the previous studies that strategies-based instruction could bring about metacognition and the development of spelling skills. The current study aims to integrate metacognitive instruction with the explicit instruction of the Thai language ending consonant to develop grade 4 students' spelling skills. The research questions are 1) to what extent does the integrated explicit instruction and metacognition exercise improve Thai L1 grade 4 students' spelling skills? 2) Are there any differences between Thai L1 grade 4 students'

spelling skills before and after using the integrated explicit instruction and metacognition exercises? and 3) What is the students' satisfaction toward the integrated explicit instruction and metacognition exercises?

3. Methodology

3.1 Participants

The participants were 42 grade 4 students in a primary school in Thailand. Purposive sampling was employed in the sample selection. The students studied the Thai language subjects with the content related to spelling using irregular ending consonants. All of the participants were L1 Thai students with no background learning in international schools or another language context. None of the participants has learning disabilities. All the participants were treated anonymously.

3.2 Instruments

The instruments were 1) A set of metacognition exercises for developing Thai L1 students' spelling ability, 2) a pre-posttest on students' spelling ability learning achievement, 3) A satisfaction questionnaire. In detail, the metacognition exercises were designed in the integration of explicit teaching of spelling regarding ending consonants in the Thai language and explicit teaching of metacognition ability. The regulations of the spelling system and practice exercises are given to the students. The students were also asked to remind themselves of what *mātrā* is being used, the alphabet that is account for the word they are spelling, and the meaning of the word. The exercises are included in 4 lesson plans taking 10 hours. The exercises were rated at a very high level ($\bar{x} = 4.72$) in the evaluation process. The pre-posttest consists of 30 multiple choice items with the index of item objective congruence (IOC) of 0.67-1.00, index of difficulty of .38-.68, and the index of discrimination of .40-.89. The test was used to compare students' learning achievements before and after using the exercises. The satisfaction questionnaire consists of 10 positive statements regarding learning using the metacognition exercises. The index of item objective congruence (IOC) was at 0.67-1.00.

3.3 Data Analysis

The data were analyzed using percentage, mean score, standard deviation, paired-samples t-test, and the effectiveness index (E_1/E_2) calculated by analyzing students' performance during learning with the exercises (E_1) and students' performance after learning with the exercises (E_2). The criteria for the effectiveness index were set as 80%.

4. Results

4.1 To What Extent Does the Integrated Explicit Instruction and Metacognition Exercise Improve Thai L1 Grade 4 Students' Spelling Skills?

Table 1. The effectiveness of the integrated explicit instruction and metacognition exercise on Thai L1 grade 4 students' spelling skills?

	Full marks	\bar{x}	S.D.	%
Process effectiveness (E_1)	100	84.57	5.47	84.57
Outcome effectiveness (E_2)	30	25.19	2.18	83.97
Effectiveness Index (E_1/E_2) 84.57/83.97				

The result of the study indicates that the average score of students in doing exercises during the use of the integrated explicit instruction and metacognition exercise was 84.57% ($\bar{x} = 84.57$, S.D. = 5.47) of the full score. Moreover, students' average score after learning with the developed exercise was 83.97 % ($\bar{x} = 83.97$, S.D. = 2.18). Therefore, the effectiveness index of the integrated explicit instruction and metacognition exercise on the participants' spelling skills was 84.57/83.97 reaching the criteria set as 80. It could be interpreted that the participants could develop their spelling skills by practicing the exercises designed with the integration of explicit instruction and metacognition instruction.

4.2 Are There Any Differences between Thai L1 Grade 4 Students' Spelling Skills before and after Using the Integrated Explicit Instruction and Metacognition Exercises?

Table 2. the comparison between the participants' spelling skills before and after using the integrated explicit instruction and metacognition exercises

Test	n	\bar{x}	S.D.	df	t	Sig.
Pretest	42	20.12	1.48	41	28.97*	0.00
Posttest	42	25.19	2.18			

The result of the study indicates the improvement of the participants' spelling skills after using the integrated explicit instruction and metacognition exercises. A paired samples t-test shows that the students' score after learning with the integrated explicit instruction and metacognition exercises ($\bar{x} = 25.19$, S.D. = 2.18) was significantly higher than students' score before the treatment ($\bar{x} = 20.12$, S.D. = 1.48), $t = 28.97$, $p = 0.00$. It could be interpreted that

the developed exercises positively affected students' spelling skills.

4.3 What Is the Students' Satisfaction toward the Integrated Explicit Instruction and Metacognition Exercises?

Table 3. The participants' satisfaction toward the integrated explicit instruction and metacognition exercises

No.	Statement	\bar{x}	S.D.
1	The purposes of the instruction are clear.	4.57	0.55
2	The instructional activities are related to the purposes of the instruction.	4.52	0.51
3	The instruction content is comprehensible.	4.62	0.49
4	The exercises courage me to check my understanding of the concept of Thai language spelling.	4.45	0.50
5	The teacher's instruction helps me develop my knowledge of Thai language spelling.	4.57	0.50
6	The exercises encourage class interaction.	4.76	0.43
7	The exercises encourage me to take control of my learning.	4.17	0.58
8	The exercises encourage me to think more carefully in spelling.	4.67	0.48
9	The exercises raise awareness of learning.	4.57	0.50
10	Monitoring the processes of spelling encourages me to learn more.	4.43	0.50
Overall		4.53	0.52

The result of the study indicates that the students' satisfaction toward integrated explicit instruction and metacognition exercises was at a very high level ($\bar{x} = 4.53$, S.D. = 0.52) overall. In detail, students rated the positive statement regarding the exercises at either a high or a very high level. The participants agree that they were satisfied by the explicit instruction of the spelling rules. The exercises helped them deconceptualize knowledge into practice. Moreover, practicing metacognition helped them learn to control their learning and develop their spelling skills.

5. Discussion

The results of the study indicate that the integration of explicit instruction and metacognition instruction is beneficial in developing Thai L1 learners' spelling skills. It could be noted that the participants could improve spelling skills during the semester as well as the end of the treatment. Comparatively, the participants' performances after the treatment were superior to those of the pretest. It could be implied that explicit instruction is important in instructing spelling skills for young learners. In official education, skills acquired naturally are explained from an academic point of view. Sounds are substituted by signs, and the regulations of the

substitution system make it difficult for learners to understand. At this point, explicit instruction could be a beneficial intervention. Explicit instruction would open an opportunity for young learners to compare the language used in daily life and how to be expressed through texts (Kemper, Verhoeven, & Bosman, 2012).

The result of the study also suggests that metacognition plays a great role in developing students' learning behaviors and skills. In this study, metacognitive awareness guides learners to consider how the knowledge learned in class can be applied in a different situation. It also assisted the participants in this study to choose the correct alphabets to represent ending sounds that match the meaning of the words they are spelling. The results of the study join studies in the area that support the benefits of metacognition in spelling learning (*e.g.*, Cordewener et al., 2018; Kernaghan & Woloshyn, 1995; Paffen & Bosman, 2005). However, it can be noticed that in the previous studies metacognition is contributed by instructing spelling strategies while in the current study, explicit teaching of metacognition can also contribute to the development of spelling skills. Therefore, the diversity of metacognition development methods could be spotted as a result of the study.

It can also be noted that the participants were also satisfied by learning with the developed exercise. In this case, learners who understand the concepts of the subject matter at a level that they could practice it and monitor their process tend to positively perceive the method. Moreover, young learners still need guidance in their learning. It can be seen that explicit instruction is preferred by the participants and can confirm that primary school learners are dependent on their teachers (Split, Vervoort, & Verschueren, 2017). Preparing them to learn effectively would widen the opportunity of their independent learning behaviors in the future.

6. Conclusion

The result of the study could be concluded that the integration of explicit spelling teaching, and metacognition instruction is effective in developing students' spelling skills in the Thai context in both during-process and end-process stages. Moreover, the development of students' spelling skills development could be evidenced by the improvement of students' learning achievement after the treatment. Lastly, explicit spelling teaching, and metacognition instruction are satisfied by students as they could help them to learn more effectively and develop their spelling skills. The result of the study could be implicated in language classrooms. It could be noted from the results of the study that the development of desired learning behaviors also leads to expected outcomes of the class. Therefore, apart from teaching content, teachers should also focus on developing learning strategies as raising learning awareness could help learners to control their thinking processes throughout the processes of spelling and lead to the development of the skills. For, international research community, it could be noted that developing metacognition could be beneficial for enhancing young learners' spelling skills in such a complex language as the Thai language. Therefore, further studies are encouraged to use the instruction of learning strategies to develop young learners' language development in both L1 and L2. Moreover, further studies can explore the effectiveness of metacognitive instruction on more complex levels of Thai spelling (*e.g.*, double ending consonant, loan words, clusters, etc.). Moreover, indirect

teaching of metacognition might be tested in the Thai context to check whether it could contribute to learning behaviors and learning achievement.

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