

**EFFECTS OF INTERLEAVED FORM-FOCUSED ENGLISH  
INSTRUCTION ON THAI LOWER SECONDARY SCHOOL  
STUDENTS' GRAMMATICAL KNOWLEDGE  
AND PERCEPTION TOWARDS THE INSTRUCTION**

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**A Thesis Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Education in Teaching English as a Foreign  
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และการรับรู้ต่อการเรียนการสอนของนักเรียนไทยระดับมัธยมศึกษาตอนต้น



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ณรงค์ชัย รุ่งวิจิตรสิน : ผลของการสอนเน้นโครงสร้างไวยากรณ์ภาษาอังกฤษแบบแทรก  
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# # 6183326027 : MAJOR TEACHING ENGLISH AS A FOREIGN LANGUAGE

KEYWORD: interleaved practice, grammatical knowledge, long-term retention, form-focused instruction

Narongchai Rungwichitsin : EFFECTS OF INTERLEAVED FORM-FOCUSED ENGLISH INSTRUCTION ON THAI LOWER SECONDARY SCHOOL STUDENTS' GRAMMATICAL KNOWLEDGE AND PERCEPTION TOWARDS THE INSTRUCTION . Advisor: Assoc. Prof. SUMALEE CHINOKUL, Ph.D.

This study investigated the effects of interleaved form-focused instruction (FFI) on Thai lower secondary students' grammatical knowledge, long-term retention, and their perception towards the instruction. Students took a pre-test, an immediate post-test, and a one-week delayed post-test, and were also interviewed at the end of the implementation. The test scores were to investigate the improvement of grammatical knowledge as well as the long-term retention, and the data from the semi-structured interview were analyzed to figure out the perceptions towards the overall instruction. The results showed significant improvement of grammatical knowledge in all areas of form, meaning, and use and also elicited statistical significance of the long-term retention with the increase of scores in both the immediate and delayed post-test. For students' perception, the results disclosed that interleaved FFI seemed to be harder and more exhausting at first, but after getting familiar with it, the lessons were more preferable. The study recommended that interleaved FFI tended to be an effective method to improve students' grammatical knowledge and to enhance long-term retention, and that it should be applied in language classroom with well-designed lessons.

Field of Study:	Teaching English as a Foreign Language	Student's Signature
Academic Year:	2020	.....
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# CHAPTER I

## INTRODUCTION

In chapter 1, the background and the statement of the problem are provided.

They emphasize the reasons why the research in the interleaved FFI on Thai English as foreign language (EFL) students' grammatical knowledge, long-term retention of the knowledge, and their perception towards the instruction are vital to be investigated. Furthermore, in this chapter, research questions, research objectives, definition of terms, and scope of the study are also provided.

### 1. Background and Statement of the Problem

Teaching grammar in decontextualized lessons is meaningless and may not enhance students' communicative competence as it is thought to be (H. D. Brown, 2014; Nunan, 1998; Thornbury & Pattison, 2001). Only having language learners remember language rules in the knowledge-transmission approach leads to the familiar phenomenon that the learners may name all the rules but are unable to ask for or to provide simple information accurately and appropriately (Larsen-Freeman, 2001; Savage, Bitterlin, & Price, 2010). The goal of the language lesson is fundamentally for students to learn how to communicate (Halliday & Matthiessen, 2014; Halliday & Webster, 2002, 2003; Teruya, 2009). Therefore, the purpose of language learning is seen as a tool or a medium to communicate with others, not just reciting the language

rules and their exceptions. However, for the tool to be used successfully, it requires grammar (Bornstein, 1977; Halliday & Webster, 2002; Kroeger, 2013; La Palombara, 1976). The function of grammar is to free language from the constraints of bi-uniqueness – one certain sound or symbol representing one meaning – so that a set of finite expression units (sounds) can create an infinite number of contents (meanings) (Halliday & Matthiessen, 2014; Teruya, 2009). A number of studies have supported providing grammar or form-focused instruction (FFI) in a meaningful context in language classrooms is beneficial to second language (L2) acquisition as FFI would raise learners' awareness and turn language input – the language that learners are exposed to – to the intake – the information that learners register in their mind (An Chung, 2002; N. Ellis, 1995, 2007; R. Ellis, 2016; VanPatten, 2004, 2017). For instance, VanPatten (2013) concluded from his studies (seeing more details in Cadierno, 1995; VanPatten, 2004; VanPatten & Cadierno, 1993) with the explicit instruction of FFI, more effective language acquisition would happen because the learners can convert the input to intake which helps incorporate the target form of the target language during the processing stage to form their output effectively.

Based on the four strands of the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) of Thailand (Commission, 2008) – Language for Communication, Language and Culture, Language and Relationship with other Learning Areas, and



Language and Relationship with Community and the World – in which English is a compulsory foreign language class for every student from Grade 1 to Grade 12, grammatical knowledge or linguistic competence is necessary for students to acquire, as the importance of grammar has been mentioned earlier that it is one of the cores of Language for Communication. An example of the learners' qualities at Grade 9 set by the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) stated, “[After students have finished this level, students will be able to] speak and write for an exchange of information about themselves, various matters around them, situations and news of interest, and society, and communicate such information continuously and appropriately...” Consequently, for the students to be able to speak and write various matters around them appropriately, they have to have grammatical knowledge to string words together that will create appropriate sentences to achieve the goals set by the Ministry of Education (MOE) of Thailand.

Even though many scholars (e.g. Hammond, 1988; Krashen & Terrell, 1983; Lyster & Ranta, 1997; Truscott, 1996, 1999) believe language learners should be able to pick up accurate linguistic forms incidentally or unconsciously when they are exposed to the target language's input, there are a number of scholars stating otherwise (e.g., Larsen-Freeman, 2001; Lightbown, 1998; N. Ellis, 1995, 200; R. Ellis, 2008, 2009, 2016). They argued that in the reality of L2 classroom, very few

learners are able to pick up linguistic forms effectively without the help of explicit instruction, especially when they are studying the target language as a foreign language that most of the language exposure merely occurs in class time and rarely outside school. In English as a second language (ESL) context where English language lessons occur in an English-speaking environment, students have far more opportunities to be exposed to an enormous amount of target language input, to practice language skills in authentic situations as in the statement that, “The more the communicative needs, the more readily communicative methods seem to be adopted” (Savignon, 2007, p. 124). Undoubtedly, a great deal of language acquisition in accidental learning can occur outside the classroom (Wei, Lin, & Litton, 2018). By contrast, in the EFL context, English learning is merely a part of the school curriculum and most language exposure normally happens only in language classrooms which is clearly not enough to lead to incidental learning and language acquisition (Campbell, 2004; Savignon, 2007). Accordingly, the need for explicit FFI as a method to aid language learners to turn the limited input to intake is an essential step of language learning and language acquisition. Many research studies have shown that the language lessons including FFI as a part of communicative interaction in the communicative language teaching (CLT) approach are more beneficial to the learners than the CLT lessons without FFI (Beydoğan & Bayındır, 2010; Guchte,

Braaksma, Rijlaarsdam, & Bimmel, 2015; Marzban & Mokhberi, 2012; Muranoi, 2000; Spada & Lightbown, 2008; Williams, 1999).

Another critical issue in learning new knowledge or skills is that students seem to be able to grasp the concept of the new lesson being taught for only a very short period of time and cannot retain it (Hughes & Lee, 2019; Nakata, 2015). Therefore, there are numerous studies trying to find a solution to enhance long-term retention of what students have learned. Many researchers agree that blocked practice, in this study called traditional lessons, where only one skill or concept is taught or practiced at a time – is commonly used in teaching both new knowledge and new skills in the classroom (Gerbier & Toppino, 2015; Hattie, 2009; Hughes & Lee, 2019; Nakata & Suzuki, 2019). These traditional lessons are found effective for short-term retention; however, the studies showed the new knowledge and skills were usually faded quickly once the sessions ended (Gerbier and Toppino, 2015; Hattie, 2010; Hughes & Lee, 2019; Nakata & Suzuki, 2019). Gerbier and Toppino's (2015) study using functional magnetic resonance imaging (fMRI) revealed that for students receiving the traditional lessons, their energy through the brain quickly decreased even during the lesson. This phenomenon happens when repeated practices or problems with the same type of solution are presented consecutively without being interfered by other types of problems or new skills. Neuroscientists call this phenomenon neural

suppression or bored brain and this would be the cause of why the knowledge or skills being just learned are faded quickly (Hughes & Lee, 2019).

At present, the new practice in scheduling the lessons called interleaved practice has been proposed as it is the opposite treatment of the traditional lessons by mixing up accumulated knowledge or skills over a long period of time and none of the same knowledge or skills are practiced consecutively (Hughes & Lee, 2019). The interleaved lessons in language classroom are lessons that learners practice or work on different language skills or concepts in an intermitted schedule and its aim is to enhance students' accuracy and long-term retention of the knowledge and skills (Kang, 2017; Nakata & Suzuki, 2019; Pan, Tajran, Lovelett, Osuna, & Rickard, 2019). The reason why interleaved practice can enhance students' accuracy and long-term retention is the interleaving effect that happens with new information being transferred constantly and forcing the brain to be active continually as the rote responses pulled from short-term and long-term memory, which does not happen with traditional lessons (Kang, 2017; Hughes & Lee, 2019). Therefore, the interleaved practice is more energy consumption and seems to be harder in students' perspective, but it does produce better accuracy in long-term results (Pan et al., 2019).

As the aforementioned importance of grammar for students, many scholars have conducted studies and empirical research on grammar teaching and learning in a

meaningful context. However, most foci of the studies were on whether or not providing the FFI resulted in positive impacts of having better language accuracy and language acquisition, but not on the effects of the different designs to provide grammar lessons (Kang, 2017; Pan et al., 2019; Nakata & Suzuki, 2019). Most FFI and commercial textbooks provided to the learners, at present, are designed in the blocked practice and very few studies have been conducted on the effects of using interleaved practice (Nakata & Suzuki, 2019). In these recent years, even though there have been some studies on providing interleaved practice in L2 classrooms (Pan et al., 2019; Nakata & Suzuki, 2019), but most studies have been conducted with university students or adult learners even though Kang, (2017) indicated that the interleaved practice should be beneficial to language learners at least with the level of intermediate and above. The study of effects in applying interleaved FFI in L2 classroom with young learners, especially with secondary level students, whose expected English competence set by MOE of Thailand (2008) should at least be at A2 levels of the criteria by the Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR) (Council of Europe, 2001), is still scarce. In response to the need for more diachronic evidence, the present study was designed for young Thai EFL learners at lower secondary levels, to examine the effectiveness of the interleaved FFI on helping learners have better grammatical

knowledge and long-term retention of the knowledge. Moreover, students' perceptions towards the instruction were also investigated.

## 2. Research questions

The present study attempted to find answers to the following questions:

1. To what extent does interleaved FFI help improve grammatical knowledge of Thai EFL lower secondary school students?
2. To what extent does interleaved FFI enhance long-term retention of grammatical knowledge of Thai EFL lower secondary school students?
3. What are Thai EFL lower secondary school students' perceptions towards the interleaved FFI?

## 3. Research Objectives

The present study aimed to

1. investigate the extent that interleaved FFI helps improve grammatical knowledge of Thai EFL lower secondary school students.
2. investigate the extent that interleaved FFI enhances long-term retention of grammatical knowledge of Thai EFL lower secondary school students.

3. explore Thai EFL lower secondary school students' perceptions towards the interleaved FFI.

#### 4. Definitions of terms

**4.1 Interleaved Form-Focused instruction (FFI)** refers to a practice that two topics

- the usage of Past Simple and Present Perfect – were designed to be taught with FFI approach that learners are encouraged to develop metalinguistic awareness of the forms, meanings, and uses of Past Simple and Present Perfect in three stages – language exposure, noticing and generalizing rule, and language creativity – with the cumulative schedule of interleaved practice – combining both blocked and interleaved practice. The lessons were taught intermittently over 14 sessions in 9 weeks.

**4.2 Grammatical Knowledge** refers to the knowledge and ability of the participants to notice and produce accurate forms, understand meanings, and create the output by using English Past Simple and Present Perfect tense in all areas of forms, meanings, and uses in affirmative, negative, and interrogative sentences properly. Grammatical Knowledge in this study was measured by analyzing the scores of selected-response assessments in two types: a grammaticality judgement test and a

discrimination test that participants had to do on a pre-test and immediate post-tests.

**4.3 Long-Term Retention of Grammatical Knowledge** refers to declarative memories that stored explicit information of the grammatical knowledge which students had learned during the treatment regarding the forms, meanings, and uses of Past Simple and Present Perfect tense in affirmative, negative, and interrogative sentences. The students had to demonstrate how much the information was registered, stored, and retrieved through the delayed post-test. In this study, long-term retention of the knowledge was measured by comparing the results of the participants' performance among the pre-test, immediate post-tests, and one-week delayed post-test from the scores of the grammaticality judgement test and the discrimination test as following the previous research done by Pan et al. (2019), Nakata and Suzuki (2019), Suzuki and Sunada (2020), and Suzuki, Yokosawa, and Aline (2020) which also used one-week delayed post-test.

**4.4 Students' Perception** refers to how the participants felt about, organized, interpreted, and consciously experienced the lessons of interleaved FFI on forms, meanings, and uses of Past Simple and Present Perfect learned during the treatment. To investigate how the participants feel about the interleaved FFI, it



was measured by a semi-structured interview and analyzed by a content analysis method.

**4.5 Thai EFL Lower Secondary School Students** refer to Thai EFL students at Grade 7 to Grade 9 who were studying in a public or private school in Thailand that used the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) of Thailand.

## 5. Scope of the study

### 5.1 Research Population and Participants

This study was a quasi-experimental research. The population in the present study was Thai EFL students at lower secondary level students who were studying at secondary schools in the regular program in Thailand. The participants participating in the research data collection were 23 students in the eighth grade studying in a private secondary school in Phra Nakhon Si Ayutthaya province.

### 5.2 Research Variables

The present study aimed to investigate two following variables:

#### 5.2.1 Independent Variable

a) Method of instruction: English instruction using interleaved FFI

### 5.2.2 Dependent Variables

- a) Students' grammatical knowledge
- b) Students' long-term retention of grammatical knowledge
- c) Students' perception towards the interleaved FFI

## 6. Organization of the Chapters

This thesis consists of five chapters. The first chapter presents the introduction including the rationale of the present study, research questions, research objectives, the scope of the study and the variables, and definitions of terms.

The second chapter presents a review of the literature that was used to develop the conceptual framework of the present study. This chapter is divided into five main sections: Form-Focused Instruction, Interleaved Practice, Past Simple and Present Perfect, Grammatical Knowledge, and Long-Term Retention of the Knowledge.

The third chapter presents the research methodology including the research design, context of the study, participants, research instruments, research procedures, data collection procedures, and data analysis. The development of the instruments and how to validate the validity and reliability is also presented in this chapter.

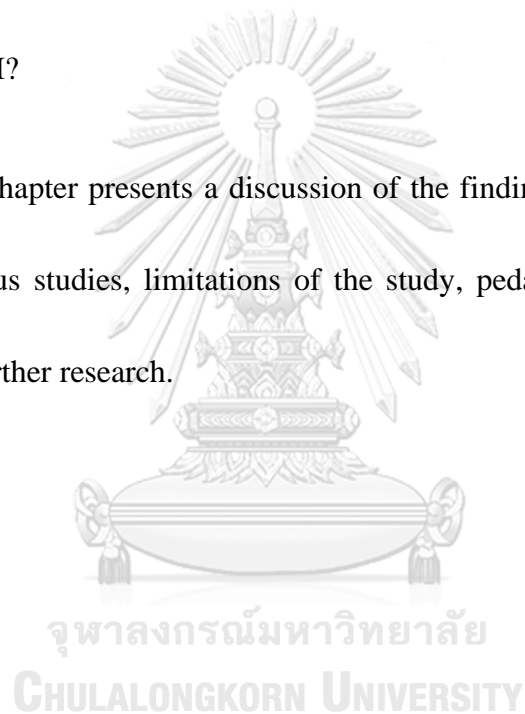
The fourth chapter presents the findings according to the research questions:

1. To what extent does interleaved FFI help improve grammatical knowledge of Thai EFL lower secondary school students?

2. To what extent does interleaved FFI enhance long-term retention of grammatical knowledge of Thai EFL lower secondary school students?

3. What are Thai EFL lower secondary school students' perceptions towards the interleaved FFI?

The fifth chapter presents a discussion of the findings in the present study in relation to previous studies, limitations of the study, pedagogical implications, and suggestions for further research.



## CHAPTER II

### Review of the literature

#### 1. Form-Focused Instruction

##### 1.1 What is Form-Focused Instruction?

Form-Focused Instruction (FFI) procedure is an essential step to draw students' attention to focus on linguistics form in a communicative language teaching (CLT) approach for second or foreign language classroom in order to promote language accuracy along with fluency in meaningful language learning context (DeKeyser, 2007; R. Ellis, 2001; R. Ellis, Basturkmen, & Loewen, 2001; Savage et al., 2010). The term FFI had a long history and can be traced back to its origin which was coined as 'focus-on-form (FonF) approach' by Long (1988, cited in R. Ellis 2016). FonF was defined as an indispensable stage of instruction in language classrooms to teach specific targeted features – errors – that students made incidentally and caused confusion on the meaning or unsuccessful communication. Unlike Focus-on-Forms (FonFs) approach which in Long's (1988) definition was similar to grammar-translation method, FonF was created to help increase students' awareness to notice the use of L2 forms and detect errors, if there are any, in the particular context to ensure that the language learners will be able to send their messages to the interlocuters or readers effectively and successfully. FonF approach integrates the focus on linguistic forms and their meanings (Doughty and Williams, 1998). The core benefit of this integration is for the students to have opportunities to negotiate the meaning and to enhance the students' fluency while the accuracy is not left behind (Norris & Ortega, 2000). FonF lessons will draw students' attention to the language form and its meaning within a meaningful context which is different from

FonFs that students will be taught certain linguistic forms in isolation with drill exercises in decontextualized lessons as Long stated,

“Focus-on-form refers only to those form-focused activities that arise during, and embedded in, meaning-based lessons; they are not scheduled in advance, as is the case with focus on forms, but occur incidentally as a function of the interaction of learners with the subject matter or tasks that constitute the learners' and their teacher's predominant focus.” (1998, p.41)

Long (1998) argued that FonF should be implemented in language classrooms because FonF is a student-centered approach, which is totally opposite to FonFs that is teacher-directed lessons with planned lessons to teach linguistic forms and language rules without conducting needs analysis to solve students' problems in communication. In contrast to FonFs, FonF requires teacher's response to the needs of students as they have to draw students' attention to the errors being raised by the students and causing the communication breakdown.

For form-focused instruction (FFI), R. Ellis (1997) defined it as any pedagogical effort that language teachers use to draw the student's attention to language form. There has always been a confusion of the differences between FonF and FFI, so Long (1998) clarified the two terms that FFI is the big umbrella and has FonF under it as he wrote,

“Focus-on-form should not be confused with 'form-focused instruction.' The latter is an umbrella term widely used to refer to any

pedagogical technique, proactive or reactive, implicit or explicit, used to draw students' attention to language form. It includes focus on form procedures, but also all the activities used for focus on forms, such as exercises written specifically to teach a grammatical structure and used proactively....” (p.41)

Besides the clarification from Long, these two terms, FFI and FonF, have always been used interchangeably in ESL and EFL classrooms worldwide.

Moreover, the definition of FFI is also defined by R. Ellis (2016) that it is the focus on linguistic forms taught either implicitly or explicitly in language classroom either before the main task (pre-task planning), after the main task (post-task stage), or right after the arising of the error as pointed out in the original meaning of Long (1988). In FFI with CLT approach, tasks are designed to promote students' engagement with meaning and also the language form. The teacher needs to make a decision on which target forms are to be taught to draw attention and raise the awareness, also called 'noticing' by some scholars, based on students' interlanguage constraints and the context. Moreover, many scholars and educators urge language teachers to include FFI in language lessons as FFI not only promotes language accuracy but also would lead to language acquisition (R. Ellis, 2016; R. Ellis, Basturkmen, & Loewen, 2001; Nunan, 1998).

FFI is considered an essential teaching stage, especially in written output (R. Ellis, 2016). Unlike speaking which some kinds of errors can be overlooked as long as the meaning of the message can be decoded by the interlocutor, written output with grammatical errors is harder to be passed unnoticed (Humphrys, 2004, cited in Nunan,

2012). It might be because in print readers have more time to think and analyze the message and when they see errors on paper and those errors can confuse the readers in what it is intentionally supposed to mean. Therefore, many strategies have been invented to be implemented in FFI class in order to reduce such errors, to enhance accuracy, and to promote language acquisition such as text-enhancement, corrective feedback, input flood, task-repetition, and processing instruction, for example (R. Ellis, 2016). Many research studies have shown that the lessons providing FFI to draw learners' attention to focus on linguistic forms as a part of communicative interaction in CLT approach are more beneficial to the learners than the CLT lessons without FFI (Guchte, Braaksma, Rijlaarsdam, & Bimmel, 2015; Marzban & Mokhberi, 2012; Muranoi, 2000; Williams, 1999).

## 1.2 Types of Form-Focused Instruction

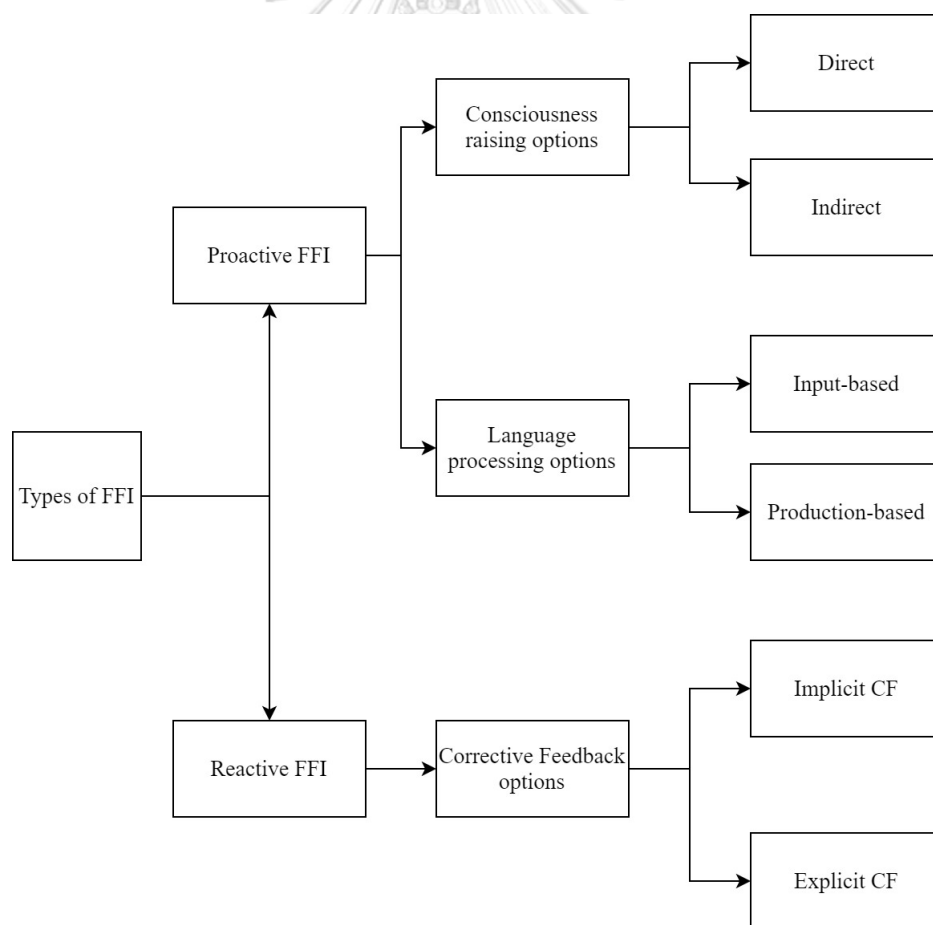
Due to the definition of FFI, R. Ellis (2016) concluded that FFI can be divided into two broad categories; Performance options as in “proactive FFI” and Feedback options as in “reactive FFI.” Each category still contains various methodological options to be implemented in language classrooms as shown in

Figure 1.

### 1.2.1 Proactive Form-Focused Instruction

Proactive FFI could be described as preplanned explicit grammar instructions that aim to develop learners' explicit knowledge in order to notice and be able to use target language features (R. Ellis, 2012). Pre-planning in proactive FFI means that the teacher is required to analyze learners' needs in order to plan what to be taught that is

suitable to the learners' communicative needs in advance and does not mean imposing learners with linguistic syllabus without the needs analysis (Nassaji & Fotos, 2007). This type of FFI can be conducted either in direct instruction where the explanation and description of L2 rules and exceptions are provided explicitly by the teacher or via instructional materials or in indirect instruction where many kinds of tasks and activities are provided for the learners to develop the explicit knowledge of L2 rules and exceptions on their own. According to Ellis's (2012) suggestion, Proactive FFI is composed of two main options to be conducted – Consciousness-Raising and Language Processing.



*Figure 1 Types of Form-Focused Instruction*



### A. Consciousness-Raising

Consciousness-raising (CR) refers to how to draw learners' attention to the properties of the target language to foster learners' understanding of specific language features (R. Ellis, 2012, 2016). CR is a concept-forming technique for explicit learning that aims to develop learners' declarative and explicit knowledge rather than procedural and implicit one. CR tasks are created for the learners to notice the target forms so that they can integrate new language features with their interlanguage. Although the CR can be provided either directly or indirectly, both of these options involve explicit instruction of linguistic forms. Direct and indirect CR differ in the means of how the instruction is conducted. For the direct option, the language forms are explained explicitly either by describing it or by giving instructional materials. On the other hand, for the indirect option, the learners' explicit knowledge is developed through consciousness-raising tasks (R. Ellis, 2012). The effectiveness of CR in teaching language was explained by R. Ellis (2012) as followed:

“Consciousness-raising as a methodological option seeks to develop learners' explicit knowledge on the grounds that, although this may not be available for immediate use in communication, it will facilitate noticing and noticing-the-gap and so lead to the development of the implicit knowledge needed for communication.” (p.281)

According to Ellis's (1997) suggestion, with formal instruction, once the particular grammatical feature has been noticed, the learners continue to remain aware of the feature and notice it in subsequent input.

Ellis (2001) argued that CR facilitates language acquisition. He explained that the following three processes involved in the acquisition of implicit knowledge are due to the process of providing CR. Firstly, noticing occurs once the learners become conscious of the presence of linguistic features in the input which previously was ignored. Secondly, comparing is when the learners compare the new features being noticed in the input with their present mental grammar and recognize a 'gap' between the input and the new features. Lastly, integrating refers to the way learners integrate a representation of the new linguistic feature into their present mental grammatical knowledge.

### **B. Language Processing**

R. Ellis (2012) defined the methodology of language processing FFI that "Language processing options involve various kinds of activities designed to induce learners to process L2 features either by comprehending text or by producing text." (p.277) Language processing FFI can be divided into two categories: input-based instruction and production-based instruction.

#### **a. Input-Based Instruction**

Input-based instruction refers to the means by which the input is manipulated so that it fosters learners to notice and be aware of the language features that the learners are required to process. Input-based instruction is designed to enable learners to notice some particular language features, to comprehend the meaning of those features, and to rehearse the feature in learners' short-term memory (Ellis, 2012).

Under the term input-based instruction, there are several methods created and implemented in language classrooms today as shown in

Figure 2.

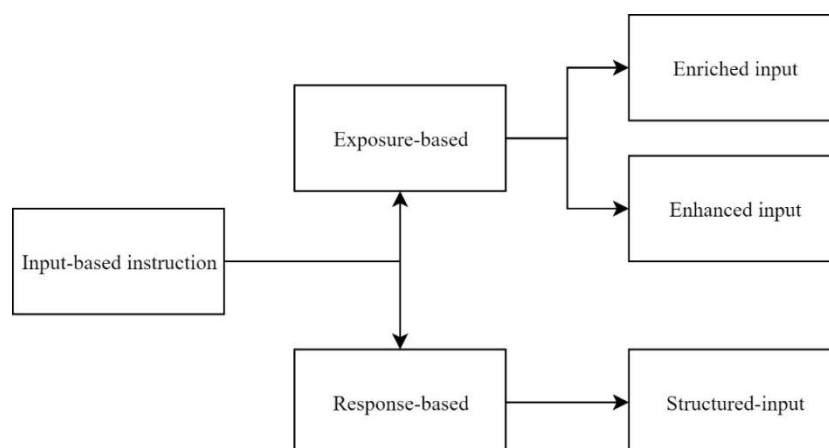


Figure 2 Input-based FFI options (R. Ellis, 2012)

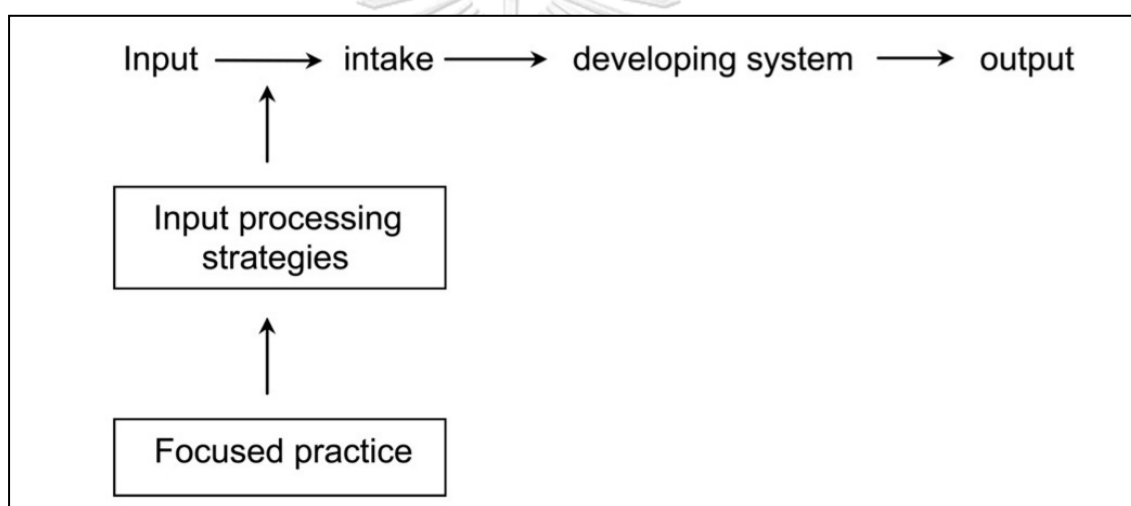
Enriched input is also known as ‘input flood.’ It is a kind of input that provides learners with a large number of exemplars of the target forms and structures either through visual text or listening records (Nassaji & Fotos, 2011). Enriched input is a technique targeting to increase the chance of noticing the target features. The rationale behind enriched input is that the more frequent target features are exposed to, the greater opportunities they will be noticed by the learners, and it is believed to foster the rate of learning (Doughty & Williams, 1998).

Enhanced input refers to a way to direct learners’ attention to the target linguistic forms. Smith (1993) defined enhanced input as “the process by which language input becomes salient to learners” (p.118). Moreover, he claimed that learners lose the opportunity to notice certain grammatical features in the input when

those features are non-salient. Input enhancement involves some attempt to highlight a certain target feature such as changing the font size or bolding and highlighting the focused features in visual text or repeating or stressing the particular words and phrases in the audio record to draw learners' attention to it (R. Ellis, 2012, 2016). According to Smith (1993), enriched input can facilitate the process of input selection by L2 learners and brings about more robust cognitive processing.

Structured input refers to classroom activities used in input-processing instruction that is specifically designed to force the learners to focus on the target features. This method is specifically designed to facilitate form-meaning connections which enable students to focus on the target features and process them for meaning (Nassaji & Fotos, 2011). Processing instruction was developed by VanPatten and his colleagues on a model of input processing with the assumption that input is the core of language acquisition and the learners will acquire grammar once an input-rich environment is provided (VanPatten & Cadierno, 1993; VanPatten, 2004, 2013, 2017) as shown in Figure 3. This model was developed to explain the initial processes of how L2 learners might acquire the second language. VanPatten (2017) describe the words 'processing', 'perception', and 'noticing' that 'processing' is the mechanism used in drawing meaning from the input; 'perception' refers to the registration of the signals being received through listening or reading by the learners; and 'noticing' refers to the consciousness of the existence of those features in memory. Perception and noticing can take place without extracting meaning from those features, but processing involves both perception and noticing with the meaning linking to the forms. In order for the language input – the language that learners are exposed to – to be registered and changed to intake – the information that learners

register in their mind, it requires input processing (VanPatten, 2013). According to VanPatten and his colleagues' suggestion, intake is the basis of language learning. However, the problem most L2 learners have in common is the difficulty in processing input to link the meaning and its form as L2 learners naturally either focus on meaning without paying attention to form or focus on form while losing tracks of meaning (Nassaji & Fotos, 2011). Therefore, L2 learners should be taught how to process input so that they can learn the underlying grammar while their attention is on meaning.



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*Figure 3 Processing Instruction (Nassaji and Fotos, 2011)*

The key components of input-based approach with processing instruction method are

- 1) when learners are exposed to the input, their first focus is on its meaning;
- 2) learners are provided with the explanation of the focused linguistic forms;
- 3) learners are provided with input-based activities designed – focused practice – to help learners process language regularities;
- 4) learners are provided with an uncontrolled exercise or task to produce the output (Nassaji & Fotos, 2011; VanPatten, 2004, 2013, 2017).

### 1.2.2 Reactive Form-Focused Instruction

Reactive FFI refers to teacher's responses triggered by errors or communicative problems in students' production. For example, the teacher may notice an error in students' speech and give negative feedback, also called corrective feedback (CF). Explicit CF is when the teacher corrects those errors overtly, and implicit CF is for the teacher to merely provide some clues so that learners can correct those mistakes or errors on their own (R. Ellis, 2012). Similar to proactive FFI, CF can be preplanned or incidental actions. If the error or the problem is related to the forms that teachers had in mind to focus on prior to the class, it is a preplanned CF, which is likely to yield intensive (focused, targeted) on some particular forms. In contrast, when teachers had no form to focus on in mind and the feedback derives from the real-time communicative problems, the CF is incidental action.

### 1.3 The Previous Studies on the Effectiveness of Form-Focused Instruction

As FFI is believed to be important in helping language learners improve language accuracy and aiding the process of language acquisition, many scholars have conducted studies and empirical research on grammar teaching and learning in a meaningful context as some examples are shown in Table 1.

According to the previous studies, it can be claimed that FFI is an effective method to be implemented in the foreign language classroom, and explicit FFI is helpful and would lead to the acquisition of linguistic and pragmatic knowledge. Moreover, many scholars and educators urge language teachers to include FFI in language lessons as FFI not only promotes language accuracy but also would lead to

language acquisition (R. Ellis, 2016; R. Ellis, Basturkmen, & Loewen, 2001; Nunan, 1998).

*Table 1 The Examples of FFI in ESL and EFL Context*

Authors	Year	Results of the Studies
Beydoğan and Bayındır	2010	Teaching FFI with inductive method – providing samples before having learner generalize rules and draw a concept map – brought about positive effects for deeper understanding of language rules.
Guchte et al.	2015	The experimental group, studying with FFI, outperformed the control group, studying without FFI, on the accuracy of written output and metalinguistic knowledge. However, no significant differences between the two groups were found in oral accuracy and fluency.
Rahimpour, Salimi, and Farrokhi	2012	EFL participants receiving intensive FFI outperformed the other group in terms of accuracy in written production-focused tasks.
Spada and Lightbown	2008	The isolated lesson as a post-stage in the task-based language teaching approach was beneficial for a group of learners with the same first language to aid problems of L1 interference.

Authors	Year	Results of the Studies
Szudarski	2012	Meaning-focused instruction (MFI) followed by FFI was an effective way of enhancing learners' collocational knowledge at both the productive and receptive level, whereas MFI only does not seem to lead to much improvement.

#### 1.4 Form-Focused Instruction in Thai Language Classroom

National Education Act of 1999 and Education Curriculum of Thailand in 2002 were the starting point of the significant change in English language education in Thailand (Baker & Jarunthawatchai, 2017), as they forced teachers to change from teaching with teacher-centeredness in passive classrooms into learner-centered classes and focusing on individual differences. Therefore, CLT in English language teaching (ELT) in Thailand was initiated and implemented in order to correspond to the notion of learner-centeredness (Baker & Jarunthawatchai, 2017; Darasawang, 2007; Wongsothorn, Hiranburana, & Chinnawongs, 2002). Since CLT was introduced to Thai teachers in the 1990s, it now has been adopted widely in Thai ELT, and the Thai Ministry of Education (MOE) has been hosting a number of pieces of training and workshops for Thai EFL teachers such as the Project for Improving Secondary English Teachers (PISET), and the Key Personnel Project to make sure that Thai EFL teachers understand what CLT is and how to implement CLT in classrooms (Methitham, 2009). The reason that CLT has been popular not only in Thailand but also in most countries in Southeast Asia is that it integrates attention to linguistic form



in the context of meaning, and it emphasizes learners' needs (Watson Todd, 2001). At present, there have been many research studies conducting to figure out the effects of implementing FFI with CLT approach in Thailand as shown in Table 2.

*Table 2 The Examples of Research Studies on FFI in Thailand*

Authors	Year	Results of the Studies
Choopool and Sinwongsuwat	2017	Low-proficiency learners treated with form-focused repair orally performed significantly better in all five features, including pronunciation, grammar accuracy, fluency, appropriacy of word choices, and style of expression in the post-test compared to those without form-focused repair treatment.
Patanasorn, & Tongpoon-Patanasorn	2012	The authors concluded and suggested how to conduct grammar teaching and the notion of focus on form by considering diverse definitions of focus on form, the difference between focus on form (FonF) and focus on forms (FonFs), the effectiveness of FonF on learners' acquisition, and the implications of grammar teaching for EFL teachers in Thai contexts
Sermsook, Liamnimitr, and Pochakorn	2017	Both direct and indirect corrective feedback, a kind of FFI, either in the written or oral forms are beneficial to enhance students' grammatical knowledge and better performance in both spoken and written output. Direct corrective feedback seems to be more suitable to lower proficiency or beginner EFL students to assist them to overcome the difficulties of uncomplicated grammatical rules. On the other hand, indirect

Authors	Year	Results of the Studies
		corrective feedback should be used with students who possess a relatively good command of the target language.
Wongkhrua, Prommas, and Prabjandee	2017	The results revealed that English writing ability, English grammatical ability and attitude toward English writing instruction of Grade Sixth students after learning with Form-Focused Instruction activities were higher than traditional English writing method.

In Thailand, unlike ESL countries, English learning is merely a part of the school curriculum and most language exposure normally happens only in language classrooms. Accordingly, the need of explicit FFI as a method to aid language learners to turn the limited input to intake is an essential step of language learning and language acquisition. Many previous studies on providing FFI to Thai students revealed that it brought about a positive impact and should be applied to aid students in order to improve their English competency.

In conclusion, FFI in this study is defined as the process of teaching proactive explicit FFI by using the input-based approach which involves both processing instruction method and structured input with practice exercises. As Ellis (1991) defined the proactive explicit FFI, “[It is] a pedagogic activity where the learners are provided with L2 data in some form and required to perform some operation on or with it, the purpose of which is to arrive at an explicit understanding of some

regularity in the data” (p. 239). The characteristics of input-based FFI are that attention to target form is predetermined and planned (e.g., in this study the focused target structure is on the usage of past simple and the usage of present perfect), is presented in isolation, is explained by using metalinguistic terminology (e.g., rule explanation), and is involved the controlled practice of target the forms to raise awareness and avoid making target grammatical errors. According to Ellis’s definition of input-based FFI, many teaching models have been proposed and categorized under this umbrella such as Processing Instruction, Text Enhancement, Input Flood, and so forth. Therefore, the lesson plans in this study were designed by following input-based instruction, especially the Procession Instruction model purposed by VanPatten (2004, 2017) as shown in Figure 3. VanPatten claims that processing instruction aims to help language learners draw meaning from input by linking grammatical forms to their meaning or function. During this stage, it could result in turning input to intake which is the basis of language learning.

## 2. Interleaved Practice

### 2.1 What is Interleaved Practice?

An interleaved practice refers to a method in which many skills or concepts are taught intermittently in a well-designed organization and scheduled over a particular period of time (Nakata & Suzuki, 2019; Rohrer et al., 2015). Interleaved practice and blocked practice are contrast that for the blocked practice or traditional lessons, one concept or skill is practiced or repeated for some periods of time (e.g. for hours, days, weeks, or months), but for the interleaved, two or more concepts or skills

are mixing up to be practiced at once (Hughes and Lee, 2019; Kang, 2017; Nakata & Suzuki, 2019).

Although there has not been much research on interleaved practice in language teaching and learning, the idea of interleaved lessons is not new and it has been widely used in other fields and proven to provide a positive impact on skill development such as mathematics learning (Rohrer, Dedrick, & Burgess, 2014; Taylor & Rohrer, 2010), as well as sports training, and music practice (Goode & Magill, 2013; Hall, Domingues, & Cavazos, 1994; Shea & Morgan, 1979). When the interleaved practice is implemented, the interleaving effect happens, and this effect is beneficial because with new information being transferred, the brain is forced to be active continually as the rote responses pulled from short-term memory, which does not happen with the traditional lessons, so that it is more energy consumption and seems to be harder in students' perspective, but it does produce better long-term results (Pan et al., 2019).

It was widely believed that interleaved practice was beneficial due to the spacing effect as the practice schedule pertains to the spacing effect (Nakata & Suzuki, 2019) meaning that where practice opportunities are distributed over multiple occasions. This prolonged distribution yields superior retention when compared to massed or blocked lessons where practices occur successively without an interval of other concepts or skills (Kang, 2017; Pan et al., 2019). However, many research studies have shown that although the spacing and interleaving effects may often seem confounded, they are separate phenomena. Many researchers (e.g. Kang & Pashler, 2012; Taylor & Rohrer, 2010) conducted the studies to investigate the effectiveness of

the interleaved practice compared to the blocked and their studies were carefully designed for the two methods to have equivalent spacing to avoid the spacing effect. These studies have confirmed that the interleaving effect and spacing effect are distinguishable, and the benefit of interleaved lessons cannot be merely claimed by the spacing phenomenon as in the end, the results of the equal spacing distribution in the interleaved lessons were more effective in providing better long-term retention than the blocked or traditional lessons.

According to many research studies in the past, an interleaved practice has shown to be beneficial for learning in three major areas: motor skill acquisition, category learning, and problem-solving skill (Kang, 2017).

For motor skill acquisition, Shea and Morgan (1979) were the pioneers discovering that with the interleaved practice, the participants – 72 university students from a physical education class – at the end executed the better batting movement patterns than with the blocked practice. Later on, many studies were conducted to find out the advantages of interleaved practice on learning other motor skills and all yielded the positive result such as more accurate badminton serves with all three serving styles, superior retention, and faster transfer to other learning skills (Goode & Magill, 2013), better result in teaching novices to play golf (Porter, Landin, Hebert, & Baum, 2007), quicker acquiring the skill to play the series of flute notes (Stambaugh & Demorest, 2010), and quicker acquiring the skill to play the melodies on piano (Abushanab & Bishata, 2013).

For category learning, it was widely believed that blocked practice would enhance greater memorization of details and better recognition to classify objects into

categories while interleaved method will harm the process. In contrast to the belief, many pieces of research have shown otherwise (Kang, 2017). For example, Kornell and Bjork (2008) had the participants looked at 72 paintings, 6 pieces for each artist accompanied by the artist's names, and the study was conducted in two settings: the blocked and the interleaved patterns to present the paintings to the participants. In the end, the participants in the interleaved lessons were better able to correctly classify new paintings and many similar studies have been conducted and showed the same result (e.g., Birnbaum et al., 2013; Kornell et al., 2010; and Wahlheim et al., 2011)

For problem-solving skills, the interleaved lessons have been explored in mathematics problem-solving research (e.g., the research by Rohrer, (2009); Rohrer & Taylor (2007); Rohrer et al., (2014), and Rohrer et al., (2015)). The result showed that blocked lessons brought about higher performance during practice. However, in the one-week-delayed post-test, the students with interleaved practice outperformed the students with the blocked by the wide margin of 63% vs. 20% (Rohrer & Taylor, 2007). In the recent research, Rohrer et al. (2014) conducted nine-week research in the classroom-based study and the two-week-delayed post-test also provided the support for the interleaved lessons that students' score learned with the interleaved practice also outperformed students' score with the blocked at 72% vs. 38% supporting the previous study. An analysis of the errors revealed that compared to the blocked lesson whose practice was grouped with the same type of practice and did not require learners to deeply analyze the problem for the correct formula to be used, the interleaved lessons enhanced the skill to differentiate problem types and to determine which formula to be applied as learners had to analyze each item carefully throughout the exercise. The research results supported Vender, Stoep & Seifert's (1994 cited in

Kang, 2017) statement, “when learning mathematics, it is not sufficient to learn how to execute a strategy – one must also know when a particular strategy is appropriate.”

## 2.2 Interleaved Lessons in Language Learning

In these recent years, the effects of interleaved practice have been investigated in language learning areas as scholars and educators would like to know whether interleaved practice and interleaving effect would yield the benefits to language learners as in other areas as mentioned above (Nakata & Suzuki, 2019). The examples of research studies of the effects of interleaved practice in language learning are shown in Table 3.

*Table 3 The Examples of Research Studies on Effects of Interleaved Practice in Language Learning*

Authors	Year	Results of the Studies
Carpenter and Mueller	2013	studied the effects of interleaved practice on learning L2 pronunciation and the finding indicated that blocked led to better fluency in pronunciation.
Finkbeiner and Nicol	2003	investigated the effects of interleaved practice on vocabulary learning and found that with interleaved practice the participants learned new vocabulary faster and responded more quickly when being tested.

Authors	Year	Results of the Studies
Nakata and Suzuki	2019	studied the effects of interleaved practice in learning five English grammatical structures and using a grammaticality judgement test to assess the result. The scores from the delayed post-test showed that the experimental group with interleaved practice better enhanced L2 grammar learning and long-term retention than the control group.
Pan et al.	2019	studied the effects of interleaved practice in learning about conjugating Spanish verbs in the preterite and imperfect past tenses by being divided into two groups: the interleaved practice group and the traditional one. The results of this study showed the group with interleaved lessons had better knowledge retention and they performed substantially better on a 1-week delayed test than the control group.
Suzuki and Sunada	2020	studied the effects of interleaved practice by dividing the participants into three groups – blocked, interleaved, and hybrid practice. The result showed that the hybrid practice group gained higher accurate performance scores on the immediate post-test than the blocked and the interleaved, even though in their study, there was no statistical significance on the one-week delayed post-test.
Suzuki, Yokosawa, and Aline	2020	studied the effects of interleaved practice in learning L2 syntax and the result show that the treatment group with interleaved practice lessons gained higher accurate performance scores on both immediate and delayed post-test than the control group.

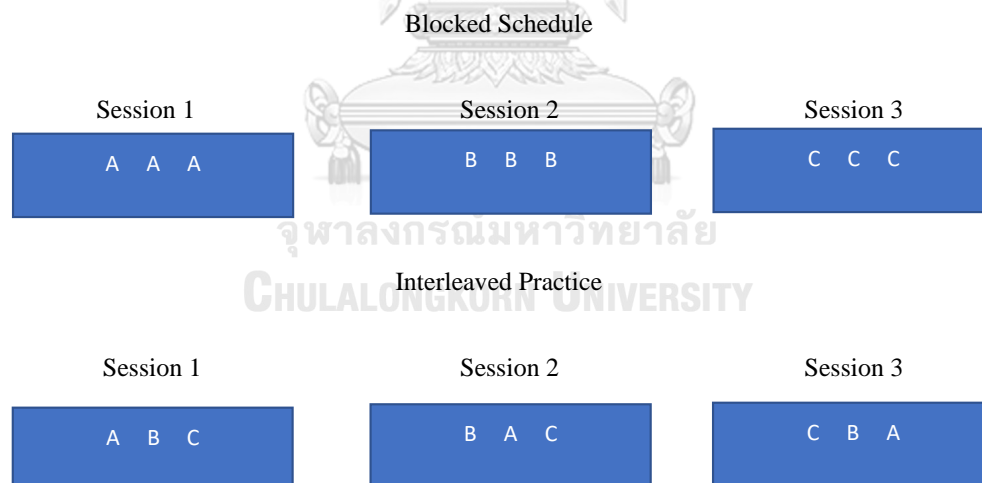


## 2.2 Models of Interleaved Practice

According to the frameworks of interleaved practice suggested by Kang (2017) and Hughes and Lee (2019), there are generally two types of interleaved practice: purely interleaved practice and interleaved practice with a cumulative schedule, also called hybrid practice by some scholars.

For **purely interleaved practice**, it is the total opposite of the blocked practice as mentioned earlier that more than one concept of knowledge or training of skill practice is mixed up within every single practice session as in Figure 4.

The use of purely interleaved practice can be seen in the study of Nakata and Suzuki (2019) as in Figure 5 and Suzuki and Sunada (2020) in Figure 6, for example.



*Figure 4 Model of Purely Interleaved Practice Compared to Blocked Practice*

However, Kang (2017) had raised a question to what degree of intensity of the purely interleaved practice should be used and implemented and whether it has to have more than one skill mixed up within every single practice session. He also

suggested there was evidence that purely interleaved practice is not a suitable lesson for students who are new to the topic or skill training. For beginners, the use of blocked practice is more suitable to begin with by grouping items of the same topic or skill together at first. This would help scaffold students to detect the commonalities of the concepts and the sense of fluency in the skills.

Interleaved condition

1. Simple past	2. Present perfect	3. 1st conditional	4. 2nd conditional	5. 3rd conditional
6. 2nd conditional	7. Simple past	8. 1st conditional	9. Present perfect	10. 3rd conditional
11. Simple past	12. 2nd conditional	13. 1st conditional	14. Present perfect	15. 3rd conditional
16. Simple past	17. Present perfect	18. 3rd conditional	19. 2nd conditional	20. 1st conditional
21. Present perfect	22. Simple past	23. 3rd conditional	24. 2nd conditional	25. 1st conditional
26. 3rd conditional	27. 2nd conditional	28. Simple past	29. 1st conditional	30. Present perfect
31. Simple past	32. 1st conditional	33. 2nd conditional	34. Present perfect	35. 3rd conditional
36. Present perfect	37. 3rd conditional	38. Simple past	39. 2nd conditional	40. 1st conditional
41. Simple past	42. 1st conditional	43. Present perfect	44. 3rd conditional	45. 2nd conditional
46. Simple past	47. Present perfect	48. 1st conditional	49. 2nd conditional	50. 3rd conditional

*Figure 5 Sample Item Orders in Interleaved Condition of Nakata and Suzuki's Study (Nakata and Suzuki, 2019)*

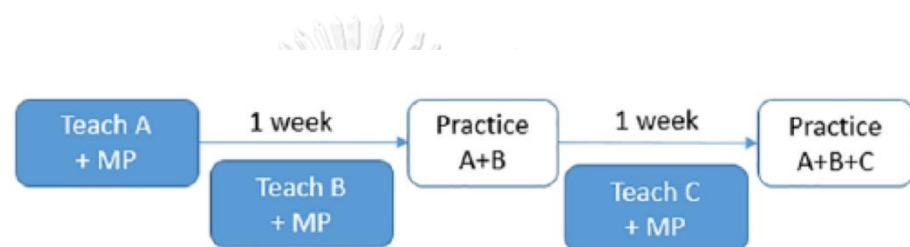
Interleaved practice

SR-who	SR-which	OR-whom	OR-which	OR-whom	SR-which	OR-which	SR-who	SR-which	OR-whom	SR-who	OR-which	OR-whom	SR-which	SR-who	OR-which
SR-who	SR-which	OR-which	OR-whom	SR-which	SR-who	OR-which	OR-whom	SR-who	OR-which	SR-which	OR-whom	SR-which	SR-who	OR-whom	OR-which
SR-who	SR-which	OR-whom	OR-which	SR-who	OR-which	OR-whom	SR-which	OR-which	SR-which	SR-who	OR-whom	SR-which	OR-whom	OR-which	SR-who
SR-which	OR-whom	OR-which	SR-who	OR-whom	SR-which	SR-who	OR-which	OR-whom	SR-which	SR-who	OR-which	SR-who	SR-which	OR-whom	OR-which

*Figure 6 Sample Item Orders in Interleaved Condition of Suzuki and Sunada's Study (Suzuki and Sunada, 2020)*

Along with Kang's (2017) suggestion on exploiting both the blocked practice and interleaved practice benefits, Hughes and Lee (2019) proposed a model for teachers in a real classroom to apply the use of **interleaved practice in a cumulative schedule** by providing a certain amount of blocked practice when a new topic being

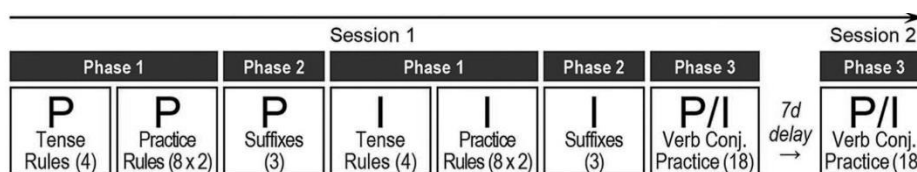
introduced to reduce learner anxiety and increase self-efficacy before the interleaved practice as in Figure 7. The advantage of this lesson design would help learners understand the fundamental concepts necessary for the lessons. When the learners' knowledge improves, more challenging practice must be provided where learners' knowledge and skills match the demand and that was when the interleaved practiced was implemented after two sessions of the blocked practice.



Note. MP = Massed practice.

*Figure 7 Model of Teaching Three Topics with Interleaved Practice in a Cumulative Schedule (Hughes & Lee, 2019)*

There were also studies with interleaved practice in a cumulative schedule done in the field of language teaching such as the study of Pan et al. (2019) that taught all aspects of conjugating Spanish verbs in the *preterite* (P) past tenses first and in the *imperfect* (I) past tenses later in Phase 1 and 2 before the interleaved practice in Phase 3 and the review session of P and I in the interleaved practice a week later as the model in Figure 8.



*Figure 8 Model of Training Session Designs of Interleaved Practice in a Cumulative Schedule (Pan et al., 2019)*

Due to the benefits of interleaved practice with a cumulative schedule, this model was chosen to be employed in the present study as it would be a suitable design for Thai EFL lower secondary school students whose English proficiency is still not strong and most of the students are classified as upper beginners as stated by MOE of Thailand (2008) that when finishing Grade 9, the students' English proficiency must at least be at A2 levels of the criteria by CEFR (Council of Europe, 2001). Hence, the interleaved FFI in a cumulative schedule was elaborated in the section.

#### 2.4 Interleaved Form-Focused Instruction in Cumulative Schedule

To explain what interleaved lesson in a cumulative schedule is, the clear explanation was proposed by Hughes and Lee (2019) who stated, "When using interleaved practice, related skills should have already been selected, taught to initial mastery, practiced once or more in a massed format, and followed by cumulative practice; it is impossible to interleave if the practice is not cumulative... (p.419)." As the aforementioned on the effectiveness of interleaved practice that enhances the discriminating similarity across different categories resulting in better accuracy and long-term retention, traditional lessons or blocked practice is not out of its advantages. Blocked practice has been shown to aid in identifying the commonalities within the same category (Suzuki & Sunada, 2020) which brought about the automatization for the skills being practiced. Therefore, these advantages of both types of practice can be

exploited with the cumulative schedule – combining both blocked and interleaved. For example, L2 English learners can first practice Topic A and Topic B in the blocked schedule. When they have enough familiarity and confidence, then the interleaved practice is introduced.

For the studies of interleaved practice in a cumulative schedule, the studies of Pan et al. (2019), Nakata and Suzuki (2019), and Suzuki and Sunada (2020) have confirmed the positive results of using interleaved practice in a cumulative schedule to teach grammar and language rules. In Pan et al.'s study (2019), 86 participants at age 17 – 53 years old studied conjugating Spanish verbs in the *preterite* and *imperfect* past tenses by being divided into two groups: the interleaved practice group and traditional one as shown in Figure 9. As in Figure 9, it showed that participants in the interleaved group had learned the lesson in cumulative schedule – “P” for three lessons and “I” for another three lessons before “P/I” in the last two lessons. The results of this study showed the group with interleaved lessons in cumulative schedule had better knowledge retention and they performed substantially better on a one-week delayed test than the control group.

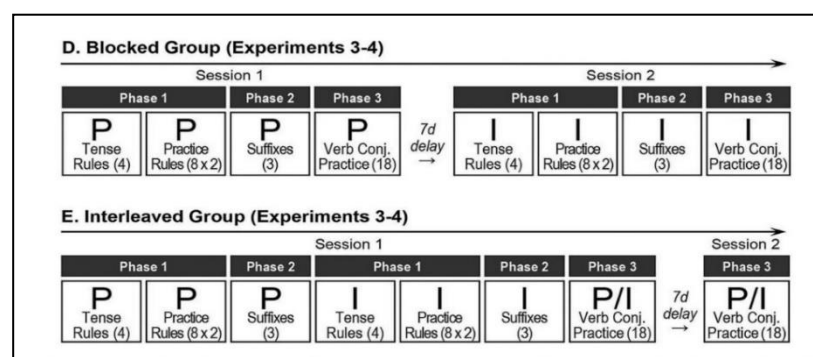


Figure 9 Schematic Timeline of the Training Session Designs (Pan et al., 2019)

Moreover, in Nakata and Suzuki's study (2019), 115 Japanese students at age 18 – 22 studied were divided into three groups: 1) Blocked (traditional lessons) practice, 2) Interleaved practice, and 3) Increasing practice (mixing blocked and interleaved practices or also called interleaved practice with a cumulative schedule by Hughes and Lee (2019) as shown in Figure 10.

Blocked condition				
1. Simple past	2. Simple past	3. Simple past	4. Simple past	5. Simple past
6. Simple past	7. Simple past	8. Simple past	9. Simple past	10. Simple past
11. Present perfect	12. Present perfect	13. Present perfect	14. Present perfect	15. Present perfect
16. Present perfect	17. Present perfect	18. Present perfect	19. Present perfect	20. Present perfect
21. 1st conditional	22. 1st conditional	23. 1st conditional	24. 1st conditional	25. 1st conditional
26. 1st conditional	27. 1st conditional	28. 1st conditional	29. 1st conditional	30. 1st conditional
31. 2nd conditional	32. 2nd conditional	33. 2nd conditional	34. 2nd conditional	35. 2nd conditional
36. 2nd conditional	37. 2nd conditional	38. 2nd conditional	39. 2nd conditional	40. 2nd conditional
41. 3rd conditional	42. 3rd conditional	43. 3rd conditional	44. 3rd conditional	45. 3rd conditional
46. 3rd conditional	47. 3rd conditional	48. 3rd conditional	49. 3rd conditional	50. 3rd conditional

Interleaved condition				
1. Simple past	2. Present perfect	3. 1st conditional	4. 2nd conditional	5. 3rd conditional
6. 2nd conditional	7. Simple past	8. 1st conditional	9. Present perfect	10. 3rd conditional
11. Simple past	12. 2nd conditional	13. 1st conditional	14. Present perfect	15. 3rd conditional
16. Simple past	17. Present perfect	18. 3rd conditional	19. 2nd conditional	20. 1st conditional
21. Present perfect	22. Simple past	23. 3rd conditional	24. 2nd conditional	25. 1st conditional
26. 3rd conditional	27. 2nd conditional	28. Simple past	29. 1st conditional	30. Present perfect
31. Simple past	32. 1st conditional	33. 2nd conditional	34. Present perfect	35. 3rd conditional
36. Present perfect	37. 3rd conditional	38. Simple past	39. 2nd conditional	40. 1st conditional
41. Simple past	42. 1st conditional	43. Present perfect	44. 3rd conditional	45. 2nd conditional
46. Simple past	47. Present perfect	48. 1st conditional	49. 2nd conditional	50. 3rd conditional

Increasing condition				
1. Simple past	2. Simple past	3. Simple past	4. Simple past	5. Simple past
6. Present perfect	7. Present perfect	8. Present perfect	9. Present perfect	10. Present perfect
11. 1st conditional	12. 1st conditional	13. 1st conditional	14. 1st conditional	15. 1st conditional
16. 2nd conditional	17. 2nd conditional	18. 2nd conditional	19. 2nd conditional	20. 2nd conditional
21. 3rd conditional	22. 3rd conditional	23. 3rd conditional	24. 3rd conditional	25. 3rd conditional
26. 3rd conditional	27. 2nd conditional	28. Simple past	29. 1st conditional	30. Present perfect
31. Simple past	32. 1st conditional	33. 2nd conditional	34. Present perfect	35. 3rd conditional
36. Present perfect	37. 3rd conditional	38. Simple past	39. 2nd conditional	40. 1st conditional
41. Simple past	42. 1st conditional	43. Present perfect	44. 3rd conditional	45. 2nd conditional
46. Simple past	47. Present perfect	48. 1st conditional	49. 2nd conditional	50. 3rd conditional

*Figure 10 Sample Item Orders in the Blocked, Interleaved, and Increasing Conditions (Nakata and Suzuki, 2019)*

The participants had to learn five English grammatical structures and the study used a grammaticality judgement test to assess the result. With interleaved lessons, learners have to learn and practice between a set of to-be-learned skills. The goal of the lessons was for the learners to use conditional sentences accurately, meaningfully, and appropriately in different contexts and settings. Then the interleaved lessons involve having the learners practice with situations requiring different types of conditions to be used. This means they must know the different forms of each condition and have to always analyze which kind of setting requires which type of a specific condition. In contrast, in traditional lessons, the learners only practice on an entire set of problems discretely for each situation such as having the learners complete practicing the exercise containing only one type of the first conditional sentences before moving onto the second conditional ones. This means variance in training is minimized or nonexistent as the learners solely deal with one type of a situation and this process is marked as low levels of cognitive interference lessons. However, the increasing condition was in the middle of the two continuums that the practice starting with blocked design and following by the interleaved. The finding of this study showed that interleaved lessons with a cumulative schedule – increasing condition – better enhanced L2 grammar learning and long-term retention than the blocked and interleaved groups.

The study of Suzuki and Sunada (2020) investigated the effectiveness of different practice schedules – blocked, interleaved, and hybrid (combining blocked and interleaved) practice for the acquisition of relative-clause structures. The participants were 155 Japanese university students enrolling in English classes. The participants were randomly divided into groups receiving different practice schedules

– blocked, interleaved, and hybrid – as shown in Figure 11. The study was conducted during the two hours of the regular class time that the participants had to take a pre-test, have the training section, and do the immediate post-test, and a week later, the participants had to take the delayed post-test to assess the retention of the acquired grammatical knowledge. The result indicated that the group receiving hybrid practice outperformed the blocked and interleaved in terms of comprehension speed (in both immediate post-test and delayed post-test) and production accuracy (only in immediate post-test).

According to the findings in many studies, students in those studies perceived that the traditional method was easier to study and more effective to learn even though the results from the research revealed otherwise (Kang, 2016; Pan et al., 2019; Nakata & Suzuki, 2019). Due to the nature of the interleaved lessons and interleaving effects, the literature showed that after having studied with both interleaved and traditional practice, the learners tended to favor the latter and think that the traditional lessons were more effective as the consecutive repetition of the traditional lessons provided the sense of fluency and the feeling of the gains in learning (Abushanab & Bishata, 2013; Kang, 2017; Kornell and Bjork, 2008). Moreover, during the course or practice, it is possible that interleaved lessons may yield poorer performance than the traditional ones as interference from other concepts or skills can overwhelm the learners (Pan et al., 2019). There were also few studies revealing that the interleaved method could even harm the learning process (e.g. Magill & Hall, 1990).



Blocked practice

SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who
SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which
OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom
OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which

Interleaved practice

SR-who	SR-which	OR-whom	OR-which	OR-whom	SR-which	OR-which	SR-who	SR-which	OR-whom	SR-who	OR-which	OR-whom	SR-which	SR-who	OR-which
SR-who	SR-which	OR-which	OR-whom	SR-which	SR-who	OR-which	OR-whom	SR-who	OR-which	SR-which	OR-whom	SR-which	SR-who	OR-whom	OR-which
SR-who	SR-which	OR-whom	OR-which	SR-who	OR-which	OR-whom	SR-which	OR-which	SR-which	SR-who	OR-whom	SR-which	OR-whom	OR-which	SR-who
SR-which	OR-whom	OR-which	SR-who	OR-whom	SR-which	SR-who	OR-which	OR-whom	SR-which	SR-who	OR-which	SR-who	SR-which	OR-whom	OR-which

Hybrid practice

SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-who	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which	SR-which
OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-whom	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which	OR-which
SR-who	SR-which	OR-whom	OR-which	SR-who	OR-which	OR-whom	SR-which	OR-which	SR-which	SR-who	OR-whom	SR-which	OR-whom	OR-which	SR-who
SR-which	OR-whom	OR-which	SR-who	OR-whom	SR-which	SR-who	OR-which	OR-whom	SR-which	SR-who	OR-which	SR-who	SR-which	OR-whom	OR-which

*Figure 11 Practice Schedules (Suzuki and Sunada, 2020).*

Note. SR = Subject of the relative clause (RC), OR = object of RC

However, according to skill acquisition theory (Dekeyser, 2015), in order to develop the skill to be performed automatically in real-world situations, extensive and deliberate practice is an essential key. Furthermore, with both interleaving effect and spacing effect, many studies have confirmed the superior long-term retention and showed that the interleaved lessons can better prepare the language learners for the use of the language in real-world situations where there is no context needing merely one skill to be used existing. In the real world, learners have to always analyze the context in order to synthesize the accurate, meaningful, and appropriate outcome to successfully complete the conversation.

### 3. Past Simple and Present Perfect

#### 3.1 Past Simple: Forms

In an affirmative sentence, Past Simple of regular verbs is formed by adding *-ed*, also called past tense marker, to the infinitive form of verbs (e.g., *call - called*) and regular verbs ending in *-e* simply add *-d* (e.g., *decide - decided*). For verbs ending in one stressed vowel and one consonant (except *w* and *y*), it is formed by doubling the final consonant and adding *-ed* (e.g., *shop - shopped, nod - nodded, plan - planned, refer - referred, and occur - occurred*). For verbs ending in consonant *-y*, it is formed by changing *-y* to *-i* and adding *-ed* (e.g., *hurry - hurried, cry - cried, study - studied, play - played, and die - died*) (Schoenberg, 2006).

Noted that, in English, there are also irregular verbs that are not formed by adding *-ed* but by either changing form (e.g., *take - took*) or staying unchanged (e.g., *hit - hit*). Common irregular verbs are listed in Appendix A-2 (page 161).

In a negative sentence, it is formed with the auxiliary verb *did* and *not* before the finite verb in the infinitive form, which can be contracted to *didn't* in speech and informal writing (e.g., ...*did not call* / ...*didn't call* and ...*did not take* / ...*didn't take*).

In an interrogative sentence, it is formed by putting the auxiliary verb *did* before the subject of the sentence following by the finite verb in the infinitive form and ending the sentence with a question mark (e.g., *Did Jeana call* you last night?)

and *Did he take* my umbrella?). The way to answer yes/no questions is to repeat the auxiliary verb *did* (e.g., Did Jeana call you last night? / *Yes, she did* or *No, she didn't*)

However, the auxiliary verb 'be' is an irregular verb that follows different patterns in forming a negative or an interrogative sentence. To form a negative sentence, *not* is put right after *was/were* which can be contracted to *wasn't/weren't* in speech and informal writing (e.g., They *were not* in Tokyo yesterday / They *weren't* in Tokyo yesterday). To form an interrogative sentence, *was/were* is moved to be placed before the subject of the sentence (e.g., *Were they* in Tokyo yesterday?) (Fuchs, Bonner, & Westheimer, 2006; Hashemi & Thomas, 2013; Schoenberg, 2006).

The forms of Past Simple tense can be concluded as shown below:

- Affirmative form: S + past tense verb (V.2)

= Natee *ate* pizza yesterday.

- Negative form: S + did + not + V.infinitive (V.inf)

= Natee *did not eat* pizza yesterday.

**Except for** 'V.to be': S + was/were + not + ...

= She *was not* your student.

- Interrogative form: Did + S + V.inf...?

= *Did Natee eat* pizza yesterday?

**Except for** 'V.to be': Was/Were + S + ...?

= *Was she* your student?

### 3.2 Past Simple: Meanings and Uses

1. Past Simple is used to talk about completed actions or tell stories that happen and already end in the past (Schoenberg, 2006) as shown in Figure 12.



Figure 12 Timeline of completed actions in the past

Example sentences:

- I **watched** this movie yesterday.
- The first time that Sue **met** Jim **was** last year.

2. Past Simple is used to talk about general facts that no longer happen as shown in Figure 13.

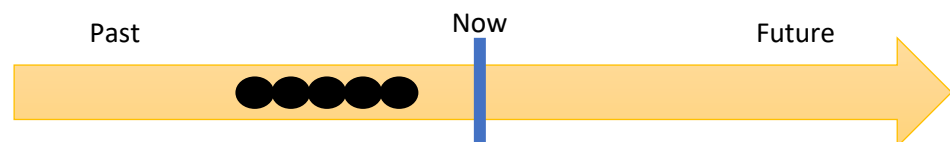


Figure 13 Timeline of general facts that no longer happen

Example sentences:

- People *believed* that the world was flat.
- Ayutthaya *was* the capital city of ancient Siam.

3. Past Simple is used to talk about habits and repeated actions in the past (Schoenberg, 2006) as shown in Figure 14.

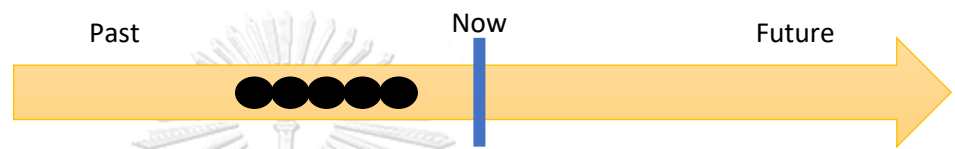


Figure 14 Timeline of habits and repeated actions in the past

Example sentences:

- *When I was a child*, I *got up* at 6 a.m. every day.
- Anna *was* very shy *when she was young*.

Moreover, the structure *S + used to + V.inf* is also used to talk about past habits and states which no longer happen at present (Hashemi & Thomas, 2013) as shown in Figure 14. The forms of this structure and example sentences are as shown below:

- Affirmative form:                    *S + used to + V.inf*

= James *used to smoke*, but now he doesn't.

- Negative form:                        *S + did + not + use to + V.inf*

= James *did not use to smoke* when he was at college.

- Interrogative form: Did + S + use to + V.inf...?

= *Did* James *use to smoke* when he was at college?

In Past Simple tense, there are usually *time markers*, also called *adverbs of time*, which can be placed at the beginning or at the end of the statement in affirmative and negative sentences (e.g., We went to Central Pinklao *yesterday* or *Yesterday* we did not go to Central Pinklao.) and usually placed at the end in interrogative sentences (e.g., Did you go to Central Pinklao *yesterday*?) (Fuchs et al., 2006).

### 3.3 Present Perfect: Forms

In an affirmative sentence, Present Perfect is formed by adding auxiliary verbs *have/has* before the finite verb in a past participle form (V.3), also called past participle marker. For regular verbs, the past participle form is made by adding *-ed* to the infinitive form of verbs (e.g., *call – called*) and regular verbs ending in *-e* simply add *-d* (e.g., *decide – decided*). For verbs ending in one stressed vowel and one consonant (except *w* and *y*), it is formed by doubling the final consonant and adding *-ed* (e.g., *shop – shopped, nod – nodded, plan – planned, refer – referred, and occur – occurred*). For verbs ending in consonant *-y*, it is formed by changing *-y* to *-i* and adding *-ed* (e.g., *hurry – hurried, cry – cried, study – studied, play – played, and die – died*), just as how to form past tense verbs (V.2) with past tense marker (Swan, 2015).

Noted that, in English, there are also irregular verbs that are not formed by adding *-ed* but by either changing form (e.g., *take – took – taken*) or staying

unchanged (e.g., *hit – hit - hit*). Common irregular verbs are listed in Appendix A-2 (page 161).

In a negative sentence, it is formed adding *not* or *never* after the auxiliary verb *have/has* and before the finite verb in the in past participle form, which can be contracted to *haven't / hasn't* in speech and informal writing (e.g., ...*have not called* / ...*haven't called* and ...*has not taken* / ...*hasn't taken*).

In an interrogative sentence, it is formed by moving the auxiliary verb *have/has* to be placed before the subject of the sentence and ending the sentence with a question mark (e.g., *Has Jeana called* you yet? and *Have they finished* their work?). The way to answer yes/no questions is to repeat the auxiliary verb *have/has* (e.g., Has Jeana called you yet? / *Yes, she has* or *No, she hasn't*) (Fuchs et al., 2006)

The forms of Past Simple tense can be concluded as shown below:

- Affirmative form: S + have/has + past participle verb (V.3)  
= Natee *has talked* to the manager.
- Negative form: S + have/has + not/never + V.3  
= Natee *has not talked* to the manager.
- Interrogative form: Have/Has + S + V.3...?  
= *Has Natee talked* to manager?

### 3.4 Present Perfect: Meanings and Uses

1. Present Perfect is used to talk about a situation that began in the past and continues into the present (and may continue into the future), as shown in Figure 15, with time markers *since* and *for* (Swan, 2015).

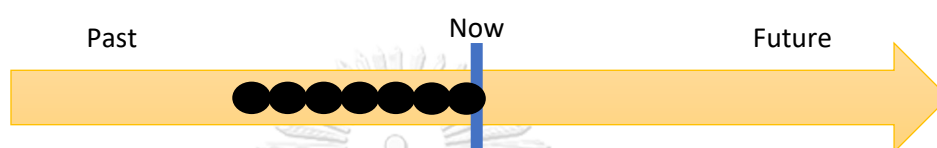


Figure 15 Timeline of situations that began in the past and continues into the present

Example sentences:

- Naree ***has taught*** at this school ***since 2018***.
- Naree ***has not taught*** at this school ***for three years***, but ***for five years*** already.

2. Present Perfect is used to talk a situation which emphasizes that it has just finished or ended before now as shown in Figure 16 with time markers *already* and *yet* (Swan, 2015).

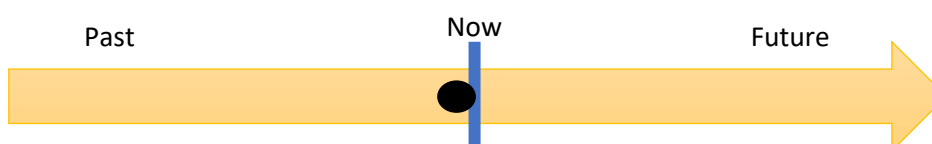


Figure 16 Timeline of situations emphasizing that it has just finished



Example sentences:

- I **have already finished** my homework.

- **Have** you **finished** your homework **yet**?

3. Present Perfect is used to talk about experiences that happened once, twice, or only a few times in the past as shown in Figure 17, unlike the structure of *used to* + *V.inf* that is used to talk about past habits and repeated actions occurring often in the past, but no longer happen at present. When Present Perfect is used to talk about experience, it is usually used with adverbs like *once*, *twice*, *three times*, *never*, *ever*, etc. *Never* is used instead of *not* to emphasize that the action or state never happens before, and *ever* is only used in an interrogative sentence meaning that at any time up until now (Swan, 2015).



Figure 17 Timeline of situations talking about experiences

Example sentences:

- They **have been** to Singapore **twice**.

- They **have never been** to Singapore.

- **Have** they **ever been** to Singapore?

As mentioned earlier about the importance of learning FFI, learning about verbs is one of the most crucial lessons for EFL learners. Verbs in English provide information about whether the situations are in the past, at present, or in the future which is marked by inserting modal auxiliary such as ‘will’ before the finite verb; therefore, English tenses are marked on all verb forms (Huddleston & Pullum, 2002). According to O’Grady (2006), English verbal markers are normally described as easy, simple, transparent, and straightforward; for example, a verb with the ‘-s’ marker indicates that it is a present simple tense marker that can only be used with Third-person singular subject and it is always finite as the following example:

- He **reads** a lot of books.

However, some English verbs in written forms can be confusing such as the sentence below:

- They **read** a lot of books.

The verb ‘read’ in this sentence can either be with the marker of present simple tense that can be used with a plural subject, as well as the first person singular subject and is pronounced / ri:d / as in:

- Students **read** a lot of books.

- I **read** a lot of books.

or be with the marker past simple tense that can be used with any English subject and is pronounced / red / as in:

- He **read** a lot of books [last week].

- They *read* a lot of books [last week].
- Students *read* a lot of books [last week].
- I *read* a lot of books [last week].

Due to many studies conducted on Thai EFL students, it pointed out that the majority of Thai EFL students face difficulty in the appropriate use of English tenses as shown below:

Watcharapunyawong and Usaha (2013) analyzed 120 English paragraphs written by 40 second-year English major students. The errors found in the study were grouped into 16 classes: verb tense, word choice, sentence structure, article, preposition, modal/auxiliary, singular/plural forms, and so forth.

In Hinnon's (2015) study, the author reviewed the studies of errors in writing committed by Thai university students within 10 years (2004 - 2014) and concluded that most of the errors detected from students' output were grammatical errors – especially verb-tenses which were the most frequent errors, syntactic errors, semantic errors, and lack of transitional words, respectively.

Promsupa, Varasarin, and Brudhiprabha (2017) found 2,218 grammatical errors from 34 English essays written by Thai second-year English major and categorized those errors into 2 classes: morphological errors and syntactic errors. For morphological errors, the errors were divided into 16 subtypes, namely noun form errors, singular/plural errors, subject-verb agreement errors, and adjective/ adverb errors. For syntactic errors, there were also 16 subtypes such as run-on/ comma splice errors, fragment errors, omission of subjects error, and 'There' structure errors.

Sermsook et al. (2017) reported that the most committed errors made by the second-year English major students in the Writing II course were punctuations, articles, subject-verb agreement, spelling, capitalization, and fragment, respectively.

Sukasame, Kantho, and Narrot (2014) studied the errors of English tenses made by Thai EFL students in Grade 10<sup>th</sup> and found that the first four frequent errors regarding the use of English tenses were Past Perfect, Past Simple, Present Perfect, and Past Continuous respectively.

As Bennui (2008) suggested the causes of errors made by Thai EFL students on English tenses might derive from the first language interference that the students translated Thai words into English with the use of Thai grammar such as tenses, subject-verb agreement, articles, and prepositions in their English writing. Consequently, it is important that explicit FFI on English tenses, especially Past Simple and Present Perfect tense be provided to Thai EFL students so that they will be able to use the correct forms, understand the meanings and know how and when to use these two tenses properly.

#### 4. Grammatical Knowledge

##### 4.1 What is Grammar?

Many scholars agree that the question, “what is grammar?” may sound simple, but in fact, it is one of the most ambiguous terms to define in language teaching and learning; for example, on the one end of the continuum, ‘grammar’ is thought to be synonymous to ‘language’ meaning that people who master grammar know the language well, while ‘grammar,’ on the other end, is only defined as sets of

unnecessary rules taught at school (Lobeck, 2014; Nunan, 2012; Sinclair, 2010). Even among language specialists, the definition of grammar also varies as followed:

“... rules in English concerning the sequence of sounds within a word. Similarly, there are rules for the arrangement of words within a sentence, ... The term grammar is often used to refer to the complete set of rules needed to produce all the regular patterns in a given language or can be said as all the structural properties of language except sound structure (phonology) such as the structure of words, phrase, sentences, texts, etc.” (Kroeger, 2013, p.5)

“The heart of language is the abstract level of coding that is the **lexicogrammar**. (I see no reason why we should not retain the term 'grammar' in this, its traditional sense; the purpose of introducing the more cumbersome term *lexicogrammar* is simply to make explicit the point that vocabulary is also a part of it, along with syntax and morphology) (Halliday & Webster, 2003, p.194)

“... an English expression is “grammatical” means only that it is the kind of English you might expect to hear from a native speaker – no matter at what social level or in which native dialect. An “ungrammatical” expression, by contrast, is one which you would never expect to hear a native speaker utter, regardless of geographical location or level of education.” (La Palombara, 1976, p.105).

“In the communication perspective, grammar is treated as one of many resources for accomplishing something with language, and grammarians describe both what linguistic forms are for and how they are used to create meaning within and beyond the sentence.” (Purpura, 2013, p.7)

According to the various definitions coined by the specialists, grammar, in brief, can be concluded, as in Larsen-Freeman's (2009) statement, it is a large language element that can be divided into three interleaving perspectives: form, meaning, and use. For form, as Bornstein's (1997), Chomsky & Lightfoot's (2002), Purpura's, 2013, Kroeger's (2013) point of view, grammar is a rule providing directions to form words and to string words together in order to create new sentences or a part of a sentence so that grammar in this sense concerns the knowledge of how to form words correctly (morphology), how to classify words into classes (word classes), how to use words in the conventional ways (grammatical rules), and how to put words together into sentences (syntax).

For meaning, grammar is viewed as a system used to send the idea across in communication which a speaker or writer uses to convey a number of meanings such as how differences of meaning are conveyed when different tenses, different aspects (active or passive voice), different word orders, or even different sentence structures (affirmative, imperative, interrogative, negative, or causative) are used (DeKeyser, 2005; Halliday & Webster, 2002; Purpura, 2013).

For use, this aspect is undoubtedly the core of why grammar or FFI must be taught in a CLT approach as the purpose of these lessons is to reflect real language use outside the classroom (Savage et al., 2010). Students learn the relationship between language and context (pragmatics) including how to interpret language in different settings and how to use language properly (appropriateness, cultural factors, social status, etc.) (Larsen-Freeman, 2009). To illustrate the importance of the use, when the lesson about modal verbs is taught, all of the lessons about the form and the

meaning of different modal verbs are meaningless unless learners know and are able to select which modal verb is proper for a particular situation and context.

#### 4.2 What is Grammatical Knowledge?

According to Bachman (1990, 1996) and Purpura (2013), in order to understand what grammatical knowledge is, all these terms must be distinguished and identified clearly: knowledge, language knowledge, grammar, and grammatical knowledge as explained below:

**Knowledge** refers to a set of information structures and stored in long-term memory as a result of experience gaining over time.

**Language knowledge** is informational structures stored in long-term memory related to language.

**Grammar** refers to a system of language used to string parts of language together and make those encoded messages meaningful which can be divided into three interleaving perspectives: form, meaning, and use.

**Grammatical knowledge** is informational structures of a language stored in long-term memory which relates to the theoretical model of grammar that is used to string parts of language together and make those encoded messages meaningful. In conclusion, grammatical knowledge is information stored in long-term memory regarding form, meaning, and use of a language.

The language user must understand aspects of **grammatical knowledge** which are comprised of the understanding of syntax, semantics, morphology, and phonetics and phonology as well as pragmatics, cultural awareness,

language appropriateness, and communication strategies in order to produce the message accurately and meaningfully in language-use situations or in language testing.

#### 4.3 How to assess grammatical knowledge

##### To Assess Forms

A grammaticality judgement test (GJT) is a kind of selected-response assessments in which the input in the form of items is presented to the test-takers to be chosen such as multiple-choice gap-filling test, cloze test, error identification test, and matching test (Purpura, 2013). For GJTs, the test-takers must decide whether the sentences presented are grammatically correct or not. GJTs have long been used in the field of language acquisition for both L1 and L2 to investigate the grammatical knowledge of specific structures, to test the hypothesis in second language acquisition, and to find out the metalinguistic or grammatical knowledge of the language learners (R. Ellis, 2001; Leow, 1996; Shiu, Yalçın, & Spada, 2018). By using GJTs, it allows researchers to investigate the mental processes that make learning possible (Bley-Vroman, Feflix, and Ioup, 1988 cited in Leow, 1996). R. Ellis (2004) has proposed that in order for the test-takers to make grammaticality judgements, there are three processes happening in the test-takers' mind. First, the stage of semantic processing happens when the test-takers try to understand the meaning of the parts of and the whole sentence. Second, the noticing stage is a process in which the test-takers try to detect if there is anything ungrammatical in the sentence. If there is no grammatical error, they can make judgement at this point. However, if they notice the errors, then comes the third stage – reflection. At the



reflection stage, the test-takers have to reflect on why that particular sentence is incorrect to confirm their initial detection. Therefore, this metalinguistic or grammatical knowledge can reflect and forecast the accuracy of the test-takers' performance (R. Ellis, 2004; Gass, 1994; Leow, 1996).

However, there has been some debate regarding the validity and reliability of GJTs that the test-takers' judgement can be inconsistent and unreliable when they are unsure, and it cannot really represent the test-takers' interlanguage and performance. (R. Ellis, 2004; Gass, 1994; Leow, 1996). Moreover, there were also studies claiming that there was no relationship found between the accuracy of learners' performance and the scores of GJTs as in Green & Hecht's (1992) study, for example.

To respond to the doubt towards the validity and reliability of GJTs, many research studies have been conducted such as in Gass's (1994) study, 23 students studying English as an L2 were requested to make grammaticality judgements on 30 sentences and answer a scale of +3 to -3 to record their confidence and those students had to do the parallel test again in the following week. After the following test, four of the participants had to take the oral test on the same topic and were also interviewed. The study found the statistical correlation for both dichotomous judgements and also found a relationship between the comparison of GJT scores and the oral production task of the test-takers. From the result of her study, Gass (1994) concluded, "[GTJs] are indeed reflective of patterns of second-language use (p.320)" and there was a strong reliability of GJTs between the results of GJTs and the test-takers' oral performance. Vafae, Suzuki, & Kachisnke's (2016) study was to find the validation of GJTs by combining different stimulus types (grammatical vs. ungrammatical) and

time conditions (timed and untimed) with 79 learners of English as L2 and the results confirmed that GJTs can measure students' grammatical knowledge. Like Vafae et al.'s (2016) study, Shiu et al. (2018) investigated the relation of L2's grammaticality judgement performance and task design features by having 120 EFL students judge 60 items of GJTs with timed vs. untimed conditions and aural vs. written dimensions and the results indicated that GJT score can help forecast the level of the accuracy in the test-takers' performance.

Consequently, according to positive results from a number of previous studies regarding the validity and reliability of GJTs, the present employed GJT as a tool to assess the participants' grammatical knowledge on the forms of Past Simple and Present Perfect tense.

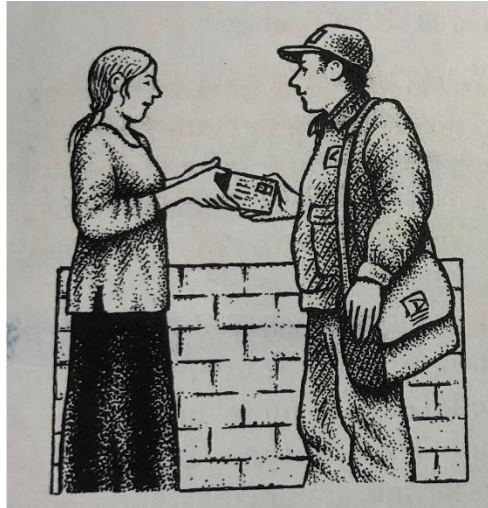
#### To Assess Meanings and Uses

A discrimination test provides two polar-opposite response choices in either language or non-language input forms in which the test-takers have to select whether it is true-false, right-wrong, agree-disagree, and so forth (Purpura, 2013). The example of A discrimination test is shown in Figure 18.

The primary strength of the discrimination test such as true-false items is that they focus on the students' abilities to select the correct answer from two alternatives. Thus the true-false test can be used to investigate the indicators of whether the test-takers understand that particular point of the test. However, with the test design with only two choices, a relatively large guessing factor is another problem as the examinees have a 50% chance of answering correctly even if they do not know the

answer. Therefore, if the test is carefully designed, the overall score should overcome much of the guessing factor's influence (J. D. Brown & Hudson, 1998).

**Direction: Decide whether the sentence is 'true' or 'false'**



He has just received a parcel from a postman.

a. True

b. False

*Figure 18 The example of a discrimination test (Purpura, 2013)*

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Like GJT, the True-False test has been studied on its validity of using as a testing tool since the 1940s, and its value has been well documented (Dudley, 2006). Gronlund, Linn, and Miller (2009) claimed that true-false items can be used to measure a broad range of verbal knowledge. In developing the true-false item test, Gronlund et al. (2009) suggested means to design true-false items for the test. The test-maker must 1) avoid broad, general, and unimportant statements, 2) avoid too long sentences, 3) avoid including two ideas in one statement, 4) make the true-false

statement more or less identical in length. According to positive results from previous studies regarding the validity and reliability of discrimination tests, the present employed it as a tool to assess the participants' grammatical knowledge on the meanings and uses of Past Simple and Present Perfect tense.

Therefore, due to the time constraint in collecting the data in the classroom and the concern of the test design that must be suitable for measuring grammatical knowledge, the GJT and discrimination test are chosen as a tool to collect the data to find the effects of interleaved FFI on the improvement of the grammatical knowledge gained from the treatment and the long-term retention of the grammatical knowledge in all three aspects: form, meaning, and use.

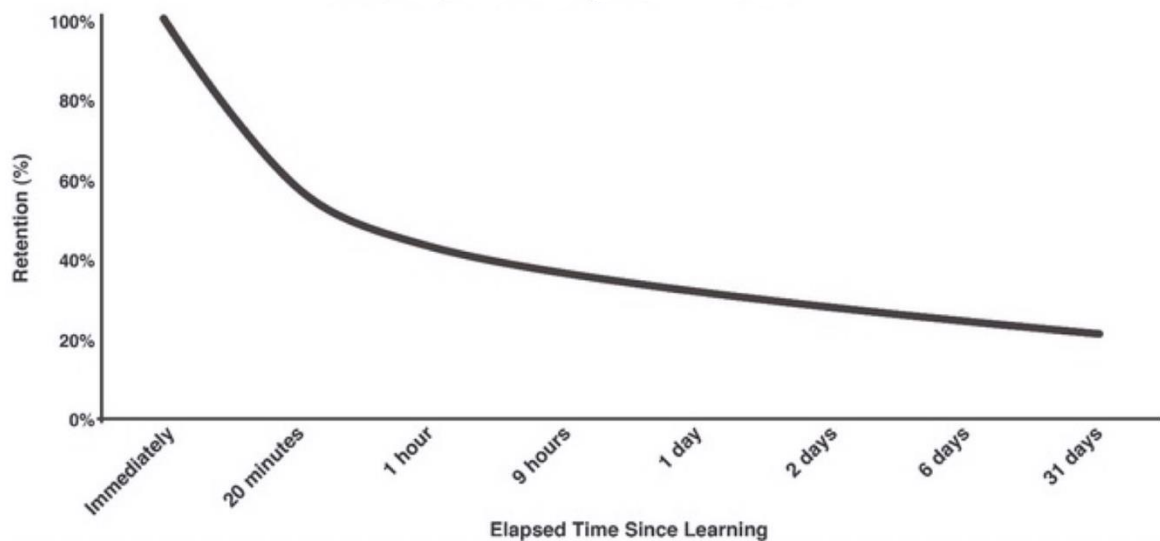
## 5. Long-Term Retention of the Knowledge

### 5.1 What is long-term retention of the knowledge?

Long-term retention of the knowledge refers to declarative memories that store explicit information such as names, dates, locations, and words (Bechtold, Hoffman, Brodersen, & Tung, 2018; Farr, 2012). Declarative memories or retention of knowledge is divided into two sub-types: semantic and episodic. Semantic memories are independent general facts and knowledge regardless of context and personal relevance; on the other hand, episodic memories are related to context and experiences and personal background that each individual has (Bechtold et al., 2018). Cowan (2008) stated that when talking about the origin of a scientific study of memory, it is usually traced back to Hermann Ebbinghaus's (1913, cited Cowan, 2008) research on how the brain acquires and loses new information and memory

curve as in Figure 19. The result in his study showed that people usually forgot more than 50% of newly learned knowledge in 20 minutes after the session ended, 60% in nine hours, and only 24% of the knowledge remained after 31 days (Shail, 2019).

Many research studies suggested that in order to diminish the rate of losing newly acquired memory, memory retention can be enhanced when there are stimuli aiding to create connections with the amygdala nuclei and neuronal fibers to strengthen the process of changing short-term memory to long-term memory (Cowan, 2008; Shail, 2019). According to Kang (2017), there were already hundreds of studies in cognitive and educational psychology proving that spacing effect and interleaving effect produce superior long-term retention.



*Figure 19 Ebbinghaus Forgetting Curve (Shail, 2019)*

In order to assess whether a person has successfully acquired the knowledge, it can be done by having a person demonstrate how much the information was

registered, stored, and retrieved through various categories of assessment, and the result from the test would show the retention of the knowledge that remained in his or her memory (Farr, 2012). Farr (2012) argued that retention of knowledge is the outcome of successful learning that can be measured by having the learner recognize, recall, or repeat what he or she has acquired. Bahrick and Metlon (1979, cited in Farr, 2012) suggested that retention is continuous progress, rather than discrete procedures, and each concept or knowledge that was learned is stored in memory which can be retrieved after being registered into the memory, lost when it has not been used for some certain period and reacquired if there is an attempt to retrieve that information.

## 5.2 Previous Studies on Long-Term Retention of the Knowledge

In order to assess students' long-term retention of the knowledge that they had learned and acquired in class, many researchers, with a time constraint, used a one-week delayed post-test to assess. For example, all the studies investigating the effects of the interleaved practice in these recent years of Nakata and Suzuki's (2019), Pan et al.'s, (2019), Suzuki and Sunada's (2020), and Suzuki et al.'s, (2020), all employed one-week delayed post-test in their study.

In addition, one-week delayed post-test was also employed in many research fields such as in the study of Karpicke and Roediger (2007) on repeated retrieval during learning is the key to long-term retention used one-week delayed post-test as a tool to assess students' long-term retention and it revealed that repeated testing during learning produced better long-term retention than repeated studying. Even though the participants in the group studying the list 15 times in the repeated study condition and the participants in the group studying it only 5 times in the repeated test

condition, the result from one-week delayed post-test showed using repeated testing during learning better enhancing long-term retention.

In the study on problem-based learning as a facilitator of conceptual change by Loyens, Jones, Mikkers, and van Gog (2015), the authors employed immediate post-test and one-week delayed post-test to investigate the effect of problem-based learning as a facilitator of conceptual change and the results showed that the problem-based learning group outperformed both the lecture and the self-study group on both the immediate post-test and one-week delayed post-test as supported by the theory that PBL can increase the likelihood of conceptual change.

According to the use of a one-week delayed post-test in many previous research studies, the present study also employed this delayed test to investigate the effects of interleaved FFI on students' grammatical knowledge and long-term retention of the grammatical knowledge learned during the treatment

## 6. Summary of the Chapter

**Form-focused instruction** in this study is defined as the process of teaching proactive explicit FFI by using the input-based approach involving both processing instruction method and structured input with practice exercises. The proactive explicit FFI provides explicit instructions on the target features and activities that the learners are required to perform. The purpose of the proactive explicit FFI is to create explicit grammatical knowledge and to raise awareness of the target features. It is aimed to turn language input to intake which is the basis of language learning.

**Interleaved practice** in this study is designed to be interleaved FFI in a cumulative schedule that exploits the advantages of both the traditional lessons or blocked practice and interleaved practice by combining them together. For example, L2 English learners can first practice Topic A and Topic B in a blocked schedule and when they are familiar with the contents, the interleaved practice is then introduced.

**Past Simple and Present Perfect** in this study refers to the forms, meanings, and uses of these two tenses in all forms of affirmative, negative, and interrogative sentences.

**Grammatical knowledge** in this study is defined as the ability to notice and produce accurate forms, understand meanings, and create the output by using of English past simple and present perfect tense regarding the forms, meanings, and uses of these two tenses in all types of affirmative, negative, and interrogative sentences properly.

**Long-Term Retention of the Knowledge** in this study is defined as declarative memories that store explicit information regarding the forms, meanings, and uses of these two tenses in all forms of affirmative, negative, and interrogative sentences which the students had to demonstrate how much the information was registered, stored, and retrieved through various assessments.



## CHAPTER III

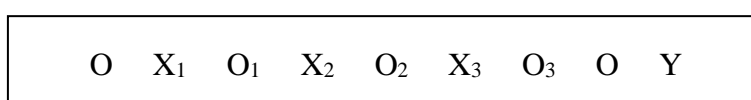
### METHODS

This section deals with the research methodology and procedure of research conduction to explore the effects of interleaved FFI for Thai EFL lower secondary school students on the grammatical knowledge and long-term retention of the knowledge and to investigate students' perception towards the instruction. It includes the following topics: research design, population and samples, experimental materials, research instruments, data collection, and data analysis.

#### 1. Research Design

This present study employed a one-group repeated measure design in investigating the effects of interleaved FFI on Thai EFL lower secondary school students' grammatical knowledge, long-term retention of grammatical knowledge, and their perception towards the instruction. Consequently, there were two parts in order to collect research data. First, the English instruction using interleaved FFI was the treatment in this study. To figure out students' grammatical knowledge and long-term retention of the grammatical knowledge, the data collected from five tests – one pre-test, three immediate post-tests (an immediate post-test of Unit 1, an immediate post-test of Unit 2, and an immediate post-test of Unit 3), and one one-week delayed post-test – were analyzed to provide the evidence of the effects of the interleaved FFI on students' grammatical knowledge and long-term retention of the grammatical knowledge. As shown in Figure 20, the diagram illustrated the research design for investigating students' grammatical knowledge and long-term retention of the grammatical knowledge. Second, to explore students' perceptions towards the

instructions, the data were collected from the semi-structured interview. The interview took place after the participants had taken the one-week delayed post-test. As shown in Figure 20, it displayed the diagram of the research design to investigate students' perception towards the interleaved FFI.

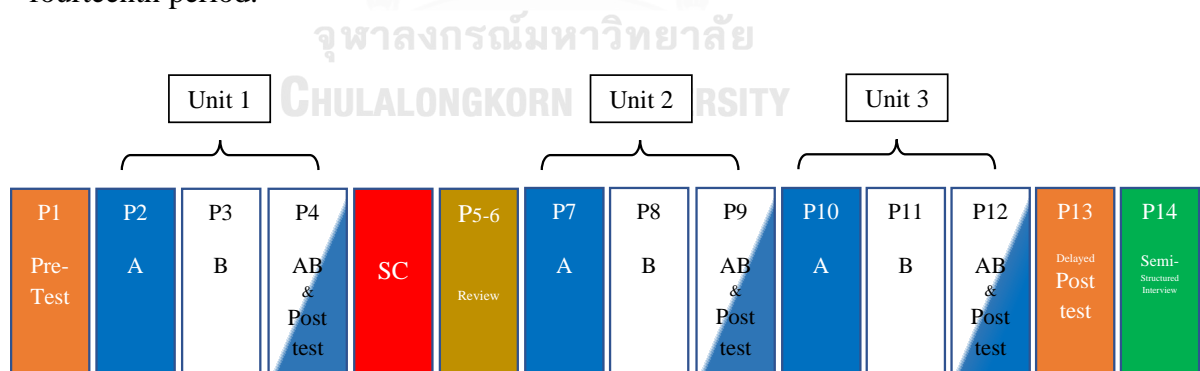


*Figure 20 Research Design to Explore Students' grammatical knowledge and long-term retention of the grammatical knowledge and their Perception towards Interleaved FFI*

O	means	a pre-test and one-week delayed post-test
X <sub>n</sub>	means	a unit of the treatment
O <sub>n</sub>	means	an immediate post-test of each unit of the treatment
Y	means	a semi-structured interview investigating the participants' perception towards the treatment

As shown in Figure 21, the present study was a repeated measure design aiming to collect both quantitative and qualitative data, therefore, there were two parts in the research design in this study. First, for the quantitative data, the data were collected from the scores of a pre-test, three immediate post-tests, and a delayed post-test of 23 Thai EFL lower secondary school students. Second, for the qualitative data, a semi-structured interview was conducted to find out about the perception of the participants towards the interleaved lessons on the fourteenth week, one week after the delayed post-test and 12 participants were interviewed.

Originally the duration of treatment was designed to be conducted with 12 sessions in 12 weeks, one session per week. However, there was a change due to temporary five-week school closure and the COVID-19 pandemic after the first four sessions. The treatment was therefore revised in two ways: 1) there were two review classes provided to the participants before continuing the study and 2) the class schedule was changed from meeting 1 session per week to 2 sessions per week. Consequently, the duration of the whole study took place in 14 sessions for 9 weeks as illustrated in Figure 21: class orientation and a pre-test on the first week, treatment for unit 1 with interleaved FFI with a cumulative schedule and an immediate post-test at the end of the unit – meeting once a week, the temporary five-week school closure (SC), two review sessions after the re-opening of the temporary five-week school closure (P 5-6), the continuous of the treatment for unit 2 and 3 – meeting twice a week – for 6 sessions with an immediate post-test at the end of each unit, a one-week delayed post-test in the thirteenth period and a semi-structure interview in the fourteenth period.



*Figure 21 Research Procedures of the Interleaved FFI with a Cumulative Schedule*

P	means	Period	
A	means	Lesson on the Usage of Past Simple	70
B	means	Lesson on the Usage of Present Perfect	
AB	means	Interleaved Practiced and Immediate Post-Test of each Unit	
SC	means	5-week school closure due to COVID-19 Pandemic	

## 2. Population and Participants

1. The population in the present study was Thai EFL lower secondary school students who studied in a regular program using the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) of the Ministry of Education of Thailand in the second semester of the academic year 2020 at secondary schools in Thailand.

2. The participants participating in the quantitative data collection were chosen from a purposive sampling technique with the criteria that 1) the participants must be Thai EFL lower secondary school students studying in a regular program where classes of the eight subject domains are taught as described in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) and 2) Past Simple and Present Perfect tense are part of the topics to be taught in English classes of the school curriculum in that semester. Therefore, Thai EFL eighth-grade students studying in a private school in Phra Nakhon Si Ayutthaya province were chosen as the characteristics of the students met the criteria set by the researcher. The total number of eighth-grade students in a regular program at this school was about 65 students – 3 classes, 20-25 students per class. The researcher then used the convenience sampling technique to select one intact classroom out of the three classrooms that the researcher was assigned to teach by the school's administrators. The number of the participants in this research was 23, 10 female and 13 male students, with mixed ability in English communication skills.

3. The number of participants participating in the qualitative data collection was 12 students from the same intact class as the participants for the quantitative data collection. These 12 samples were chosen by the simple random technique.

### 3. Research Instruments

The research instruments of this study are divided into two categories: Instructional instruments and data collection instruments as follow:

#### 3.1 Instructional Instruments

In this study, an interleaved FFI was developed to enhance English grammatical knowledge and long-term retention of the grammatical knowledge. The instruction consisted of 12 periods of the planned treatment and 2 periods of the review lessons after the reopening of the 5-week school closure due to the COVID-19 pandemic. The class at first was planned to meet once a week, but after the reopening, the school administrator assigned the researcher to meet with the participants twice a week.

##### 3.1.1 Designing the instruction

Lesson plans in this study were developed based on the process of teaching proactive explicit input-based FFI which involves both consciousness-raising (CR) tasks and practice exercises. As Ellis (1991) defined the proactive/inductive explicit input-based FFI, “ [It is] a pedagogic activity where the learners are provided with L2 data in some form and required to perform some operation on or with it, the purpose of which is to arrive at an explicit understanding of some regularity in the data” (p. 239). The characteristics of proactive explicit FFI are that attention to target form is predetermined and planned (e.g., in this study the focused target structure is on the

usage of past simple and the usage of present perfect), is presented in isolation, is explained by using metalinguistic terminology (e.g., rule explanation), and is involved the controlled practice of target the forms to raise awareness and avoid making target grammatical errors. Therefore, the lesson plans in this study had both communicative activities and linguistic focus in the same period with a cumulative schedule of the interleaved practice as the design in the study of Pan et al. (2019), meaning that new concepts must already be taught to initial mastery and practiced at least once in a blocked format before using interleaved practice. Hughes and Lee (2019) stated that it is impossible to make interleave lessons if learners have not been taught or have not understood the concepts of the new topics before.

#### *A. Defining the context*

The context of the school in this study was explored. The findings showed that the school is a coeducational school meaning that there are both male and female students in the school. The school is classified as a large private school located in Phra Nakhon Si Ayutthaya province providing classes from kindergarten to Grade 9. The school has approximately 3,200 students. The school provides 4 studying programs: Regular Program, Intensive English Program (IEP), Mini English Program (MEP), and English Program (EP). The students in the regular program and IEP at this school study all classes of the eight subject domains in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) of Thailand in Thai language. For IEP, the students also study all classes of the eight subject domains in Thai language but also have additional classes using only English as a medium of instruction. For English

Program and Mini English Program, most classes use English as a medium of instruction.

The eighth-grade students who were the participants in the present study were in a regular program. The reason that the researcher used the purposive sampling technique in choosing the Grade 8<sup>th</sup> students in the regular program was because in the second semester of Grade 8<sup>th</sup>, it was designed in the school curriculum for the students to study topics about English present and past tenses for the Fundamental English class, Code: Eng 22102 for 2.5 credits, and Kang (2017) and Hughes & Lee (2019) suggested interleaved practice seems to be suitable for language learners with some language background.

### *B. Selecting content*

Like the aforementioned, the purpose of language learning is seen as a tool or a medium to communicate with others; however, for the tool to be used successfully, it requires grammar as the grammars are to free language from the constraints of bi-uniqueness (Bornstein, 1977; Halliday & Matthiessen, 2014; Kroeger, 2013; La Palombara, 1976). Furthermore, one of the main objectives of language teaching in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) stated that students after finishing Grade 9<sup>th</sup> have to be able to speak and write for an exchange of information about themselves, various matters around them, situations and news of interest, and society, and communicate such information continuously and appropriately.

To select the content for the lesson design, the two topics – the usage of Past Simple and Present Perfect in all areas of forms, meanings, and uses in affirmative, negative, and interrogative sentences of active voice and affirmative sentences of

passive voice accurately and properly – were chosen due to four main reasons. Firstly, it was required by the school curriculum for Grade 8<sup>th</sup> students to study English Present and Past tenses in the second semester. The head of the foreign language department who was also an English teacher for the Fundamental English class for Grade 8<sup>th</sup> at the school where the treatment was implemented was interviewed. As a result, he recommended the researcher to apply the interleaved FFI with the usage of English tenses because, for the second semester of Grade 8, there are three main topics to be taught – Present Perfect, Past Simple, and Past Continuous tense. Secondly, the researcher also analyzed the Ordinary National Educational Test - O-NET (O-NET) for students in Grade 9 of the previous year (February, 2020) and the result showed that there were Past Simple tense occurring in the test such as in questions, in answering items, and in reading passages 94 times, Present Perfect 13 times, Past Simple in Passive Voice 16 times, and Present Perfect in Passive Voice 2 times, but there was no question assessing student's knowledge on past continuous tense. Thirdly, according to the literature, English tenses are still the most troublesome grammatical topics found in Thai EFL learners' output even though the participants in those studies were university students (Hinnon, 2015; Promsupa et al, 2017; Sermsook et al, 2017). This indicates the problem that Thai students do not understand the forms, meanings, and uses of English tenses has been around since secondary level and continued to tertiary education. Lastly, due to Kang (2017) and Hughes & Lee's (2019) suggestion, the interleaved practice would be the most beneficial and useful when the categories or concepts of the contents, to some extent, are similar or confusable which perfectly fits with the concept of and confusion on the usage of present perfect and past simple. The past simple and present perfect tenses



are similar because both structures can refer to an event happening in the past, and learners often confuse the two structures (Bird, 2010; Nakata & Suzuki, 2019; Pan et al., 2019)

Therefore, the two sets of topics, the usage of Past Simple and Present Perfect in all areas of forms, meanings, and uses in affirmative, negative, and interrogative sentences of active voice and affirmative sentences of passive voice, were selected to be used in the present study and were designed to be taught for 9 sessions – the details of lesson design shown in Table 5. The lessons were designed and taught by the researcher. The scopes of the content of all the lessons were shown in Table 4.

*Table 4 Scopes of the Content*

Past Simple
<p>Past Simple: Forms</p> <ul style="list-style-type: none"> <li>- Forms of regular and irregular verbs (Table of Irregular Verbs provided in Appendix A-2)</li> <li>- Structure of affirmative sentence in active voice</li> <li>- Structure of negative sentence in active voice</li> <li>- Structure of interrogative sentence in active voice</li> <li>- Structure of affirmative sentence in passive voice</li> </ul>

Past Simple: meanings and uses

- The use of Past Simple to talk about completed actions or tell stories that happen and already end in the past

- The use of Past Simple to talk about general facts that no longer happen

- The use of Past Simple to talk about habits and repeated actions in the past

with the structure of *S + used to + V.inf*

Present Perfect

Present Perfect: Forms

- Forms of regular and irregular verbs (Table of Irregular Verbs provided in Appendix A-2)

- Structure of affirmative sentence in active voice

- Structure of negative sentence in active voice

- Structure of interrogative sentence in active voice

- Structure of affirmative sentence in passive voice

Present Perfect: meanings and uses

- The use of Present Perfect to talk about a situation that began in the past and continues into the present (and may continue into the future) with time markers *since* and *for*

- The use of Present Perfect to talk about a situation which emphasizes that it

has just finished or ended before now with time markers *already* and *yet*

- The use of Present Perfect to experiences that happened once, twice, or only a few times in the past, unlike the structure of *used to + V.inf* that is used to talk about past habits and repeated actions occurring often in the past, but no longer happen at present. When Present Perfect is used to talk about experience, it is usually used with adverbs like *once, twice, three times, never, ever*, etc. *Never* is used instead of *not* to emphasize that the action or state never happens before, and *ever* is only used in an interrogative sentence meaning that at any time up until now

### *C. Establishing learning outcomes*

To establish learning outcomes for this instructional instrument, the stands, standards, and indicators for the eighth-grade students in the Basic Education Core Curriculum B.E.2551 (A.D.2008) were analyzed. Due to the fact that this instruction was a part of a Fundamental English class, even though the aim of the class was to enhance students' English communication in all skills, the head of the foreign language department assigned the researcher to design lessons focusing on writing skills for the implementation of the present study. Consequently, the indicators related to writing skills were selected to design the lesson plans as shown in Table 5.

*Table 5 The lesson procedure to the implementation*

Units / Lessons	Topics / Focus Content	Learning Outcomes
Unit 1 / Lesson 1  (Blocked  Practice)	<b>Topic:</b>  What should be the title of this story?  <b>Focus Content:</b>  The usage of regular and irregular verbs  in past tense form	Students will be able to use  past tense forms of verb, both  regular verbs and irregular  verbs, to write a short story  using Past Simple tense  correctly.
Unit 1 / Lesson 2  (Blocked  Practice)	<b>Topic:</b>  King of Skate  <b>Focus Content:</b>  The usage of present perfect tense to  speak and write about events, which  have just finished or still continue to the  present	Students will be able to use  Present Perfect tense to write  a note describing things that  have been done and not been  done for the event planning  correctly and appropriately.
Unit 1 / Lesson 3  (Interleaved  Practice)	<b>Topic:</b>  Interleaved Practice of Past Simple and  Present Perfect of Unit 1	Students will be able to  differentiate and choose to  use Past Simple or Present  Perfect for events in the past,  events that have just

Units / Lessons	Topics / Focus Content	Learning Outcomes
	<p><b>Focus Content:</b></p> <p>The forms, meaning, and use of past simple and present perfect tense</p>	<p>happened, or events that still continue to the present correctly and appropriately.</p>
Unit 2 / Lesson 1  (Blocked Practice)	<p><b>Topic:</b></p> <p>Board Game - I used to ...</p> <p><b>Focus Content:</b></p> <p>The usage of past tense form “used to + V.inf”</p>	<p>Students will be able to use Past Simple forms of “used to + V.inf” to write about what they used to do in the past correctly and appropriately.</p>
Unit 2 / Lesson 2  (Blocked Practice)	<p><b>Topic:</b></p> <p>Have you ever...?</p> <p><b>Focus Content:</b></p> <p>The usage of present perfect tense to speak and write about experiences</p>	<p>Students will be able to use Present Perfect tense to create questions of “Have you ever...?” and “When did that happen?” to ask their friends and be able to answer those questions from their friends correctly and appropriately.</p>
Unit 2 / Lesson 3  (Interleaved Practice)	<p><b>Topic:</b></p> <p>Interleaved Practice of Past Simple and Present Perfect of Unit 2</p>	<p>Students will be able to differentiate and choose to use Past Simple in “used to +</p>

Units / Lessons	Topics / Focus Content	Learning Outcomes
	<p><b>Focus Content:</b></p> <p>The usage of past simple in “used to + V.inf” form and present perfect tense</p>	<p>V.inf” form or Present Perfect for events in the past correctly and appropriately.</p>
Unit 3 / Lesson 1  (Blocked Practice)	<p><b>Topic:</b></p> <p>What was found in the sewer?</p> <p><b>Focus Content:</b></p> <p>The usage of Past Simple tense in a passive voice form (only affirmative sentences)</p>	<p>Students will be able to use Past Simple in a passive voice form to write short sentences about famous inventions, organizations, buildings, or discoveries that they are interested in correctly and appropriately.</p>
Unit 3 / Lesson 2  (Blocked Practice)	<p><b>Topic:</b></p> <p>Active voice or Passive voice?</p> <p><b>Focus Content:</b></p> <p>The usage of Present Perfect tense in a passive voice form (only affirmative sentences).</p>	<p>Students will be able to use Present Perfect tense in a passive voice form to describe the picture about things that have been damaged or stolen in the room due to the robbery correctly and appropriately.</p>

Units / Lessons	Topics / Focus Content	Learning Outcomes
Unit 3 / Lesson 3  (Interleaved  Practice)	<p><b>Topic:</b></p> <p>Interleaved Practice of Past Simple and Present Perfect of Unit 3</p> <p><b>Focus Content:</b></p> <p>The usage of Past Simple and Present Perfect tense in either an active voice or a passive voice form (only affirmative sentences)</p>	<p>Students will be able to</p> <p>differentiate and choose to use past simple or present perfect tenses in either an active voice or a passive voice form for events in the past, events that have just happened, or events that still continue to the present correctly and appropriately.</p>

#### *D. Designing lesson plans*

To design lesson plans for the present study, the lesson plans were developed based on the framework suggested by Nassaji and Fotos (2011) on guidelines for developing structured input activities - 1) Keep Meaning in Focus, 2) Present One Item at a Time, 3) Concern Individual Differences, 4) Move from Individual Sentences to Connected Discourse, and 5) Have Learners Do Something with the Input – along with the Procession Instruction model purposed by VanPatten (2004, 2017) as shown in Figure 3. VanPatten claims that processing instruction aims to help language learners draw meaning from input by linking grammatical forms to their meaning or function. During this stage, it could result in turning input to intake

which is the basis of language learning. The key components of input-based approach with processing instruction method are 1) when learners are exposed to the input, their first focus is on its meaning; 2) learners are provided with the explanation of the focused linguistic forms; 3) learners are provided with input-based activities designed – focused practice – to help learners process language regularities; 4) learners are provided with an uncontrolled exercise or task to produce the output.

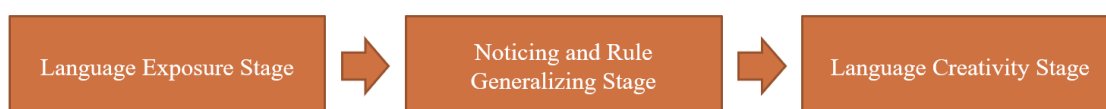
Thereby, in each period of blocked practice, the lesson plans were divided into 3 stages; 1) Language Exposure Stage by providing input and communicative activities to the participants, 2) Noticing and Rule Generalizing Stage, and 3) Language Creativity Stage. During class time, the lesson was started by having students participate in communicative activities such as a role-play, storytelling, and jigsaw puzzle for 20 minutes, which was called ‘Language Exposure Stage’ in the lesson plan, as shown in Appendix A. For another 20 minutes, there was a ‘Noticing and Rule Generalizing Stage’ with an instruction helping emphasize the linguistic forms of the language input that students had just been exposed to in the communicative activities by having students discuss the highlighted forms, provide more examples, and try to generalize the rule. For the last 20 minutes, it was a ‘Language Creativity Stage (Producing the output)’ for the students to produce an outcome in an uncontrolled task.

For interleaved practice lessons, the lesson plans were divided into 3 stages; 1) Language Exposure Stage by providing input and communicative activities to the participants, 2) Noticing and Rule Generalizing Stage , and 3) Immediate Post-test. During class time, the lesson was started by having students participate in

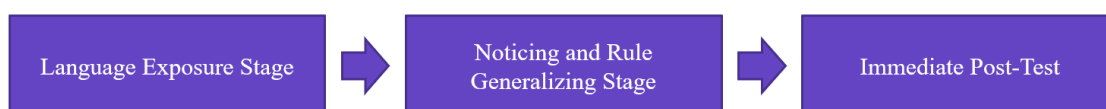


communicative activities such as role-play, storytelling, and jigsaw puzzle for 20 minutes. For another 20 minutes, there was a ‘Noticing and Rule Generalizing Stage’. For the last 20 minutes, the participants had to finish the immediate post-test as illustrated in Figure 22.

For Blocked Practice Lessons



For Interleaved Practice Lessons



*Figure 22 Stages in Lesson Plans for Block Practice and Interleaved Practice Lessons*

### 3.1.2 Verification of the Lesson Plans

Lesson plans were guidelines to conduct the English instruction using interleaved FFI practice. Each lesson plan was designed based on the framework suggested by Nassaji and Fotos (2011) and VanPatten (2004, 2017). Each lesson plan consisted of three stages including 1) Language Exposure Stage, 2) Noticing and Rule Generalizing Stage, and 3) Language Creativity Stage.

The lesson plans were validated by three experts in teaching English as a second and foreign language field and a head of the foreign language department at the school where the present study was implemented. The experienced teacher and experts were asked to check the appropriateness of learning outcomes, content and

material, learning condition, assessment and evaluation, and time by using the evaluation form shown in Appendix B.

### 1. Learning Outcomes

All experts agreed that learning outcomes for each lesson plan were appropriate that it was clearly stated, it was appropriate to the students' level, and the learning outcomes could be measured through the learning activities provided to the students.

### 2. Content and Material

All experts agreed that the content and material were appropriate that they used the appropriate language level, they helped support learning outcomes, they were attractive to the students, and they were relevant to the lesson.

### 3. Learning Condition

All experts agreed that learning condition designed for the lesson plans was appropriate for the students that the FFI could be applied to help students focus on both meaning and form appropriately, that language exposure state was to provide input and communicative activities, that noticing and rule generalizing stage was well designed, and language creativity stage was to enhance student to use language to communicate accurately, meaningfully, and appropriately.

### 4. Assessment and Evaluation

All experts agreed that the assessment and evaluation in the lesson plans were appropriate that they aligned with the learning outcomes. However, there was a

suggestion for the researcher to change some details in the rubric for the activity in Language Creativity Stage. The expert suggested that the words ‘creative’ and ‘interesting’ are quite subjective and abstract which is difficult to be evaluated.

## 5. Time

All experts agreed that the time allocation for each stage in the lesson plans was appropriate.

### 3.2 Data Collection Instruments

Two data collection instruments were used to collect the data of the three variables that were the effects of interleaved FFI on the improvement of students’ grammatical knowledge, long-term retention of the students’ grammatical knowledge, and students’ perception towards the interleaved FFI. The two instruments were selected-response assessments, including a grammaticality judgement test and discrimination test, and a semi-structured interview.

#### 3.2.1 Selected-response assessments

In this study, the selected-response assessment used to collect research data was a grammaticality judgement test and discrimination test. The tests were developed by the researcher according to the Test Specification as shown in Appendix D and testing map as shown in Appendix E. The test items on Past Simple and Present Perfect were equally distributed in all the tests. In the implementation of the study, the participants had to take three main tests: 1) a pre-test, 2) three immediate post-tests, from which, at the end, only some items of these three tests were chosen in order to be compared with the pre-test and one-week delayed post-test and analyzed as shown in

Appendix F, and 3) a one-week delayed post-test. The pre-test and one-week delayed post-test were identical, and the three immediate post-tests were designed as a parallel test to the pre-test and one-week delayed post-test. In order to make the pre-test, one-week delayed post-test, and immediate post-tests comparable, the test scores that were calculated were only selected from the items identified in the Table of Comparison between Pre-Test / One-Week Delayed Post-Test and Immediate Post-Test as in Appendix F. The criteria used to justify which items from the pre-test and one-week delayed post-test should be compared with the immediate post-tests were 1) the items must be able to measure the same language focus and learning outcome and 2) the vocabulary and level of language difficulty in the items must be approved to be appropriate for the participants.

#### *A. Pre-Test and One-Week Delayed Post-Test*

A pre-test and one-week delayed post-test were designed to be conducted in two test types of the selected-response assessments: a grammaticality judgement test and a discrimination test. These tests were used as a tool to assess students' L2 grammatical knowledge in all three aspects – forms, meanings, and uses – before enrolling in the research study and one week after the treatment. For the students to do the test, in grammaticality judgement test part, the students had to decide and mark whether the sentences shown on the test are “correct” or “incorrect” as the example shown in Table 6 below.

Table 6 The Example of the Grammaticality Judgement Test in Pre-test

No.	Sentences	CORRECT	INCORRECT
1.	I <b>were not</b> at home last night		
2.	I <b>was</b> at a basketball game.		
3.	Nida and Malee <b>was</b> there with me.		
4.	The game <b>not was</b> exciting at all.		
5.	Where <b>was you</b> on Wednesday afternoon?		
6.	Boss and I <b>were</b> at the bus stop waiting for you.		
7.	You <b>were</b> at the cinema?		

For the discrimination test part, the students had to decide and choose whether the sentences that match with the picture or situation provided were 'true' or 'false' as the examples shown in Table 7 below.

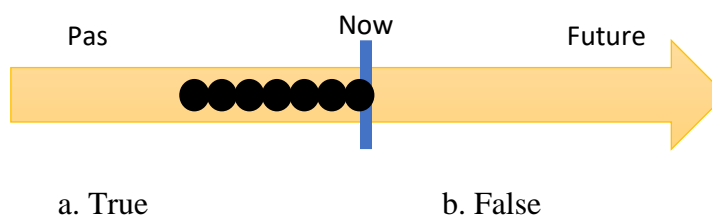
Table 7 The Examples of Discrimination Test in Pre-test

**Direction: Decide whether the sentence is 'true' or 'false'**

According to the sentence below,

The U.S. FDA **has announced** the safety of the Atlantic salmon.

1. It means the U.S. FDA studied the safety of the Atlantic salmon in the past, but just announced it now as shown in the timeline arrow below.

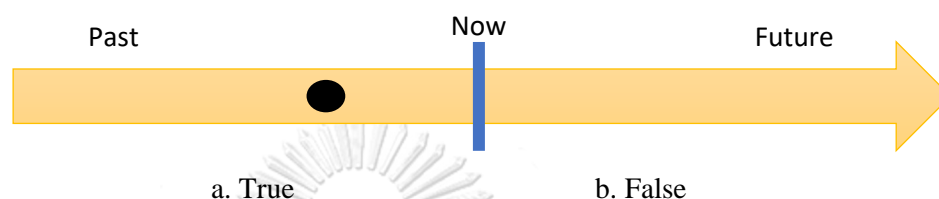


According to the sentence below,

So far Thomas **has lived** in Bangkok, Thailand for 5 years.

2.

It means Thomas used to live in Bangkok, Thailand 5 years ago, and now he lives somewhere else, not in Bangkok, Thailand.



The participants were presented with 42 test items – 30 items for the grammaticality judgement test and 12 items for discrimination test. The test items included all the topics of the usage of past simple and the usage of present perfect that were taught in the entire study to investigate the grammatical knowledge on all forms, meanings, and uses of the two tenses. In each part of the tests, the items were in random order and printed out for the participants to do before the initiation of the implementation.

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The test construction was done by mixing all the grammatical forms, meanings, and uses of the topics: Past Simple and Present Perfect in all areas of affirmative, negative, and interrogative sentences of active voice and affirmative sentences of passive voice equally. For the test validation, the researcher used content validity based on the tool called item objective congruence (IOC). In order to validate the test, three experts in the field of teaching English as a second or foreign language and one schoolteacher, the head of the foreign language department at the school where the present study was implemented, were invited to inspect the pre-test with the

IOC form. After the test was validated by the experts and a schoolteacher, the test was conducted in a pilot study and the reliability was examined using Kuder-Richardson Reliability (KR-20). The result of the test reliability from the pilot study was at 0.685 meaning that the test had reliability and could be used in the study (Kuder & Richardson, 1937).

### *B. Immediate Post-tests*

For the immediate post-tests, when combined together, they were parallel tests to the pre-test and one-week delayed post-test as they also were designed to measure the same language focus and learning outcomes in which the level of vocabulary and language difficulty were considered appropriate for the students by three experts in teaching English as a second or a foreign language field and the experienced teacher teaching at the school where the implementation took place. The tests consisted of grammaticality judgement test and discrimination test to assess students' L2 grammatical knowledge in all three areas – forms, meanings, and uses in affirmative, negative, and interrogative sentences of active voice and affirmative sentences of passive voice – at the end of the unit. The immediate post-tests were held in every third session of the class schedule. The participants were presented with 28 test items – 20 items for the grammaticality judgement test and 8 items for discrimination test in each test. The tests were developed according to the Test Specification as shown in Appendix D and the testing map as shown in Appendix E. However, in order to make three immediate post-tests comparable to the pre-test and one-week delayed post-test, only some items were chosen to be analyzed as shown in Appendix F.

The immediate post-tests were different from the pre-test and one-week delayed post-test in one aspect. Each immediate post-test only contained the content of that particular unit as the researcher would like to investigate students' L2 grammatical knowledge right after the lesson was finished at the least level of other interference. The test construction was done by mixing all the test items regarding the usage of Past Simple and Present Perfect tense equally.

### 3.2.2 Verification of the selected-response assessments

To verify the selected-response assessments, the tests were validated by three experts in the field of teaching English as a second or foreign language and one schoolteacher, the head of the foreign language department at the school where the present study was implemented. The experts were asked to check the appropriateness of the test instruction, content and materials, test condition, and time of the test. The evaluation form was in Appendix C

#### 1. The appropriateness of the test instruction

All experts agreed that the test instruction was appropriate, easy to understand, and clearly stated.

#### 2. The appropriateness of content and materials

All experts agreed that the content difficulty and language level were appropriate for the students. Moreover, the experts also agreed that the test items conform with the learning outcome.



### 3. The appropriateness of the test condition

All experts agreed that the test was designed according to the interleaved practice model that would cause the interleaving effect to enhance language accuracy and long-term retention of language accuracy. Besides, the experts also agreed that the test was also designed to help students link the meaning to its form; therefore, the language input must be registered as a language intake which is the basis of language learning.

### 4. The appropriateness of the time of the test

All experts agreed that for the students to have a pre-test before the implementation, an immediate post-test right after each unit, and a one-week delayed post-test after the treatment was appropriate. They also agreed that the time allocations – 45 minutes for the pre-test and one-week delayed post-test and 20 minutes for each immediate post-test – were appropriate.

For the test reliability, the tests were conducted with a pilot study and were verified using Kuder-Richardson Reliability (KR-20) to find the test reliability. The result of the test reliability was 0.685 meaning that the test had reliability and could be implemented in the study (Kuder & Richardson, 1937).

#### 3.2.3 Semi-Structured Interview Questions

In this study, the interview questions were designed to investigate students' perceptions towards the interleaved FFI at the end of the experiment as Figure 20.

The interview was conducted at the end of the treatment. 12 participants were randomly chosen and interviewed by the researcher one-by-one and the conversation was audio recorded. The semi-structured interview was conducted in both Thai and English which the interviewees felt comfortable using in order to receive as much information as possible. The participants were sometimes asked to elaborate more details about what those statements really meant or to add some examples to support the statements.

### 3.2.4 Verification of the semi-structured interview

The semi-structured interview questions were checked and validated by three experts in teaching English as a second and foreign language field. The experts agreed that the questions were appropriate. However, an expert suggested adapting questions asking the interviewees about the activities that the researcher should add activities to make sure that when conducting the interview, the interviewees can still recall all the activities and what they are called. Consequently, the questions were adjusted, and the questions being asked were shown in Table 8.

*Table 8 The Questions used in Semi-Structured Interview*

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Q1: How do you feel about learning English grammar with this mixing-topic schedule? Give some supporting reasons.

คำถามที่ 1: นักเรียนรู้สึกอย่างไรกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา? (พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนั้น)

Q2: What do you like about this mixing-topic schedule? Give some supporting reasons.

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คำถามที่ 2: อะไรคือสิ่งที่คุณนักเรียนชอบกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา?

(พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนั้น)

Q3: What do you not like about this mixing-topic schedule? Give some supporting reasons.

คำถามที่ 3: อะไรคือสิ่งที่คุณนักเรียนไม่ชอบกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา?

(พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนั้น)

Q4: Which of these activities did you find to be effective to help you improve your English grammar knowledge? (You can name more than one)

คำถามที่ 4: กิจกรรมอันไหนบ้างที่คุณนักเรียนรู้สึกว่าเป็นกิจกรรมที่ช่วยพัฒนาความรู้ทางไวยากรณ์ภาษาอังกฤษของคุณนักเรียนได้อย่างมีประสิทธิภาพ?

(นักเรียนสามารถตอบได้มากกว่า 1 กิจกรรม)

- Communicative Activities at the beginning of the class (กิจกรรมเน้นการสื่อสาร ต้นชั่วโมง) Board Game / Have you ever...? / King of Skate / The Long-lost Diamond / Jigsaw Puzzle / Copter's Worst Summer Holiday

- Form-Focused Activities (กิจกรรมเน้นโครงสร้างไวยากรณ์ กลางชั่วโมง) เรียนรู้โครงสร้างของประโยคที่นักเรียนพบในกิจกรรมเน้นการสื่อสาร / แบบฝึกหัดที่เน้นโครงสร้างไวยากรณ์ / เรียนรู้หลักการใช้ Tense ของโครงสร้างของประโยคที่นักเรียนพบในกิจกรรมเน้นการสื่อสาร / แบบฝึกหัดที่เน้นโครงสร้างไวยากรณ์

- Uncontrolled Tasks (กิจกรรมให้นักเรียนฝึกสร้างประโยคด้วยตัวเอง ทำชั่วโมง) แต่งประโยคเอง / แต่งเรื่องสั้นเอง

Q5: Which of these activities did you find to be ineffective to help you improve your English grammar? (You can name more than one)

คำถามที่ 5: กิจกรรมอันไหนบ้างที่คุณนักเรียนรู้สึกว่าเป็นกิจกรรมที่ไม่ได้ช่วยพัฒนาความรู้ทางไวยากรณ์ภาษาอังกฤษของคุณนักเรียนได้อย่างมีประสิทธิภาพเลย?

(นักเรียนสามารถตอบได้มากกว่า 1 กิจกรรม)

Q6: What do you feel about classroom atmosphere overall during these 13 weeks? For example, is it supportive or unsupportive for your learning, is it interesting or not interesting, or is there any other suggestion that you like or do not like about the overall classroom atmosphere?

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คำถามที่ 6: นักเรียนรู้สึกอย่างไรกับบรรยากาศของการเรียนโดยรวมตลอด 13 สัปดาห์ที่ผ่านมา? เช่นบรรยากาศการเรียนสนับสนุนให้เกิดการเรียนรู้หรือไม่, บรรยากาศการเรียนเป็นไปแบบน่าสนใจหรือไม่, หรือมีอะไรอยากจะแนะนำที่เกี่ยวข้องกับสิ่ง que นักเรียนชอบหรือไม่ชอบโดยภาพรวมของการเรียนที่ผ่านมาหรือไม่?

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#### 4. Data Collection Procedures

In the present study, the researcher collected data in three periods: before, during, and after the implementation of the English instruction using interleaved FFI on Thai EFL lower secondary school students' grammatical knowledge, long-term retention of grammatical knowledge, and their perceptions towards the instruction. The following sections explained the data collection process of each step in detail.

##### 4.1 Before the implementation

During this step, firstly, the researcher had contacted the school to ask for permission to implement the present study. After being permitted, the researcher had conducted the preliminary interview to find the needs and necessity of the school curriculum and to find topics to design lesson plans for the implementation. Secondly, the researcher had sent the consent form to all participants for their parents or guardians to grant permission for the researcher to implement the study and for the students to be the participants of the study. Thirdly all the lesson plans and tests were verified by the experts and the head of the foreign language department at the school where the implementation occurred. Fourthly, the pilot study was conducted with eight students who were considered to share similar characteristics as the participants in this study. After the pilot study, some activities were adjusted to be suitable with the time allocation of each period of the implementation. Lastly, the participants

listened to the orientation about the present study and took a pre-test which included a grammaticality judgement test and discrimination test before experiencing the English instruction using interleaved FFI of the present study.

#### 4.2 During the implementation

During the implementation of the English instruction using interleaved FFI, the participants' grammatical knowledge was periodically assessed by observation during the class time, checking the assignments and giving feedback, and conducting the immediate post-tests. The lessons were designed in the interleaved practice with a cumulative schedule meaning that the lessons were provided in blocked practice in the first two lessons and then following by the interleaved practice in the third lesson for each unit and the immediate post-test was conducted right after the interleaved lesson. In each blocked lesson, the participants were asked to engage in the communicative activities at the beginning of the class, also called language exposure stage, to answer questions and discuss the language rules during the rule noticing and generalizing stage, and to submit the final draft of the writing task at the end of the class in language creativity stage. In every third session of the lesson, there was an interleaved lesson by starting with reviewing the two previous lessons and then the participants were asked to do exercises with interleaved practice design and to discuss the language form, its meaning, and its use. For the last 20 minutes of the class, the participants had to finish the immediate post-test of that unit.

At first, the participants were asked to engage in the implementation once a week, but after the school was reopened from the temporary five-week closure because of the COVID-19 pandemic, the participants were asked to engage twice a

week due to the concern about the well-being of the participants and the implementation of the study. The review lessons were provided to brush up on what has been learned before the school closure to ensure that the effect of the temporary school closure had the least impact on the present study. Therefore, the study was extended from 12 sessions to 14 sessions as shown in Figure 21.

#### 4.3 After the implementation

After the participants had taken the one-week delayed post-test on the thirteenth session, 12 participants were interviewed using the semi-structured interview questions to investigate their perceptions towards the instruction. All the interviews were conducted in the same week. Each participant was interviewed one-by-one in Thai language to avoid the language barrier and the interview was audio recorded. The researcher listened to the record and transcribed the data in order to analyze them. In case that the interviews were in Thai, the data from the interviews were translated into English. Then the frequencies of keywords emerging from the interviews were counted, analyzed, and reported.

### 5. Data Analysis

In the present study, the data regarding students' L2 grammatical knowledge gained from interleaved FFI, students' long-term retention of the grammatical knowledge, and students' perception towards the instruction were investigated. Due to the limited number of participants, 23 participants, in this study, there was a question regarding the use of parametric or nonparametric statistics to analyze the data. According to Kerlinger and Lee (2007), when scores of the population are proved to

be normally distributed, the researcher, even with the constraint of a limited number of participants, can also use parametric statistics to analyze the data.

In order to figure out whether the scores of the participants were to be analyzed with parametric or nonparametric statistics, the scores from the pre-test were analyzed using Shapiro-Wilk Test and d'Agostino-Pearson in finding if they were under a normal distribution. According to the literature review, if the results reveal that the value of the Shapiro-Wilk Test and d'Agostino-Pearson is greater than 0.05, the data is normal. The results were proved that the pre-test scores were normally distributed by Shapiro-Wilk Test at  $p = 0.06$  and d'Agostino-Pearson at  $p = 0.17$  as in Table 9. Thereby, the data in the present study were analyzed using parametric statistics.

*Table 9 Statistical Analysis using Shapiro-Wilk Test and d'Agostino-Pearson in Finding Normal Distribution of the Data from Participants' Pre-test*

	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>S.D.</b>	<b>alpha</b>	<b>p-value</b>
Shapiro-Wilk Test	23	13	27	22.52	3.56	0.05	0.06
d'Agostino-Pearson	23	13	27	22.52	3.56	0.05	0.17

### 5.1 Data Analysis for Research Question 1

To investigate research question 1, the research instruments used to measure students' grammatical knowledge were a pre-test and immediate post-tests which included both the grammaticality judgement test – measuring students' knowledge on linguistic forms of Past Simple and Present Perfect tense – and discrimination test –

measuring students' knowledge on the meaning and usage of Past Simple and Present Perfect tense. In order to make the pre-test and immediate post-tests comparable, the test scores that were calculated were only selected from the items identified in the Table of Comparison between Pre-Test / One-Week Delayed Post-Test and Immediate Post-Test as in Appendix F

The researcher administered the within-group paired sample t-test to figure out the difference in the mean score in pre-test and immediate post-tests of the participants. The total scores of the tests, due to Table of Comparison between Pre-Test / One-Week Delayed Post-Test and Immediate Post-Test, were comparable at the equal test items of 42 points, 30 points in grammaticality judgement test and 12 points in discrimination test. The participants' pre-test and immediate post-test minimum scores, maximum scores, mean scores, standard deviations, mean difference, t-values, and statistical significance were used to compare the scores between before and right after the treatment.

## 5.2 Data Analysis for Research Question 2

Research question 2 aimed at investigating the effects of interleaved FFI on the enhancement of long-term retention of grammatical knowledge. The test scores were used to evaluate the long-term retention of the students' grammatical knowledge on the usage of past simple and present perfect in three aspects: form, meaning, and



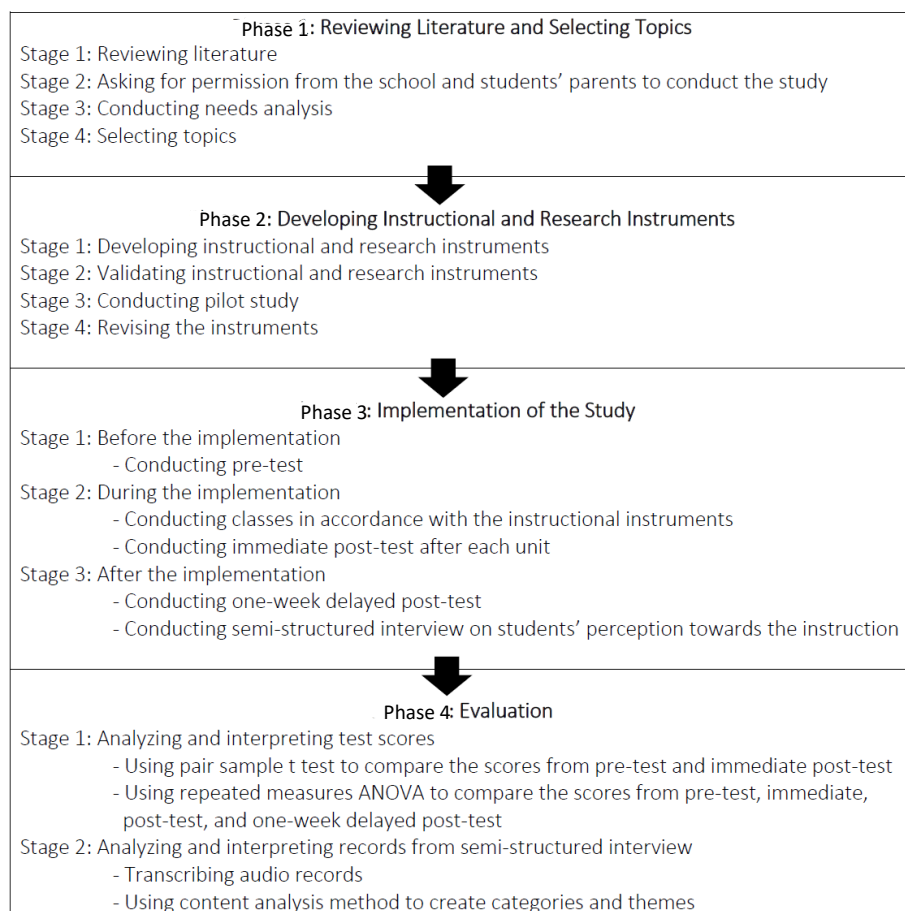
use. The scores from each test – one pre-test, selected items from three immediate post-tests as identified in the Table of Comparison between Pre-Test / One-Week Delayed Post-Test and Immediate Post-Test as in Appendix F, and one one-week delayed post-test – were analyzed. The scores then were analyzed by using repeated-measures ANOVA with Greenhouse-Geisser Correction and Post Hoc Tests using the Bonferroni Correction methods in order to examine the change on the scores examining students' grammatical knowledge in three timeframes before experiencing the implementation, right after experiencing the implementation and one week after the whole implementation. Repeated measures ANOVA with Greenhouse-Geisser Correction and Post Hoc Tests using the Bonferroni Correction methods were used to compare within-subjects experimental group performance which was the differences among before, right after, one week after the implementation of the present study.

### 5.3 Data Analysis for Research Question 3

Research question 3 focused on students' perceptions towards the English instruction using interleaved FFI. To examine the participants' perceptions on the English instruction using interleaved FFI, the qualitative data from the semi-structured interview was analyzed using the content analysis method.

The researcher read the transcription for relevant keywords, phrases, or sentences to create categories and themes. The categories for the content analysis were developed based on the data obtained from the interview.

In conclusion, the research methodology and procedure of research conduction to explore the effects of interleaved practice designed to teach FFI lessons for Thai EFL lower secondary students and to investigate students' perception towards the instruction in this study consisted of four main phases of procedure as illustrated in Figure 2323.



*Figure 23 Research Methodology and Procedure*

## CHAPTER IV FINDINGS

This chapter presents the results from the study of the effects of interleaved FFI on Thai EFL lower secondary school students' grammatical knowledge, long-term retention of the grammatical knowledge, and their perceptions towards the instruction. In this section, the results were presented in three parts based on the research questions as follow:

1. To what extent does interleaved FFI help improve grammatical knowledge of Thai EFL lower secondary school students?
2. To what extent does interleaved FFI enhance long-term retention of grammatical knowledge of Thai EFL lower secondary school students?
3. What is Thai EFL lower secondary school students' perception towards the interleaved FFI?

### **1. To what extent does interleaved FFI help improve grammatical knowledge of Thai EFL lower secondary school students?**

The first research question determined whether the interleaved FFI helped improve grammatical knowledge of Thai EFL lower secondary school students as it was hypothesized. To investigate research question 1, the research instruments used to

measure students' grammatical knowledge were a pre-test and immediate post-tests which included both the grammaticality judgement test – measuring students' knowledge on linguistic forms of past simple and present perfect tense – and discrimination test – measuring students' knowledge on the meaning and usage of Past Simple and Present Perfect tense. The researcher administered the within-group paired sample t-test to figure out the difference of the mean score in pre-test and immediate post-tests of the participants. The total scores of the tests were 42 points, 30 points in grammaticality judgement test and 12 points in discrimination test. The participants' pre-test and immediate post-test minimum scores, maximum scores, mean scores, standard deviations, mean difference, t-values, and statistical significance are presented in Table 10 which illustrates the scores between before and right after the treatment.

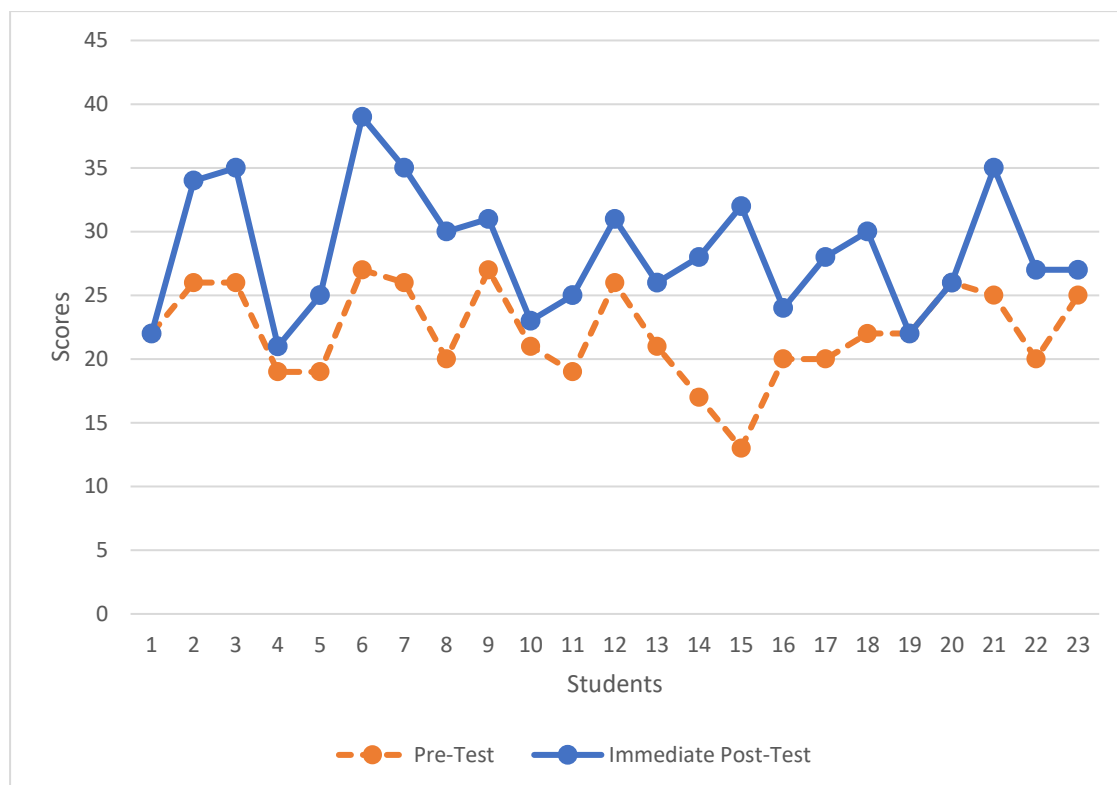
*Table 10 Comparison of the Pre-Test and Immediate Post-Test Scores*

	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Difference</b>	<b>t</b>	<b>Sig. (2-tailed)</b>
<b>Pre-test</b>	23	13	27	22.52	3.56	5.913	-5.662	.00*
<b>Immediate Post-test</b>	23	20	39	28.43	5.04			

From Table 10, before the implementation of the interleaved FFI, participants' pre-test mean score was 22.52 (S.D. = 3.56), with the lowest score of 13 and the highest score of 27 out of 42 points. From the 23 participants, there were 43.48 percent (10 participants) who got the pre-test scores higher than the mean, and 56.52 percent (13 participants) getting the pre-test scores at mean and below.

On the contrary, right after the treatment of the interleaved FFI, the immediate post-test mean score increased to 28.43 (S.D. = 5.04), with the lowest score at 20 and the highest score of 39. The mean difference was at 5.913, and the t-value was -5.662. The analysis from the paired-sample t-test indicated that the immediate post-test scores are significantly different at the 0.00 level ( $p < 0.05$ ).

Moreover, when considered the pre-test and immediate post-test scores individually as shown in the line graph of Figure 2424, 86.96 percent of the participants' performance on the immediate post-test score was higher than the pre-test (20 participants), only 13.04 percent got the same scores (3 participants), and no participant got the score on the immediate post-test lower than the pre-test.



*Figure 24 Line Graph Presenting Scores of Pre-Test and Immediate Post-Test of Each Student*

The scores shown in Table 10 and Figure 24 were the total scores from the two sections of tests; however, to examine further on the improvement of students' grammatical knowledge in terms of the linguistic forms of and the meaning and usage of Past Simple and Present Perfect tense separately, the scores were analyzed as shown in Table 11 and Table 12. The results of these analyses still indicated that the participants' performance on grammatical knowledge both in the linguistic forms of and the usage of Past Simple and Present Perfect tense were significantly different at the immediate post-tests. Therefore, for this study, it can be concluded that

interleaved FFI helps improve grammatical knowledge of Thai EFL lower secondary school students.

*Table 11 Comparison of the Pre-Test and Immediate Post-Test Scores from the Grammaticality Judgement Test Part (Total scores = 30)*

	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Difference</b>	<b>t</b>	<b>Sig. (2-tailed)</b>
<b>Pre-test (GJT)</b>	23	10	22	16.96	3.29	4.260	-5.021	.00*
<b>Immediate Post-test (GJT)</b>	23	15	27	21.22	4.07			

*Table 12 Comparison of the Pre-Test and Immediate Post-Test Scores from the Discrimination Test Part (Total scores = 12)*

	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>S.D.</b>	<b>Mean Difference</b>	<b>t</b>	<b>Sig. (2-tailed)</b>
<b>Pre-test (DT)</b>	23	3	10	5.56	1.78	1.652	-2.824	.01*
<b>Immediate Post-test (DT)</b>	23	5	12	7.22	1.95			

Based on these statistical outcomes of the grammaticality judgement test, which investigates the knowledge on linguistic forms, and discrimination test, investigating the knowledge of meaning and usage, it can be claimed that interleaved

FFI has effects on the improvement of students' grammatical knowledge in all areas: form, meaning, and use.

## **2. To what extent does interleaved FFI enhance long-term retention of grammatical knowledge of Thai EFL lower secondary school students?**

To probe the research question 2, the research instruments used to measure the effectiveness of the interleaved FFI on students' long-term retention of the grammatical knowledge were repeated measures ANOVA with a Greenhouse-Geisser correction and Post Hoc Test using Bonferroni correction to analyze the scores from pre-test, immediate post-tests and one-week delayed post-test including both the grammaticality judgement test and discrimination test in terms of the knowledge of linguistic forms of and the meaning and usage of Past Simple and Present Perfect tense. The descriptive statistic including minimum scores, maximum scores, mean scores, standard deviation, and 95% Confidence Interval for Difference were used with an adjusted time of the evaluation as a co-variable. The total scores in each test were 42 points, 30 points in grammaticality judgement test and 12 points in discrimination test. Table 13 illustrated the comparison mean scores among before, right after, and one week after the treatment.

A repeated-measures ANOVA with a Greenhouse-Geisser correction determined that mean scores differed statistically significantly between time points



( $F(1.91, 41.91) = 25.04, p = 0.00$ ). The marginal mean, after adjusted time co-variable, revealed that interleaved practice elicited an increase in scores from the pre-test to the immediate post-test, and then to the one-week delayed post-test ( $22.52 \pm 3.57$  points,  $28.43 \pm 5.04$  points, and  $29.21 \pm 5.29$  points, respectively), which was statistically significant ( $p = .000$ ) as shown in Table 13 and Figure 255. Post-hoc tests using the Bonferroni correction suggested a significant difference in the comparisons between pre-test and both immediate post-test and one-week delayed post-test with a statistical significance, but not between immediate post-test and one-week delayed post-test as shown in Table 14. It can be concluded that long-term retention of the grammatical knowledge elicits a statistically significant increase in the increase of scores both right after the treatment and in the delayed post-test. Therefore, the hypothesis saying that interleaved FFI enhances long-term retention of grammatical knowledge of Thai EFL lower secondary school students was accepted.

*Table 13 The Results from One-Way Repeated Measure ANOVA*

	Min	Max	Mean Score (SD), points	95% CI	Sig. (2- tailed)
<b>Pre-test</b>	13	27	22.52 (0.74)	20.98, 24.06	.00*
<b>Immediate Post-test</b>	20	39	28.43 (1.05)	26.25, 30.62	
<b>One-week delayed post-test</b>	21	37	29.21 (1.10)	26.92, 31.50	

Table 14 Post-hoc Analysis of all Comparison

	Time	Mean			Sig. (2-tailed)
		Difference (points)	SD	95% CI	
Pre-Test	Immediate Post-test	-5.91	1.04	-8.62, -3.21	.00*
	One-week Delayed Post-test	-6.70	1.13	-9.61, -3.78	.00*
Immediate Post-test	Pre-Test	5.91	1.04	3.21, 8.62	.00*
	One-week Delayed Post-test	-0.78	0.92	-3.18, 1.61	1.00
One-week Delayed Post-test	Pre-Test	6.70	1.13	3.78, 9.61	.00*
	Immediate Post-test	0.78	0.92	-1.61, 3.18	1.00

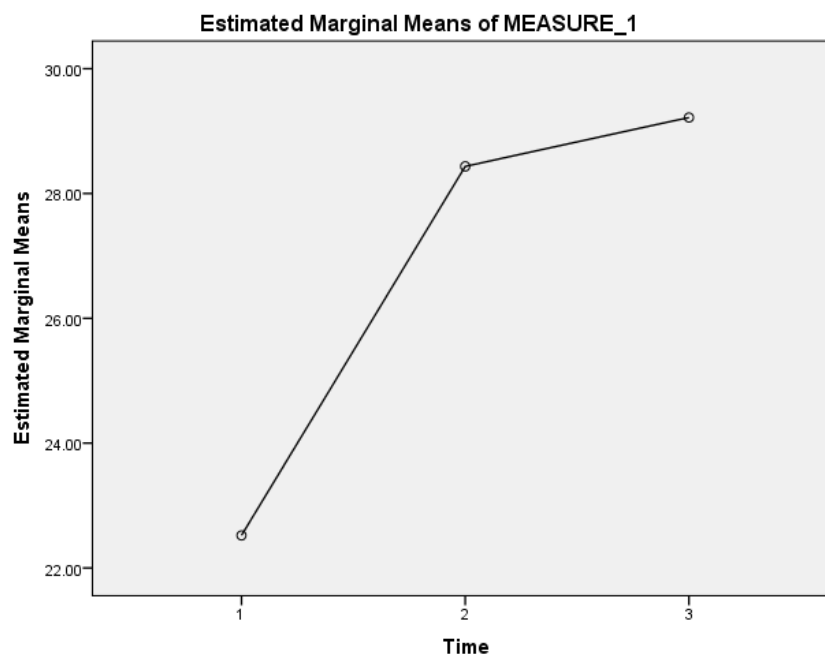
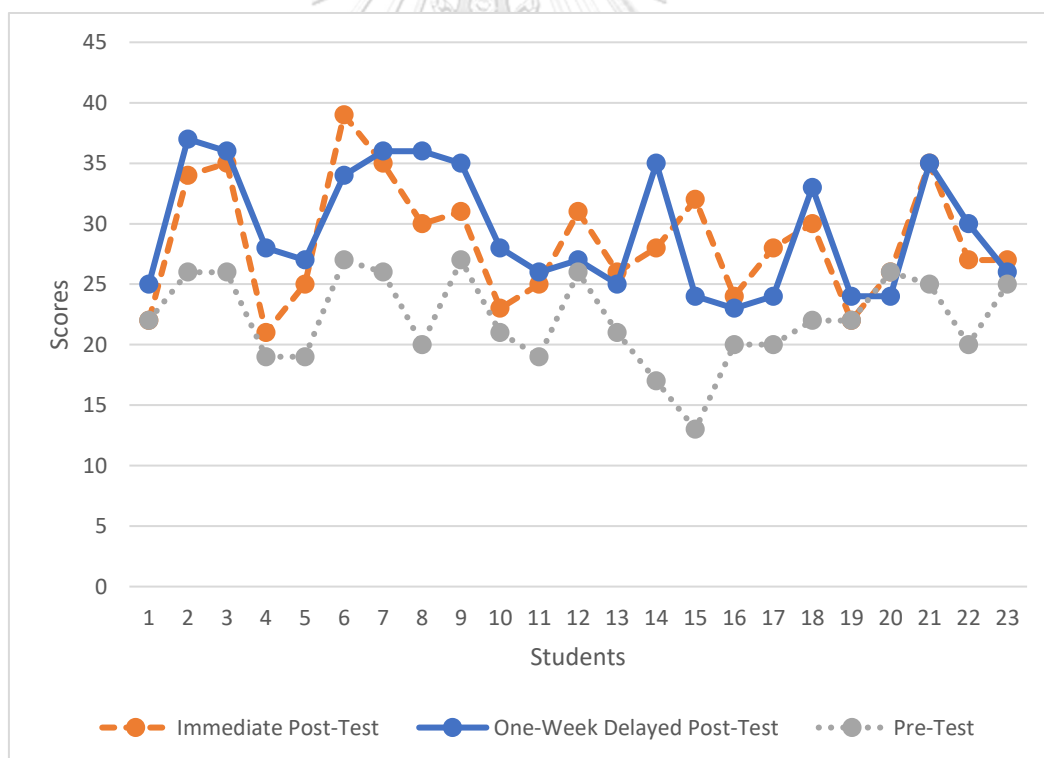


Figure 25 Estimated Marginal Means

In addition, when considered the pre-test, immediate post-test, and delayed post-test scores of each participant as shown in the line graph of Figure 26, 56.52% of the participants' performance on the one-week delayed post-test score was higher than the immediate post-test (13 participants), 4.35% got the same scores (1 participant), and 39.13% got a lower score on the one-week delayed post-test (9 participants). Therefore, for this study, it can be concluded that interleaved FFI helps enhance the long-term retention of grammatical knowledge of Thai EFL lower secondary school students.



*Figure 26 Line Graph Presenting Scores of Immediate Post-Test and One-Week Delayed Post-Test of Each Student*

### 3. What is Thai EFL lower secondary school students' perception towards the interleaved FFI?

To explore the participants' perceptions towards the interleaved FFI, the data obtained from the semi-structured interview were analyzed by using the content analysis method. 12 participants were randomly selected to be interviewed after they had done the delayed post-test. The interviews required the students to express their perceptions towards the instruction using interleaved FFI and the classroom atmosphere overall.

In analyzing the participants' perceptions towards the interleaved FFI, two main aspects of the participants' answers were focused: the positive perceptions towards the interleaved FFI and the negative perceptions towards the interleaved FFI. "Understand lessons more clearly" was mentioned the most often ( $f = 10$ ) among the five positive perceptions followed by "More opportunities to practice English" ( $f = 9$ ), "Remember the lessons better" ( $f = 5$ ), "Fun and not boring" ( $f = 5$ ), and "Feel encouraged as receiving feedback constantly" ( $f = 6$ ). However, there were also participants reporting having negative perceptions towards the interleaved FFI such as "Feel confused and unfamiliar with mixing-topic teaching" ( $f = 8$ ), "More difficult to understand" ( $f = 5$ ), and "Easy to forget the lesson" ( $f = 3$ ). Table 15 showed participants' perceptions towards the English instruction using interleaved practice.

*Table 15 Participants' Perceptions towards the Interleaved FFI (n = 12)*

<i>Participants' Perceptions</i>	<i>Frequencies of Keywords / Key Phrases in the answer</i>
<b><i>Positive Perceptions towards the Interleaved FFI</i></b>	
<i>1. Understand lessons more clearly</i>	10
<i>2. More opportunities to practice English</i>	9
<i>3. Fun and not boring</i>	5
<i>4. Feel encouraged as receiving feedback constantly</i>	6
<b><i>Negative Perceptions towards the Interleaved FFI</i></b>	
<i>1. Feel confused and unfamiliar</i>	8
<i>2. More difficult to understand</i>	5

*Note.* The total frequencies of keywords / key phrases in the answer were 50.

To elaborate more on the participants' perceptions towards the interleaved FFI the following sections showed the excerpts from the content analysis of the two main

aspects, the positive perceptions towards the interleaved FFI and the negative perceptions towards the interleaved FFI, obtained from the semi-structured interview.

### 3.1 Positive Perceptions towards the Interleaved FFI

*3.1.1 The interleaved FFI was easy to understand as two topics were constantly compared.*

In regard to the perceptions that the participants felt after having been in the treatment for 12 weeks, the perception that *‘Understand lessons more clearly’* obtained the most frequencies in the answer from the interview ( $f = 10$ ). The majority of the participants described that with interleaved practice, at first, it seemed confusing but after getting used to it, they found it easy to understand English tenses as the provided lessons style was to compare the forms, meanings, and usage of two confusing tenses: Past Simple and Present Perfect. For the examples, P 2 mentioned that the interleaved practice confused her at first, but later it made the lessons easier for her. It was because normally English tenses were taught separately, and each tense has its own forms which were very hard for her to remember. Moreover, many tenses seemed to be used similarly, in her opinion. However, after studying this way, she totally understood how these two tenses were different.

Excerpt 1

P 2: “หนูรู้สึกว่าการเรียนเนื้อหาไวยากรณ์สลับไปสลับมาแรก ๆ ก็รู้สึกงง ๆ แต่เรียนไปเรียนมาก็รู้สึกว่ามันสนุกดีค่ะ หนูว่ามันช่วยให้นักเรียนเข้าใจเรื่อง Tense ภาษาอังกฤษได้ง่ายมากขึ้น พวกโครงสร้างไวยากรณ์ และพวกวิธีใช้อะไรพวกนี้อะค่ะ มันเข้าใจง่ายขึ้น จำง่ายขึ้นด้วย รู้สึกว่าไม่สับสน คือสมัยก่อนที่เรียนก็จะเรียนทีละ Tense ว่าแต่ละอันใช้ยังไง แต่เรียนไปเรียนมาหนูว่ามันก็ใช้คล้ายๆ กันหมด พอได้เรียนแบบสลับไปสลับมาได้เปรียบเทียบกันตลอด ๆ ว่า Past Simple กับ Present Perfect ใช้เหมือนกันยังไง ใช้ต่างกันยังไง หนูก็เข้าใจวิธีการใช้มากขึ้นเลยคะ”

“At first, I felt that learning English grammar with a mixing-topic schedule was confusing. However, after a while, I felt it was kind of fun and helped me understand how to use English tenses more easily, both their structures and their usage. Studying this way was easier to understand, easier to remember, not confusing. In the past, Each English tense was taught separately, but after studying them, I still felt confused as I felt like all of them had similar usage. However, after this mixing-topic teaching, two tenses, Past Simple and Present Perfect, were constantly compared such as which aspects were similar and which were different. I felt I understood how to use them now.”

Consistently with the excerpts from Participant 6, 8, and 9, they also mentioned that the interleaved FFI helped them understand the forms of and the usage of English tenses which they had not understood before as shown in the following excerpts.

#### Excerpt 2

P 9: “หนูรู้สึกว่าการเรียนไวยากรณ์แบบสลับไปสลับมาทำให้หนูรู้ความแตกต่างระหว่างสองเรื่อง que เรียน คือได้เปรียบเทียบกับเนื้อหาที่เรียนไปก่อนหน้านี้ ครั้งหน้าก็ได้กลับมาเปรียบเทียบกับของวันนี้ ทำให้เข้าใจความแตกต่างได้มากขึ้น และการเรียนแบบนี้ก็ได้ทบทวนเนื้อหาด้วย ทำให้ไม่ลืม พอเวลาทำโจทย์ก็ได้เปรียบเทียบ ได้คิดว่าควรใช้ tense ไหนดี ”

“I felt that with mixing-topic teaching of English grammar, I now understood the differences between the two topics. It was like this, at this period, today's lesson was compared with the previous one, and then at the next period, a new lesson will be compared with today's lesson. It made me understand the differences. And this way of studying helped me review the previous lessons, so I would not forget the old lessons. When I worked on the practice exercise, I could compare and think which tense I should use.”



## Excerpt 3

P 6 : “หนูเพิ่งเคยเรียนแบบสลับหัวข้อที่ต้องเรียนไปๆ มาๆ แบบนี้ครั้งแรก ตอนแรกหนูคิดว่ามันค่อนข้างยากเลยล่ะ และหนูไม่ใช่คนเรียนเก่งด้วย แต่หลังเรียนแบบใหม่ไป 4 - 5 ครั้ง รู้สึกว่าการเรียนแบบใหม่ช่วยฝึกความจำได้ดีเลย”

“I had never studied with mixing-topic teaching before. This was my first time. At first, I felt it was quite difficult to study this way. I am not a smart student. However, after having studied this way for 4 – 5 times, I felt this new way of teaching helped me remember lessons better.”

## Excerpt 4

P 8: “การเรียนแบบนี้มันดูง่ายกว่าเดิม เพราะก่อนหน้านี้หนูไม่ค่อยเข้าใจเรื่อง Tense เลย พอได้เรียนเกี่ยวกับเรื่อง Tense ด้วยวิธีสลับไปสลับมาหนูรู้สึกมันง่ายกว่าเดิม มันจำง่าย และได้ทบทวนเนื้อหาด้วยเพราะมันสลับไปสลับมา”

“With this way of the lessons, it seemed easier. I had not understood English tenses before. But with mixing-topic teaching, I felt it was easier.

It was easy to remember, and the lessons were reviewed consistently as the topics were taught in a mixing way.”

#### Excerpt 5

P 9: “ตอนแรกผมรู้สึกไม่ชิน แต่ตอนนี้ผมรู้สึกว่าเรื่อง Tense มันง่ายเลยครับ เพราะได้เรียนแบบสลับหัวข้อไปมาทำให้เข้าใจเนื้อหาของแต่ละหัวข้อ พอเข้าใจแล้วได้อาไปเปรียบเทียบกันก็รู้สึกจำได้ดีขึ้น รู้สึกการเรียนแบบสลับไปสลับมาเป็นการเรียนที่มีประสิทธิภาพเพราะมันทำให้จำได้แม่นขึ้น”

“At first I was not familiar with this teaching method, but now I felt that English tense was easy for me. Because of this mixing-topic teaching, I now understood the usage of each tense and after understanding when they were compared and explained in class, it made me remember them better. I felt that mixing-topic teaching was an effective way of teaching because it helped me remember the lessons better.”

#### *3.1.2 Interleaved FFI provided more opportunities to practice English.*

To focus on participants’ perceptions of having more opportunities to practice English due to the interleaved FFI, this aspect was mentioned the second most

frequently from the participants' answers ( $f = 9$ ). Nine participants described that they liked studying with the interleaved FFI as the activities provided during the class time were to promote communication skills, especially speaking and writing. For the examples, P 11 and P 9 mentioned that he found the interleaved FFI activities very useful and he preferred studying English class this way because the activities designed for the treatment gave the participants the opportunity to use English to communicate with friends and to complete the tasks.

#### Excerpt 6

P 11: “ผมรู้สึกชอบการสอนของอาจารย์ที่เริ่มต้นชั่วโมงด้วยกิจกรรมที่เน้นให้นักเรียนพูดหรืออ่าน เช่น เล่น Board Game ที่ต้องตอบคำถามใช้ Past Simple tense หรือที่ให้อ่านเรื่อง The Long-lost Diamond พอทำกิจกรรมเสร็จก็สลับมาเรียนไวยากรณ์ของประโยคที่เจอต้นชั่วโมง แล้วให้นักเรียนเอาความรู้เรียนมาแต่งประโยคเอง การเรียนแบบนี้ทำให้ได้เรียนรู้การใช้ Tense ได้เน้นการสื่อสาร ได้ฝึกใช้”

“I liked the teaching sequence the instructor used in class. The class began with a communicative activity focused on aiding students to speak or read in English, for example, the Board Game that students had to use Past Simple tense to answer the question in the game, or the reading passage ‘The Long-lost Diamond’. After the activity at the beginning of the class,

the lesson was changed to focus on English grammar forms. The sentences we encountered in the previous activity were used to be examples. And then the students had to apply the knowledge we had just learned to make our own sentences. This way of teaching helped me understand English tenses and have more chances to practice by using English to communicate.”

Excerpt 7

P 9: “ผมรู้สึกชอบที่ได้อ่านเรื่องใหม่ๆ ที่น่าสนใจ เช่น The Long-lost Diamond กับ King of Skate และการเรียนแบบนี้พอตอนท้ายชั่วโมงก็ได้ฝึกทักษะการเขียน ได้แต่งประโยคด้วยตนเอง ผมรู้สึกว่าผมเขียนได้คล่องกว่าเดิม ผมรู้สึกว่าวิธีการเรียนแบบนี้สนุกดี ไม่เหมือนที่เคยเรียนมาก่อน”

“I liked these lessons that I got to read interesting stories like ‘The Long-lost Diamond’ and ‘King of Skate’. And with this sequence of teaching, at the end of the class, I got a chance to practice my writing skills, I had to make sentences in English on my own. I felt I was more fluent in writing than before. I felt that this way of teaching was fun, unlike the old way I used to have.”

### 3.1.3 Interleaved FFI was fun, not boring, unlike the traditional lessons.

Besides the positives perceptions towards the interleaved FFI on participants' understanding and enhancing long-term retention of the grammatical knowledge, five participants reported that in their opinions, studying English with the interleaved FFI was fun. They stated that with this lesson design, the class kept them active, unlike the traditional lessons, as shown in Excerpt 8 of Participant 9, Excerpt 9 of Participant 11, and Excerpt 10 of Participant 12 below.

#### Excerpt 8

P 9: “...ผมรู้สึกว่าการเรียนแบบนี้สนุกดี ไม่เหมือนที่เคยเรียนมาก่อน”

“...I felt that this way of teaching was fun, unlike the old way I used to have.”

#### Excerpt 9

P 11: “ผมรู้สึกการเรียนแบบนี้มันสนุก ได้เรียนหลายหัวข้อทำให้ไม่น่าเบื่อ ไม่เหมือนเวลาเรียนไวยากรณ์แบบก่อนหน้านี้ เรียนซ้ำๆ เลยน่าเบื่อ”

“I felt that this way of teaching was fun. The lessons contained many topics which make them not boring, unlike the way I used to study grammar. I studied the same thing over and over. It was boring.”

## Excerpt 10

P 12: “ชอบเพราะมีกิจกรรมหลายแบบ มีเกมส์ให้เล่น อยากเรียนแบบนี้อีก”

“I like this way of teaching because there were many kinds of activities.

There were games. I wanted to study more with this way of teaching.”

*3.1.4 The participants felt encouraged as they received feedback on their performance constantly.*

This category was an additional category added after analyzing the data from the interviews. This category was considered one of the positive perceptions of the lesson design of the interleaved FFI. Out of the 12 participants, randomly selected for the semi-structured interview, when they were asked about how they felt about the overall lessons and classroom atmosphere (e.g. what they liked or disliked apart from the way the lessons were organized in mixing-topic teaching), half of them answered that they felt motivated to practice more often and study harder because they got the feedback from the researcher constantly and were encouraged that they had done a great improvement and they still could do better.

## Excerpt 11

P 6: “หนูชอบที่ได้รู้ว่าตัวเองแต่งประโยคผิดตรงไหนและต้องแก้ยังไง หนูรู้สึกว่ามันอยากทำให้ดีขึ้น หนูจะตั้งใจเรียนมากขึ้น หนูชอบที่อาจารย์คอยให้กำลังใจ และแก้ให้เวลาหนูพูดผิดหรือเขียนผิด หนูรู้ว่าหนูไม่ค่อยเก่งภาษาอังกฤษ แต่หนูจะพยายาม”

“I liked when I got the feedback such as what was the errors I made and how to correct them. I felt I would like to be better, to do better. I would study harder. I liked when the instructor gave me encouragement and when he corrected the errors I made when I spoke or wrote something. I knew I was not good at English, but I would try harder.”

## Excerpt 12

P 4: “หนูชอบเวลาอาจารย์บอกให้ฝึกเยอะ ๆ บอกว่า ‘Practice makes perfect’ หนูอยากเก่งภาษาอังกฤษ และหนูอยากให้อาจารย์ช่วยแก้และอธิบายเวลาหนูเขียนผิดเยอะ ๆ”

“I liked when the instructor told the class to keep practicing. I liked the quote he always said ‘Practice makes perfect’. I would like to be good at English and I would like the instructor to correct my mistakes more and explain about my errors more.”

### 3.2 Negative Perceptions towards the Interleaved FFI

From the semi-structured interview, there were also students reporting their negative perceptions towards the interleaved FFI. These negative perceptions can be divided into two themes:

1. *Feel confused and unfamiliar*

2. *More difficult to understand*

3.2.1 *The interleaved practice made the participants confused and unfamiliar.*

In regard to the negative perception that the participants felt after having been in the treatment for 12 weeks, the perception that interleaved FFI caused confusion to the participants was obtained the most frequencies in the answer from the interview ( $f = 8$ ). Even though the majority of the participants' perceptions were quite positive, most of them also found the treatment confusing at first as already shown in Excerpt 1, 3, and 5. For more examples, Participant 4 mentioned that she would like to study topic by topic or Participant 1 said the interleaved practice made the lesson more confusing. To elaborate more in detail the information was shown in Excerpt 13 and Excerpt 14 below.



## Excerpt 13

P 4: “หนูรู้สึกว่ายากเรียนให้เป็นหัวข้อหรือเรื่องใดเรื่องหนึ่งหลาย ๆ ครั้ง ให้เข้าใจก่อน แล้วค่อยเรียนเรื่องใหม่ เพราะจะได้ทำความเข้าใจเป็นเรื่อง ๆ ไป ก่อนจะขึ้นเรื่องใหม่ การเรียนแบบนี้รู้สึกว่ามันยาก ทำให้สับสนไม่เข้าใจ และทำให้ลืมได้ง่าย”

“I would like to study topic by topic. I would like to study each topic for several times before being introduced to a new lesson. It was because I would like to understand each topic first before learning a new one. Studying this way was confusing, not understandable, and easy to forget.”

## Excerpt 14

P 1: “การเรียนสลับหัวข้อไปมาทำให้บทเรียนมันดูยากขึ้น ไม่ค่อยชอบเรียนแบบนี้ รู้สึกสับสน แต่อาจารย์ก็สอนได้สนุกดี เวลาทำกิจกรรมก็ตื่นเต้นดี”

“The mixing-topic teaching made the lessons seem to be harder. I quite disliked this way of teaching. I felt confused. However, the instructor taught well and the lessons were fun. The activities were exciting.”

3.2.2 *The interleaved practice made the lessons more difficult to understand.*

Consistently, as shown in Excerpt 13 and Excerpt 14, all participants, who reported their confusion due to the treatment of the interleaved FFI, also complained that with this teaching design, it made the lessons more difficult to understand as in Excerpt 15 and Excerpt 16.

Excerpt 15

P 7: “ตอนแรกรู้สึกว่ามันยากขึ้น ไม่ชินกับการเรียนแบบนี้ อยากเรียนแบบเดิม แบบทีละหัวข้อ ไม่ต้องสลับไปสลับมา เรียนแบบนี้ทำให้งง แต่เรียนไปสักพักการเรียนแบบสลับไปมาก็ทำให้สามารถเปรียบเทียบ Tense แต่ละ Tense ได้”

“At first, I felt it was more difficult to study this way. I was unfamiliar with this way of studying. I wanted the old way, one topic at a time, not mixing. Studying this way made me confused. However, after studying for a while, this mixing-topic teaching did help compare the tenses.”

Excerpt 16

P 5: “รู้สึกว่ามันยากขึ้น เรียนแล้วไม่เข้าใจ สับสน พอเป็นแบบนี้ทำให้ลืมที่เรียนไปง่ายขึ้น เพราะยังไม่เข้าใจเรื่องเดิมก็เรียนเรื่องใหม่แล้ว”

“I felt it was more difficult to study this way. I did not understand the lesson. I was confused. Because of this, I felt it made me forget the lesson more easily as the new topic was introduced even though I still did not understand the previous topic.”

### 3.3 Analyzing perceptions towards interleaved practice and FFI separately

The previous section was the overall results from the semi-structured interview on the participants’ perception towards the treatment. In this section, the researcher would like to inspect, from the participants’ answers, which perspectives were derived from the interleaved practice and which from FFI. Interestingly, the results revealed all negative perceptions from the interviews were only on the interleaved practice and no single participant reported having negative perceptions towards FFI. The best example is shown in Excerpt 14 by Participant 1 that she disliked the mixing-topic teaching, but the activities were exciting, and more details from her answer shown below in Excerpt 17.

#### Excerpt 17

P 1: “กิจกรรมเน้นการสื่อสารช่วยให้รู้คำศัพท์ในการสื่อสารในชีวิตประจำวัน และการได้ทำกิจกรรมทำเรื่องต่างๆ เช่น The Long-Lost Diamond ช่วยให้นักเรียนรู้ศัพท์และอ่านได้คล่องมากขึ้น”

“The communicative activities helped me learn more vocabulary that can be used in daily conversation. Activities after the reading like from ‘The Long-Lost Diamond’ helped students know more vocabulary and read more fluently.”

Another example reporting the dislike of the mixing-topic teaching but the like of activities can be quoted from Participant 5 as shown in Excerpt 18.

Excerpt 18

P 5: “ชอบ Board Game ได้ตอบคำถามแข่งกับเพื่อน สนุกดี”

“I liked Board Game. Competing with friends by answering the questions was fun.”

From the findings, it can be concluded that all participants had positive perceptions towards the communicative activities following the principle of FFI, but the feeling about the interleaved practice was mixed.

#### 3.4 Analyzing perceptions by the demography of the participants

In this section, it was further investigated whether the sex and the level of English competency would affect how the participants perceived the interleaved practice. The 12 participants chosen by the simple random technique were four male and eight female students. The participants’ level of English competency was divided

into two groups: students with a high level of English competency and students with a low level of English competency. From the 12 participants, there were six participants who got pre-test scores above the mean score and the other six received the scores at the mean score or below.

#### 3.4.1 Analyzing perceptions by the sex of the participants

The perceptions towards the treatment were reported separately due to the sex of the participants as in Table 16 and Table 17.

These two tables revealed that 75% of male students had a total positive perception towards the interleaved FFI and 25% had a negative perception at first but turned positive later. No male student reported having a negative perception towards the treatment. On the other hand, only 37.5% of female students reported having a total positive perception towards the interleaved FFI, 25% had a negative perception at first but turned positive later, and another 37.5% of female students reported having a total negative perception towards the treatment.

*Table 16 Perceptions towards the treatment from male participants (n = 4)*

<i>Participants' Perceptions</i>	<i>Frequencies</i>
Total positive	3
Negative at first and then positive later	1
Total negative	0

*Table 17 Perceptions towards the treatment from female participants (n = 8)*

<i>Participants' Perceptions</i>	<i>Frequencies</i>
Total positive	3
Negative at first and then positive later	2
Total negative	3

#### 3.4.2 Analyzing perceptions by the level of English competency of the participants

At first, the participants' level of English competency in the present study were divided into two groups: students with a high level of English competency and students with a low level of English competency. During this step, the students with a high level of English competency were the ones who received the pre-test scores above the mean score and the students with a low level of English competency were the ones who received the pre-test scores at the mean score or below.

From the 12 participants in the semi-structured interview, there were six participants who got pre-test scores above the mean score and the other six received the scores at the mean score or below. When comparing the interviews with the test scores, the researcher found that 50% of the participants with a high level of English competency reported a total positive perception towards the interleaved practice and

the other 50% reported a negative perception at first and turned positive later. On the contrary, the students with a low level of English competency showed mixed perceptions from a total positive to a total negative that 33.33% reported a total positive perception, 16.67% had a negative perception at first and turned positive later, and 50% had a total negative perception.

When the data were further investigated, it revealed that all participants who got pre-test scores above the mean score also got scores from immediate post-tests and delayed post-test above the mean score as well. On the other hand, 50% of the participants who had the pre-test scores at the mean score or below, at the end of the treatment, got the delayed post-test scores above the mean and the other 50% of the same group still got the delayed post-test scores below the mean score. In order to elaborate more details, the researcher, therefore, at this point, divided the participants into three groups: Group 1 high pre-test and high delayed post-test scores (6 participants), Group 2 low pre-test but high delayed post-test scores (3 participants), and Group 3 low pre-test and low delayed post-test scores (3 participants).

Interestingly, when comparing the interviews with scores of the participants in the three groups, the researcher found that the participants in Group 1 reported having both a total positive perception towards the interleaved practice and a negative perception at first and turned positive later. In group 2, 66.67% reported having a total

positive perception and 33.33 % having a negative perception at first and turned positive later. In Group 3, all participants reported having a total negative perception towards the interleaved practice.

In conclusion, the interleaved FFI instructions brought about both positive and negative perceptions from the participants. For positive perceptions, this teaching methodology with the nature that different concepts were intermixed and different topics could be compared overtly and constantly over time seemed to help a number of participants perceive that they understood the lessons more easily, could spot the differences of the two focused tenses more clearly and could remember the lessons better. Due to the Form-focused instruction approach which the focus of the language lessons is both on form and meaning, the participants felt that the activities they had in the English class were fun and provided more opportunities to practice the language. Last but not least, the participants also felt eager to study more thanks to the challenging feeling the interleaved practice yielded and also felt motivated owing to the encouragement and feedback they received from the instructor. On the other hand, while a number of participants had positive perceptions, some still claimed to have negative or somewhat negative perceptions towards the instruction. The two themes of negative perceptions were the confusion and sense of unfamiliarity the participants felt and the difficulty caused by the interleaved lessons.



#### 4. Summary of the Chapter

Overall findings of this study revealed that the interleaved FFI had a positive result on the improvement of grammatical knowledge of Thai EFL lower secondary school students, enhanced long-term retention of the grammatical knowledge, and resulted in causing both positive and negative perceptions from the students in the treatment group.

The scores from both the immediate post-test and delayed post-test were significantly different. Most participants gained the immediate post-test score higher than the pre-test, and no participant got the score on the immediate post-test lower than the pre-test. In order to find the effectiveness of the treatment on enhancing long-term retention of the grammatical knowledge, the pre-test, immediate post-tests, and delayed post-test scores were also compared and analyzed, and the result revealed that the one-week delayed post-test scores were significantly different and the majority of the participants obtained the one-week-delayed post-test score higher than the immediate post-test, some of them got the same scores, and a few got a lower score on the one-week delayed post-test.

Concerning the students' perceptions towards the interleaved FFI, the finding revealed that there were positive and negative perceptions from applying this teaching

approach in the English classroom. The positive perceptions included the feeling it was easy to understand as two topics were constantly compared; they had more opportunities to practice English; the lessons were fun and not boring; lastly, they felt encouraged as receiving feedback constantly. On the contrary, the main negative perceptions of this study included the confusion and the unfamiliarity of the lesson design that the participants felt and the feeling that the lessons seemed to be more difficult.

To sum up, based on these statistical outcomes, it can be claimed that interleaved FFI has effects on the improvement of students' grammatical knowledge in all areas: form, meaning, and use and also enhances long-term retention of the knowledge. The majority of the students had positive perceptions even though there were still some negative perceptions towards the instruction.

## CHAPTER V

### DISCUSSIONS AND RECOMMENDATIONS

This chapter presents a summary of the study, summary of findings, and a discussion of the findings in comparison with the previous studies. In addition, the limitations of the study, pedagogical implications, and suggestions for future research are presented.

#### 1. Summary of the Study

This study employed a one-group repeated measure design to investigate the effects of interleaved form-focused instruction on Thai EFL lower secondary school students' grammatical knowledge, long-term retention of grammatical knowledge, and their perception towards the instruction. The participants were 23 eighth-grade students who studied in the regular program at a private school in Phra Nakhon Si Ayutthaya province in the second semester of the academic year 2020. The research used a convenience sampling technique to select one intact classroom out of the three that the researcher was assigned to teach by the school's administrators.

The instruction was implemented in a fundamental English course. There are four key components of input-based approach with processing instruction method of FFI including 1) when learners are exposed to the input, their first focus is on its

meaning; 2) learners are provided with the explanation of the focused linguistic forms; 3) learners are provided with input-based activities designed – focused practice – to help learners process language regularities; 4) learners are provided with an uncontrolled exercise or task to produce the output. Each participant took a pre-test, participated in the activities provided for each step and completed the immediate post-test at the end of each unit, and took a one-week delayed post-test after the treatment.

The research instruments in this present study were grammaticality judgement test, discrimination test, and semi-structured interview questions. First of all, to explore the effects of the interleaved FFI on the improvement of grammatical knowledge of Thai EFL lower secondary school students, the data obtained from the pre-test and immediate post-tests were analyzed by using a pair-sample T-test to compare the mean scores, mean difference, and standard deviation. Second, to investigate the effects of the interleaved FFI on the retention of grammatical knowledge of Thai EFL lower secondary school students, the data obtained from pre-test, immediate post-tests, and one-week delayed post-test were analyzed using repeated-measures ANOVA. Lastly, for the data obtained from the semi-structured interview, they were analyzed using content analysis and statistical analysis of the participants' perceptions towards the interleaved FFI.

## 2. Summary of the Findings

The recent study revealed three main findings according to the research questions. Firstly, the quantitative data, analyzed by using pair-sample T-test of the pre-test and immediate post-tests to compare the mean scores, mean difference, and standard deviation to figure out the effects of the interleaved FFI on the improvement of grammatical knowledge of Thai EFL lower secondary school students after the treatment, showed statistical significance in the improvement of participants' grammatical knowledge at the immediate post-tests in all three areas - forms, meanings, and uses of Past Simple and Present Perfect tense.

Secondly, the quantitative data from pre-test, immediate post-tests, and one-week delayed post-test including both the grammaticality judgement test and discrimination test in terms of the knowledge of linguistic forms of and the meanings and usage of Past Simple and Present Perfect tense were analyzed by using repeated-measures ANOVA with a Greenhouse-Geisser correction and Post Hoc Test using Bonferroni correction including the descriptive statistic such as mean scores, standard deviation, and 95% Confidence Interval for Difference with an adjusted time of the evaluation as a co-variable to figure out the effects of the interleaved FFI on long-term retention of grammatical knowledge of Thai EFL lower secondary school students after the treatment. The results showed statistical significance at both

immediate post-tests and one-week delayed post-test of the treatment which indicated that the interleaved FFI did not only result in the improvement of the grammatical knowledge of the participant but also in the enhancement of the long-term retention of the grammatical knowledge.

Lastly, the data obtained from the semi-structured interview about the participants' perception towards the interleaved FFI disclosed that there were both positive perceptions and negative perceptions towards the interleaved FFI. The four positive perceptions included 1) the feeling that the lessons were easy to understand as two topics were constantly compared; 2) the participants had more opportunities to practice English; 3) the lessons were fun and not boring – unlike the traditional lessons; lastly, 4) they felt encouraged as receiving feedback constantly. On the contrary, the two negative perceptions of this study included 1) the confusion and unfamiliarity that the participants felt towards the treatment and 2) the more complicated and difficult that the lessons seemed to be.

### 3. Discussions

In the present study, the data illustrated that the interleaved FFI could help improve students' grammatical knowledge and enhance long-term retention of the knowledge. The following section presents the discussions of the findings in light of previous studies.

#### **3.1 The Effects of Interleaved FFI on the Improvement of Grammatical Knowledge of Thai EFL Lower Secondary School Students**

According to the research outcomes, the data can be interpreted that interleaved FFI has positive effects on the improvement of students' grammatical knowledge due to the result of a paired t-test between the pre-test and immediate post-tests. The result of this study is contrasted with the results of Pan et al.'s (2019) and Nakata and Suzuki's (2019), both of which indicated that the effectiveness of interleaved practice on language learning did not lead to higher performance on the immediate post-test, but indeed had positive effects on the delayed post-test. They claimed that due to the interference of the different concepts or skills being taught and practiced at the same time, it brought about lower performance on the immediate post-test compared to the control group receiving the traditional lessons.

However, the result of this research is consistent with the studies of Suzuki and Sunada (2020) yielding the result that the treatment group with interleaved

practice gained higher accurate performance scores on immediate post-test, even though in their study there was no statistical significance on the one-week delayed post-test. Suzuki, Yokosawa, and Aline's (2020) research showed result that the treatment group with interleaved practice gained higher accurate performance scores on both immediate and delayed post-test than the control group.

It is essential to note that the interleaved FFI in this study was designed in a cumulative schedule – providing blocked practice first and then following by the interleaved practice for each unit. As all the three immediate post-tests were taken right after the treatment, it would be the cause of the high scores as the participants still remembered all the lessons clearly in their minds. However, there is also a theory to support the advantage of the hybrid lesson design which may be clarified by the desirable difficulty framework (Bjork, 1994 cited in Suzuki & Sunada, 2020). It was proposed that knowledge and skill acquisition would occur when the appropriate level of difficulty was provided to the learners. Therefore, for the lessons to start with the blocked practice, it helped scaffold learning to the learners to understand the fundamental concepts necessary for the lessons. When the learners' knowledge improves, more challenging practice must be provided where learners' knowledge and skills match the demand and that was when the interleaved practiced was implemented after two sessions of the blocked practice in this study. In the previous



studies, they used purely interleaved practice and the participants might not acquire the benefits of interleaved practice early in the process as the difficulty of the lessons might surpass their ability. This hybrid schedule with the gradual scaffolding for the increasing level of difficulty would aid the learning and explain how the statistical significance of the high scores at the immediate post-tests was shown in this study.

### **3.2 The Effects of Interleaved FFI on the Enhancement of Grammatical Knowledge Retention of Thai EFL Lower Secondary School Students**

From the research outcomes, the positive effect of interleaved FFI on enhancing long-term retention of grammatical knowledge is consistent with the previous studies of Pan et al. (2018), Nakata and Suzuki (2019), and Suzuki et al. (2020), all of which yielded the result that the treatment group with interleaved practice lessons gained higher accurate performance scores on the delayed post-test. To the best of the research's knowledge, only Suzuki and Sunada's (2020) study on the effect of interleaved practice on L2 learning and teaching did not yield a positive result on the delayed post-test. As following the line of the prior work, it suggested that deliberately and systematically designed practice is an essential stage of developing knowledge and skills in learning languages (DeKeyser, 2007, 2015; Nakata & Suzuki, 2019; Suzuki et al., 2020) and interleaved practice seems to be a useful treatment to be applied in language classrooms.

A number of theories have been proposed to explain how lessons with interleaved practice resulted in better long-term retention than the traditional lessons. Firstly, with interleaved practice, the prolonged distribution, called spacing effect – the practice schedule distributed over multiple occasions – has been confirmed to provide superior retention when compared to blocked or traditional lessons where practices occur successively without the interval of other concepts or skills (Kang, 2017; Nakata and Suzuki, 2019).

Secondly, by encountering intermixed lessons of different new concepts and skills, there is an interleaving effect which happens when new information being transferred constantly and forcing the brain to be active continually due to the rote responses pulled from short-term and long-term memory, which does not happen with the blocked or traditional lessons (Kang, 2017; Hughes & Lee, 2019). Even though there has been research claiming the interleaved practice is more energy consumption and seem to be harder in students' perception, but it is reported to bring about better accuracy and long-term retention of the learned knowledge and skills (Kang, 2017; Nakata and Suzuki, 2019; Pan et al., 2019). This phenomenon also happened in the present study as it was found in the semi-structured interview that most participants had a negative perception towards the interleaved practice at first and then turned positive later after they got familiar with the interleaved practice. This can be

interpreted the interleaved practice is more suitable with lessons or training that has a loose time constraint where the participants could take time to acclimatize themselves with the unfamiliar learning style.

Lastly, the benefit of interleaved practice is also related to the transfer-appropriate processing (TAP) theory (Morris, Bransford, & Franks, 1977) arguing that when the testing condition matches the condition in the lessons, students' performance is enhanced. The condition of the post-tests used in this study were the mixed items of a multiple-choice test designed to measure the knowledge of the linguistic forms of and the meaning and usage of Past Simple and Present Perfect tense which were similar to the design of interleaved FFI lesson plans that the students had to practice these mixed topics throughout the study. Therefore, the TAP theory predicts that interleaved practice should lead to a better performance in the post-tests. More importantly, interleaved practice is also the classroom simulation representing real-life situations that different tenses and other grammatical aspects are needed to react on spontaneous conversation or writing and there is not any situation appearing to require the use of grammatical knowledge in a planned order or blocked pattern.

### **3.3 Thai EFL Lower Secondary School Students' Perceptions towards the Interleaved FFI**

According to the findings in many studies, students in those studies perceived that the traditional method was easier to study and more effective to learn even though the results from the research revealed otherwise (Kang, 2017; Pan et al., 2019; Nakata & Suzuki, 2019). Due to the nature of the interleaved lessons and interleaving effects, the literature showed that after having studied with both interleaved and traditional practice, the learners tended to favor the latter and think that the traditional lessons were more effective as the consecutive repetition of the traditional lessons provided the sense of fluency and the feeling of the gains in learning (Abushanab & Bishata, 2013; Kang, 2017; Kornell and Bjork, 2008).

The results of the semi-structured interview from this study on participants' perception towards the interleaved FFI and the classroom atmosphere overall analyzed by using content analysis method was partially consistent with the previous studies mentioned above; however, there were also positive perceptions that the previous studies had not mentioned. In this study, the findings from the content analysis indicated two main categories of the participants' answers: the positive perceptions towards the interleaved FFI and the negative perceptions towards the interleaved FFI.

The differences in the positive findings of this study that were not shown in the previous ones may derive from the time allotment of the treatment. Most of the previous studies were conducted in one or only a few sessions, but for this study, it was conducted for 14 sessions within 9 weeks. And upon looking at the interview closely, most of the participants reported they have also had the feeling of confusion, unfamiliarity, and struggling due to receiving the treatment in the early sessions of the study as some examples shown in Excerpt 1, Excerpt 3, and Excerpt 15 in Chapter 4 and the positive perception came later on. The participants also reported that after being familiar with the interleaved practice, they felt that this practice schedule was more beneficial compared to the traditional lessons they used to have.

While most negative perceptions, according to the interview, were usually derived from the interleaved practice, when considering the participants' perspective on FFI alone, the researcher found that all of the participants' answers, even from the ones who reported that they totally disliked mixing-topic teaching e.g., Participant 1 and 4, were positive towards the activities following the principle of FFI provided in class. This can be seen from Excerpt 14 of P 1, Excerpt 7 of P 9, and Excerpt 11 of P 6, for example.

The positive perception towards FFI found in this study is consistent with many previous studies such as the study of Asassfeh, Khwaileh, Al-Shaboul, and

Alshboul (2012) on learners' attitudes and perception about the implementation using CLT in an EFL Context that students favored communication-based and having grammar explanations when necessary. The study of Brubacher (2014) also revealed that Korean EFL students preferred English language teaching to be focused on meaning with attention paid to form-focused instruction. These findings highlighted that language classrooms should be designed and provided with lessons containing communicative activities and meaningful context which are the key principle of FFI.

Last but not least, when the result of the semi-structured interview of each participant was compared with his or her test scores, the researcher found that all participants, who provided answers that they had positive perceptions towards the interleaved FFI or negative perceptions at first but positive perceptions after getting familiar with the hybrid lesson design, got significantly higher scores on the immediate post-tests and one-week delayed post-test compared to the pre-test. In contrast, the participants who provided answers that they completely had negative perceptions towards the interleaved FFI, their test scores on the immediate post-test and one-week delayed post-test were insignificantly improved compared to the pre-test. As Rohrer and Hartwig (2020) stated that blocked practice might produce a sense of fluency and confidence whereas interleaved practice might reduce them, this intriguing detail can be interpreted that interleaved practice might be suitable for students who are a bit more risk-takers and who love challenges so that they feel

eager to overcome the more difficult tasks; on the other hand, blocked practice might be suitable for students who prefer passive teaching and need support on confidence issues.

#### 4. Limitations of the Study

Although this study has successfully been conducted and the findings reached all the research objectives on the effects of interleaved FFI on the improvement of the participants' grammatical knowledge, the long-term retention of the grammatical knowledge, and the perceptions towards the instruction. There were some limitations that may affect the findings of the study. Firstly, this study was implemented for only 14 periods or 9 weeks. In order to have more insightful information on the effects of the interleaved FFI on the improvement of the participants' grammatical knowledge, the long-term retention of the grammatical knowledge, and the perceptions towards the instruction, time allotment could be extended.

Secondly, the present study employed two parallel tests that the pre-test and one-week delayed post-test were identical while the immediate post-tests were the parallel one to the pre-test and one-week delayed post-test. Consequently, due to the use of two different sets of the tests, this might affect how the delayed post-test scores were higher than the immediate post-test, unlike other previous studies that most

delayed post-test scores, even though they were significantly higher than the pre-test, usually were lower than the immediate post-test.

Thirdly, during the implementation of the study, there was a 5-week school closure due to the COVID-19 pandemic after the first 4 weeks of the implementation. Due to the school closure, the researcher had to respond to and solve the situation by providing 2 review sessions after the school was able to open again before continuing the treatment, and there was a change by the school administrator on the schedule of the treatment from 1 session per week as the original research design to 2 sessions per week instead. This incident affected the lesson design and time allotment of the implementation that might also affect the result of the study.

Lastly, with the limited number of participants in the present study, it might not be able to claim a generalization that interleaved FFI is a better method that could yield better improvement of the grammatical knowledge and long-term retention of the knowledge than the traditional lessons.

## 5. Pedagogical Implications

The findings from the present study suggested the following pedagogical implications. Firstly, a number of studies in many aspects of English communicative skills have revealed the advantages of the interleaved practice over the traditional



lessons. English instruction using interleaved practice can be implemented in any kind of English course, not only for the lessons aiming to help students focus on both meaning and form as the FFI done in this research, but also for other skills such as listening, speaking, and writing. It is noteworthy that the interleaved practice can be adapted to implement with all communicative skills.

Secondly, the schedule design can also be planned due to the ability and readiness of the students. The lessons can be designed with a purely interleaved practice that more than one concept or skill is intermixed in every single period throughout the course. This may suit the students who have some background and knowledge enough for this challenging design as Kang (2017) mentioned that the interleaved practice should be provided for the learners with at least intermediate level. This lesson design is important for the students because the interleaved practice is somehow like a simulation of the real-world communication that the students cannot expect to use only one aspect of concept or skill in order to complete the task. On the other hand, the interleaved practice with a cumulative schedule, also called the increasing practice or hybrid practice, may be more suitable for students who are new to the L2 and still need solid fundamental concepts and skills before being challenged with another level of difficulty simulating the use of the language in the real world.

The mixing between blocked and interleaved would scaffold learning and increase students' confidence in the use of the new language.

Lastly, as the semi-structured interview in this study revealed that most of the participants being interviewed reported they were confused and unfamiliar with this mixing-topic schedule and it seemed to be more difficult for them at first, compared to the traditional lessons they used to have. The finding suggests that even though the interleaved practice yields many benefits to the students, this lesson design also causes the feeling of confusion, unfamiliarity, and exhaustion in students' perspectives. Consequently, the lessons must be provided with careful observation, encouragement, and constructive feedbacks constantly so that the students know that their effort and energy are spent in vain and there is progress along the process. It is undeniable that extrinsic and intrinsic motivations play an important role in all aspects of learning and skill development.

## 6. Suggestions for Future Research Studies

For future studies, firstly, one of the most interesting findings from the semi-structured interview was that all male students had a positive perception or a negative perception at first but turned positive later while 37.5% of female students had a total negative feeling and 25% had a negative perception at first but turned positive later.

However, with the limited number of participants, it cannot be concluded that the interleaved FFI was more suitable for male students than female students. Therefore, the future study can investigate whether there is a correlation between the sex of the participants and the perception towards the interleaved FFI.

Moreover, as the lesson design in the present study was only the interleaved practice with a cumulative schedule and the scarcity of research regarding the interleaved practice with young learners. Therefore, future studies could also be done by separating participants into a purely interleaved practice group and the cumulative schedule group, and then the comparison of the two groups can be analyzed to disambiguate which practice better improves participants' knowledge and long-term retention for young learners.

Lastly, as the finding from the semi-structured interview showed that the participants were eager to study with the interleaved FFI as they reported that with this type of lesson design, it provided them more opportunities to use English and they felt more motivated; therefore, the future studies can also be done to further insights on the correlation between the participants' motivation and the interleaved practice.

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# Appendices

## Appendix A: Lesson Plans

Lesson Plan 1: Past Simple 1 - What should be the title of this story?
<p><b>Target Audiences and Context:</b> Thai EFL students  <b>Learner Level:</b> Grade 8  <b>Class Size:</b> 20-25  <b>Class Length:</b> 60 minutes</p>
<p><b>Learning Outcome:</b></p> <ul style="list-style-type: none"> <li>• Students will be able to use past tense forms of verb, both regular verbs and irregular verbs, to write about situations in the past correctly.</li> </ul> <p><b>Core Curriculum Indicator</b></p> <ul style="list-style-type: none"> <li>• FL4.1 Gr.8/1 use language for communication in real situations/ simulated situations in the classroom, school, and community.</li> </ul> <p><b>Focus Content:</b></p> <ul style="list-style-type: none"> <li>• The usage of regular and irregular verbs in past tense form</li> </ul> <p><b>Materials:</b></p> <ul style="list-style-type: none"> <li>• Projector</li> <li>• PowerPoint slides</li> <li>• Jigsaw puzzles</li> <li>• Worksheet exercises</li> </ul>

### Learning Procedures

Time	Procedures
5 mins.	<p><b>Welcoming Students</b></p> <ul style="list-style-type: none"> <li>- The teacher will take attendance.</li> <li>- Students are asked about their weekend.</li> <li>- Students are informed about today's activity and lesson "<b>What should be the title of this story?</b>"</li> </ul>

Time	Procedures
20 mins.	<p><b>Language Exposure Stage by Providing Input and Communicative Activities</b></p> <p>(In the handout, students will be exposed to the language through the short story containing many exemplars on the focused linguistic forms – structures of past simple tense in affirmative, negative, and interrogative forms.)</p> <p><b>Activity</b></p> <ul style="list-style-type: none"> <li>- Students are asked about fairy tales or short stories that they know.</li> <li>- Students are asked to share the interesting titles of the story that they know.</li> <li>- Students are asked to divide into a group of 4.</li> <li>- Students in the group receive an envelope (Appendix A).</li> <li>- Students listen to the presentation of how to do the activity.</li> </ul> <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>- The teacher shows the slide introducing the activity called “<b>What should be the title of this story?</b>” and give the instruction of the activity.</li> <li>- The teacher explains the rule of the activity in the envelop (Appendix A), there are pieces of sentences of one story. Therefore, students in each group have to rearrange those pieces into a story. And after finishing rearranging those pieces, the group has to come up with an interesting name for the story.</li> </ul> <p><b>Communicative Activity (Appendix A-1)</b></p> <p>(This activity is designed to make sure that the primary focus of the students is on the meaning of the input.)</p> <ul style="list-style-type: none"> <li>- Students have to read the instruction of the activity (Appendix A-1).</li> <li>- The group of students who finishes rearranging the story with the correct order get 10 points and the second group gets 9 points, and 8, 7, 6 to 1 point respectively.</li> <li>- Students get the answer key from the PowerPoint slides and check their group answer.</li> </ul>

Time	Procedures
	<ul style="list-style-type: none"> <li>- Students are asked to create a title of the story they have just read.</li> <li>- Each group presents the name of the story.</li> </ul>
20 mins.	<p><b>Noticing and Rule Generalizing Stage</b></p> <p>(This session is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.)</p> <ul style="list-style-type: none"> <li>- Students are asked to discuss the language forms they have just seen and used, and then explain it from what they understood.</li> </ul> <p>For example:</p> <ul style="list-style-type: none"> <li>A. The story <b><u>began</u></b> with a boy named Copter</li> <li>B. The story <b><u>began</u></b> with a boy named Copter</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>A. She <b><u>didn't give</u></b> him the detail</li> <li>B. She <b><u>didn't gave</u></b> him the detail</li> </ul> <ul style="list-style-type: none"> <li>- Students are asked to generate sentences – affirmative, negative, and interrogative – on the board.</li> <li>- Students are assigned to complete the worksheet on Focus-on-form exercises (Appendix A-3).</li> </ul>
20 mins.	<p><b>Language Creativity Stage (Producing the output)</b></p> <p>(This session is designed to let students use the language in an uncontrolled task. As it is the aim of language class that students are able to use language to communicate accurately, meaningfully, and appropriately.)</p> <ul style="list-style-type: none"> <li>- Each group of students receives additional worksheets (Appendix A-4).</li> <li>- Each group has to use at least 10 out of 20 verbs from the box in past tense form (V.2) to create a short story.</li> <li>- Each group presents the story within 2 minutes and submits their work to the teacher.</li> </ul>

## Assessment and Evaluation

	Method	Assessment Tools
<p>Activity 1: <b>What should be the title of this story?</b> (Appendix A)</p>	<p>- Jigsaw puzzles (it is a group work for students to rearrange shuffle chunks of sentences into the right order.</p>	<p>- Points for the correct arrangement - Points from the name given for the story</p>
<p>Activity 2: <b>Completing the worksheet</b> (Appendix D)</p>	<p>- Working in pairs to complete the exercises about the usage of past simple tense form in affirmative, negative and interrogative sentences</p>	<p>- Points for the correct answer</p>
<p>Activity 3: <b>Your story</b> (Appendix B)</p>	<p>- Working in group to create a short story from the verbs given (at least 10 out of 20)</p>	<p>- Scoring Rubrics (Appendix G)</p>



## Lesson Plan 2: Present Perfect 1 - King of Skate

**Target Audiences and Context:** Thai EFL students

**Learner Level:** Grade 8

**Class Size:** 20-25

**Class Length:** 60 minutes

### Learning Outcomes

- Students will be able to use present perfect tense to write about events, which have just finished or still continue to the present, correctly and appropriately.

### Core Curriculum Indicator

- FL1.2 Gr.8/4 speak and write appropriately to ask for and give information, describe and express opinions about what has been heard or read.

### Focus Content:

- The usage of present perfect tense to speak and write about events, which have just finished or still continue to the present

### Materials:

- Projector
- PowerPoint slides
- An Audio Track for A Dictogloss Activity
- Worksheet exercises

### Learning Procedures

Time	Procedures
5 mins.	<b>Welcoming Students</b> <ul style="list-style-type: none"> <li>- The teacher will take attendance.</li> <li>- Students are asked about what they have learned in the previous class.</li> <li>- Students are informed about today's activity and lesson "<b>King of Skate</b>"</li> </ul>

Time	Procedures
20 mins.	<p><b>Language Exposure by Providing Input and Communicative Activities</b> (In the handout, students will be exposed to the language through a biography containing many exemplars on the focused linguistic forms – structures of present perfect tense in affirmative, negative, and interrogative forms. This activity is designed to make sure that the primary focus of the students is on the meaning of the input.)</p> <ul style="list-style-type: none"> <li>- Students are asked to share what they know about extreme sports.</li> <li>- If there are any students who play those sports, have them share their experience.</li> <li>- Students are asked to divide into a group of 4.</li> <li>- Students in the group have to read the biography and answer the comprehensive questions about the biography (Appendix A-6).</li> <li>- The teacher shows the slide introducing the activity “Who is the Fastest Reader?” and explains the rule to the group of students.</li> <li>- The answer to the questions will be ‘True / False’ and the way to make sure that students understand the story is that the students have to identify which sentence in the story that they get the answer from.</li> <li>- The group who finishes answering the comprehensive questions with the highest scores gets 10 points and the second group gets 9 points, and 8, 7, 6 to 1 point respectively.</li> <li>- Students get the answer key from the PowerPoint slides and check their group answers.</li> </ul>
20 mins.	<p><b>Noticing and Rule Generalizing Stage (Turning input to intake)</b> (This session is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.)</p> <ul style="list-style-type: none"> <li>- The teacher shows the slide introducing another the activity using dictogloss technique with the same biography “<b>King of Skate</b>” but this time the focus will be on the linguistic forms.</li> <li>- The teacher explains the rule that the story (Appendix A-7) will be read</li> </ul>

Time	Procedures
	<p>to students two times:</p> <ul style="list-style-type: none"> <li>➤ For the first time, students cannot write anything down and after the biography was told, they have 2 minutes to discuss with friends in their group.</li> <li>➤ For the second time, students can write anything down during listening to the biography and after the biography was told, they have 2 minutes to finalize their draft and submit it to the teacher.</li> <li>➤ Then, the teacher goes over the answer of the focused linguistic forms.</li> </ul> <ul style="list-style-type: none"> <li>- Students are asked to discuss about the language forms they have just seen and used, and then explain it from what they understood.</li> </ul> <p>For example:</p> <ul style="list-style-type: none"> <li>A. He <b>hasn't stopped</b> since then.</li> <li>B. He <b>hasn't stopping</b> since then.</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>A. <b>Has he won</b> the first place in many contests?</li> <li>B. <b>Does he have won</b> the first place in many contests?</li> </ul> <ul style="list-style-type: none"> <li>- Students are asked to generate sentences – affirmative, negative, and interrogative – on the board.</li> <li>- Students are assigned to complete the worksheet on Focus-on-form exercises (Appendix A-8).</li> </ul>
20 mins.	<p><b>Language Creativity Stage (Producing the output)</b></p> <p>(This session is designed to let students use the language in an uncontrolled task. As it is the aim of language class that students are able to use language to communicate accurately, meaningfully, and appropriately.)</p> <ul style="list-style-type: none"> <li>- Each group of students receives additional worksheets (Appendix A-9).</li> <li>- Each group has to use present perfect tense to write a note about things to do and things that have already been done for the party planning.</li> <li>- Each group presents their version of the note within 2 minutes and submits their work to the teacher.</li> </ul>

## Assessment and Evaluation

	Method	Assessment Tools
Activity 1: <b>Who is the fastest reader?</b>	<ul style="list-style-type: none"> <li>- Read the biography</li> <li>- Answer the comprehensive questions</li> </ul>	- Points for the correct answers
Activity 2: <b>Completing the worksheet (Appendix C)</b>	- Working in pairs to complete the exercises about the usage of present perfect tense form in affirmative, negative and interrogative sentences	- Points for the correct answers
Activity 3: <b>Write a note about things to do for the party (Appendix D)</b>	- Working in group to create a note for the party planning (at least 10 statements)	- Scoring Rubrics (Appendix E)

### Lesson Plan 3: Interleaved Practice of Past Simple and Present Perfect of Unit 1

**Target Audiences and Context:** Thai EFL students

**Learner Level:** Grade 8

**Class Size:** 20-25

**Class Length:** 60 minutes

**Learning Outcome:**

- Students will be able to differentiate and choose to use past simple or present perfect for events in the past, events that have just happened, or events that still continue to the present correctly and appropriately.

**Core Curriculum Indicator:**

- FL1.2 Gr.8/4 speak and write appropriately to ask for and give information, describe and express opinions about what has been heard or read.

**Focus Content:**

- The forms, meaning, and use of past simple and present perfect tense

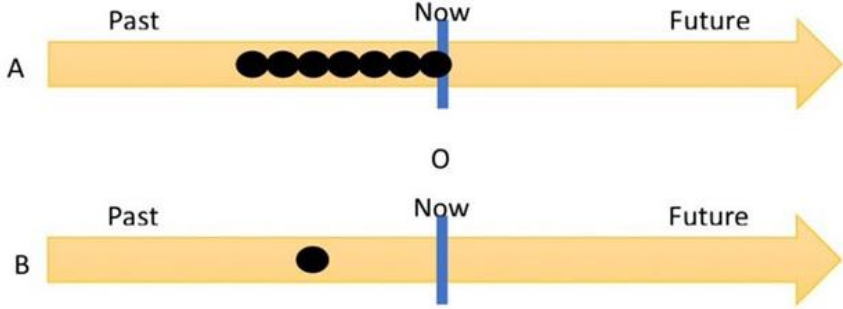
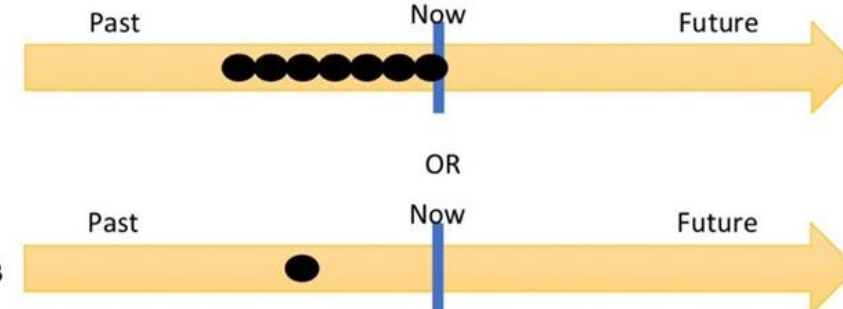
**Materials:**

- Projector
- PowerPoint slides
- Worksheet exercises

#### Learning Procedures

Time	Procedures
5 mins.	<p><b>Welcoming Students</b></p> <ul style="list-style-type: none"> <li>- The teacher will take attendance.</li> <li>- Students are asked about what they have learned in the previous class.</li> <li>- Students are informed about today's activity and lesson "<b>Revision of the previous weeks with interleaved practice</b>"</li> </ul>

Time	Procedures
20 mins.	<p><b>Noticing and Rule Generalizing Stages</b></p> <p>(This session is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.)</p> <p><b>Activity 1</b></p> <ul style="list-style-type: none"> <li>- Students are asked to fill in the blank with the linguistic forms they have learned in the previous classes to complete the text about the teacher's personal hobby. (Appendix A-11)</li> </ul> <p>For example:</p> <p style="padding-left: 40px;">A. I _____ (<b>have collected/collected</b>) figures from the novel and movie called Harry Potter for 7 years. The first figure, Harry Potter, I _____ (<b>have gotten/got</b>) it when I _____ (<b>have gone/went</b>) to Universal Studios in Japan 7 years ago. The second figure, Hermione Granger, I _____ (<b>have bought/bought</b>) it at Siam Paragon when there _____ (<b>has been/was</b>) a Harry Potter event. I _____ (<b>have remembered/remembered</b>) that I _____ (<b>have bought/bought</b>) it on Christmas Day 6 years ago. ...</p> <ul style="list-style-type: none"> <li>- The teacher shows the amazing pictures of the collections he or she has been collecting.</li> <li>- The teacher tells information of the first picture about the collection such as when and where the teacher got them.</li> <li>- The teacher has students read the text about the collection such as when and where the teacher got them.</li> </ul>
20 mins	<p><b>Activity 2</b></p> <ul style="list-style-type: none"> <li>- Students are asked to explain how the sentences like “<b><u>I have collected figures from the novel and movie called Harry Potter for 7 years</u></b>” and “<b><u>I got the first figure when I went to Universal Studios in Japan 7 years ago</u></b>” are different in meaning by using the arrows that refer to time of the action. (Appendix A-12)</li> </ul>

Time	Procedures
	<p>For example:</p> <p>“I <b>have collected</b> figures from the novel and movie called Harry Potter for 7 years”</p>  <p>“I <b>got</b> the first figure when I went to Universal Studios in Japan 7 years ago”</p> 
20 mins.	<p><b>Immediate Post-Test</b></p> <ul style="list-style-type: none"> <li>- Students are assigned to do an immediate post-test (Appendix A-13).</li> </ul>

### Assessment and Evaluation

	Method	Assessment Tools
Activity 1: <b>Completing the Text</b>	- Fill the right form of verb in the blanks to complete the text.	- Points for the correct answer
Activity 2: <b>Identifying the Timeline</b>	- Choosing the correct timeline that describes the action or event of the underlined verb.	- Points for the correct answer
Activity 3: <b>Immediately Post-test</b>	- Doing the immediate post-test	- Points for the correct answer

## Appendix B Lesson Plan Evaluation Form

### Index of Item Objective Congruence (IOC) of Lesson Plans

**Guideline for evaluation**

Please put a tick (✓) in the rating box (+1, 0, -1) in order to identify the appropriateness of the lesson plan according to your opinion. Please provide comments for further adjustment and improvement.

+1	means	Appropriate
0	means	Uncertain
-1	means	Inappropriate

**Lesson Plan 1: Past Simple 1 – What should be the title of this story?**

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Learning outcome</b>				
1. Learning outcomes are clearly stated what the students will know and will be able to do.  <i>“Students will be able to use past tense forms of verb, both regular verbs and irregular verbs, to write about situations in the past correctly.”</i>				
2. Learning outcomes are appropriate to the students’ level.  <i>“FL4.1 Gr.8/1 use language for communication in real situations/ simulated situations in the classroom, school, and community.”</i>				
3. Learning outcomes can be measured through learning activities.				
3.1 Activity 1: What should be the title of this story? (Language Exposure by Providing Input and Communicative Activities)				



Items	Level			Comments and suggestions
	+ 1	0	-1	
3.2 Activity 2: Completing the worksheet (Noticing Stage and Rule Generalizing Stage)				
3.3 Activity 3: Your story (Language Creativity Stage)				
<b>Content and material</b>				
4. Content, activities, and language level are appropriate for the students.				
5. Content and activities help support learning outcomes.				
6. The design of content and materials are attractive to the students.				
7. Content, materials, and activities can help learners to achieve the learning outcome.				
8. Content, materials, and activities are relevant to the lessons.				
<b>Learning condition</b>				
9. Form-Focused Instruction (FFI) is clearly applied to the lesson to help students focus on both meaning and form appropriately.				
10. Language Exposure Stage by Providing Input and Communicative Activities <i>“Students will be exposed to the language through the short story containing many exemplars on the focused linguistic forms – structures of past simple tense in affirmative, negative, and interrogative forms.”</i>				
11. Noticing Stage and Rule Generalizing Stage <i>“This session is designed to help students link the meaning to its form;</i>				

Items	Level			Comments and suggestions
	+ 1	0	-1	
<i>therefore, the language input will be registered as a language intake which is the basis of language learning.</i>				
12. Language Creativity <i>"This session is designed to let students use the language in an uncontrolled task. As it is the aim of language class that students are able to use language to communicate accurately, meaningfully, and appropriately."</i>				
<b>Assessment and Evaluation</b>				
13. The assessment aligns with the learning outcomes.				
13.1 Activity 1: What should be the title of this story? (Language Exposure by Providing Input and Communicative Activities)				
13.2 Activity 2: Completing the worksheet (Noticing Stage and Rule Generalizing Stage)				
13.3 Activity 3: Your story (Language Creativity Stage)				
<b>Time</b>				
14. The time is suitable for the lesson.				

Other suggestions:

.....

.....

.....

.....

(.....)

Date.....

**Lesson Plan 2: Present Prefect 1 – King of Skate**

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Learning outcome</b>				
1. Learning outcomes are clearly stated what the students will know and will be able to do.  <i>“Students will be able to use present perfect tense to write about events, which have just finished or still happen, correctly and appropriately.”</i>				
2. Learning outcomes are appropriate to the students’ level.  <i>“FL1.2 Gr.8/4 speak and write appropriately to ask for and give information, describe and express opinions about what has been heard or read.”</i>				
3. Learning outcomes can be measured through learning activities.				
3.1 Activity 1: Who is the fastest reader? (Language Exposure by Providing Input and Communicative Activities)				
3.2 Activity 2: Completing the worksheet (Noticing Stage and Rule Generalizing Stage)				
3.3 Activity 3: Write a note about things to do for the party (Language Creativity Stage)				
<b>Content and material</b>				
4. Content, activities, and language level are appropriate for the students.				
5. Content and activities help support learning outcomes.				
6. The design of content and materials are attractive to the students.				

Items	Level			Comments and suggestions
	+ 1	0	-1	
7. Content, materials, and activities can help learners to achieve the learning outcome.				
8. Content, materials, and activities are relevant to the lessons.				
<b>Learning condition</b>				
9. Form-Focused Instruction (FFI) is clearly applied to the lesson to help students focus on both meaning and form appropriately.				
10. Language Exposure Stage by Providing Input and Communicative Activities <i>“Students will be exposed to the language through the short story containing many exemplars on the focused linguistic forms – structures of past simple tense in affirmative, negative, and interrogative forms.”</i>				
11. Noticing Stage and Rule Generalizing Stage <i>“This session is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.”</i>				
12. Language Creativity <i>“This session is designed to let students use the language in an uncontrolled task. As it is the aim of language class that students are able to use language to communicate accurately, meaningfully, and appropriately.”</i>				
<b>Assessment and Evaluation</b>				
13. The assessment aligns with the learning outcomes.				
13.1 Activity 1: Who is the fastest reader?				

Items	Level			Comments and suggestions
	+ 1	0	-1	
(Language Exposure by Providing Input and Communicative Activities)				
13.2 Activity 2: Completing the worksheet (Noticing Stage and Rule Generalizing Stage)				
13.3 Activity 3: Write a note about things to do for the party (Language Creativity Stage)				
Time				
14. The time is suitable for the lesson.				

Other suggestions:

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(.....)

Date.....

**Lesson Plan 3: Review Lesson Using Interleaved Practice**

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Learning outcome</b>				
1. Learning outcomes are clearly stated what the students will know and will be able to do.  <i>“Students will be able to use past simple and present perfect tenses to write about events in the past, events that have just happened, and events that still happen correctly and appropriately.”</i>				
2. Learning outcomes are appropriate to the students’ level.  <i>“FL1.2 Gr.8/4 speak and write appropriately to ask for and give information, describe and express opinions about what has been heard or read.”</i>				
3. Learning outcomes can be measured through learning activities.				
3.1 Activity 1: Completing the Story				
3.2 Activity 2: Identifying the Timeline				
3.3 Activity 3: Immediate Post-Test				
<b>Content and material</b>				
4. Content, activities, and language level are appropriate for the students.				
5. Content and activities help support learning outcomes.				
6. The design of content and materials are attractive to the students.				
7. Content, materials, and activities can help learners to achieve the learning outcome.				
8. Content, materials, and activities are relevant to the lessons.				

Items	Level			Comments and suggestions
	+1	0	-1	
<b>Learning condition</b>				
9. Interleaved Practice  <i>“The activities are designed according to the interleaved practice model that would cause the interleaving effect to enhance language accuracy and long-term retention of language accuracy.”</i>				
10. Noticing Stage  <i>“The activities provide students the opportunity to notice the focused grammatical form designed for the lesson.”</i>				
11. Rule Generalizing Stage  <i>“This session is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.”</i>				
<b>Assessment and Evaluation</b>				
12. The assessment aligns with the learning outcomes.				
13.1 Activity 1: Completing the Story				
13.2 Activity 2: Identifying the Timeline				
13.3 Activity 3: Immediate Post-Test				
<b>Time</b>				
13. The time is suitable for the lesson.				

Items	Level			Comments and suggestions
	+ 1	0	-1	
Immediate Post-test				
14. The test instruction is clearly stated and is easy to understand.				
15. Content difficulty and language level are appropriate for the students.				
16. The test items conform with the learning outcome.				
17. Interleaved Practice  <i>The test is designed according to the interleaved practice model that would cause the inter-leaving effect to enhance language accuracy and long-term retention of language accuracy.</i>				
18. Noticing Stage and Rule Generalizing Stage  <i>"The test is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning."</i>				
19. The time is suitable for the test.				

Other suggestions.....

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(.....)

Date.....



## Appendix C Research Instrument Evaluation Form

### Index of Item Objective Congruence (IOC) of Data Collection Instruments

#### Guideline for evaluation

Please put a tick (✓) in the rating box (+1, 0, -1) in order to identify the appropriateness of the lesson plan according to your opinion. Please provide comments for further adjustment and improvement.

+1	means	Appropriate
0	means	Uncertain
-1	means	Inappropriate

#### Part 1: Grammatical Judgement Test

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Test Instruction</b>				
1. The test instruction is clearly stated and is easy to understand.				
<b>Content and material</b>				
2. Content difficulty and language level are appropriate for the students.				
3. The test items conform with the learning outcome.  <i>“Students will be able to use past simple and present perfect tense to speak and write correctly and appropriately for communication in real situations/ simulated situations in the classroom, school, and community.”</i>				
<b>Test condition</b>				
4. Interleaved Practice  <i>“The test is designed according to the interleaved practice model that would cause the inter-leaving effect to enhance language accuracy and long-term retention of language accuracy.”</i>				

Items	Level			Comments and suggestions
	+ 1	0	-1	
5. Noticing Stage and Rule Generalizing Stage  <i>“The test is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.”</i>				
<b>Time</b>				
6. The time is suitable for the test.				

Other suggestions:

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### Part 2: Discrimination Test

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Test Instruction</b>				
1. The test instruction is clearly stated and is easy to understand.				
<b>Content and material</b>				
2. Content difficulty and language level are appropriate for the students.				
3. The test items conform with the learning outcome.  <i>“Students will be able to use past simple and present perfect tense to speak and write correctly and appropriately for communication in real situations/ simulated situations in the classroom, school, and community.”</i>				

Items	Level			Comments and suggestions
	+ 1	0	-1	
<b>Test condition</b>				
4. Interleaved Practice  <i>“The test is designed according to the interleaved practice model that would cause the inter-leaving effect to enhance language accuracy and long-term retention of language accuracy.”</i>				
5. Noticing Stage and Rule Generalizing Stage  <i>“The test is designed to help students link the meaning to its form; therefore, the language input will be registered as a language intake which is the basis of language learning.”</i>				
<b>Time</b>				
6. The time is suitable for the test.				

Other suggestions:

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### Part 3: Questions for the Semi-Structure Interview

Items	Level			Comments and suggestions
	+ 1	0	-1	
1. Each question for the semi-structure interview is clear and understandable.				
2. Each question conforms with the objectives of the research.  <i>“What is the students’ perception towards the interleaved FFI lessons?”</i>				
3. Q1: How do you feel about learning English grammar with this mixing-topic schedule? Give some supporting reasons.				

Items	Level			Comments and suggestions
	+ 1	0	-1	
<p>คำถามที่ 1: นักเรียนรู้สึกอย่างไรกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา? (พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนี้)</p>				
<p>4. Q2: What do you like about this mixing-topic schedule? Give some supporting reasons.</p> <p>คำถามที่ 2: อะไรคือสิ่งที่คุณชอบกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา? (พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนี้)</p>				
<p>5. Q3: What do you dislike about this mixing-topic schedule? Give some supporting reasons.</p> <p>คำถามที่ 3: อะไรคือสิ่งที่คุณไม่ชอบกับการเรียนไวยากรณ์ภาษาอังกฤษแบบสลับหัวข้อไปมา? (พร้อมเหตุผลประกอบว่าทำไมถึงรู้สึกแบบนี้)</p>				
<p>6. Q4: Which of these activities did you find to be effective to help you improve your English grammar knowledge? (You can name more than one)</p> <p>คำถามที่ 4: กิจกรรมอันไหนบ้างที่คุณรู้สึกว่า เป็นกิจกรรมที่ช่วยพัฒนาความรู้ทางไวยากรณ์ภาษาอังกฤษของคุณได้ อย่างมีประสิทธิภาพ? (นักเรียนสามารถตอบได้มากกว่า 1 กิจกรรม)</p>				
<p>7. Q5: Which of these activities did you find to be ineffective to help you improve your English grammar? (You can name more than one)</p> <p>คำถามที่ 5: กิจกรรมอันไหนบ้างที่คุณรู้สึกว่า เป็นกิจกรรมที่ไม่ได้ช่วยพัฒนาความรู้ทางไวยากรณ์ภาษาอังกฤษของคุณได้อย่างมีประสิทธิภาพเลย? (นักเรียนสามารถตอบได้มากกว่า 1 กิจกรรม)</p>				

Items	Level			Comments and suggestions
	+ 1	0	-1	
<p>8. Q6: What do you feel about the classroom atmosphere overall during these 13 weeks? For example, is it supportive or unsupportive for your learning, is it interesting or not interesting, or is there any other suggestion that you like or do not like about the overall classroom atmosphere?</p> <p>คำถามที่ 6: นักเรียนรู้สึกอย่างไรกับบรรยากาศของการเรียนโดยรวมตลอด 13 สัปดาห์ที่ผ่านมา? เช่นบรรยากาศการเรียนสนับสนุนให้เกิดการเรียนรู้หรือไม่, บรรยากาศการเรียนเป็นไปแบบน่าสนใจหรือไม่, หรือมีอะไรอยากจะแนะนำที่เกี่ยวกับสิ่งที่นักเรียนชอบหรือไม่ชอบโดยภาพรวมของการเรียนที่ผ่านมาหรือไม่?</p>				

Other suggestions:

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(.....)

Date.....

## Appendix D Test Specification

### 1. Purpose of the test

To assess grammatical knowledge regarding the forms, meanings, and uses of past simple and present perfect tense.

### 2. Target Language Use Domain

This test is to measure language-instruction domain for the students who study English as a foreign language (EFL), reflecting grammatical knowledge that has been taught in language classroom.

### 3. Definition of constructs to be measured

- a. The ability to notice correct forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect.
- b. The ability to notice correct forms of past simple and present perfect tenses in affirmative, forms of passive voice aspect.
- c. The ability to notice the meanings and uses expressed by the linguistic forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect.
- d. The ability to notice the meanings and uses expressed by the linguistic forms of past simple and present perfect tenses in affirmative forms of passive voice aspect.

### 4. Characteristic of test takers

Thai English as a Foreign Language (EFL) students in eighth grade level aged 13-14 studying in schools located in Thailand and using the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) of Ministry of Education of Thailand.

### 5. Test structures and sequence

The test consists of two parts: 1. Grammaticality judgement test and 2. Discrimination test.

The grammaticality judgement test is designed to assess the test-takers' grammatical knowledge regarding ability to notice the forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect and in affirmative forms of passive voice aspect.

The discrimination test is designed to assess the test-takers' grammatical knowledge regarding ability to notice the meanings and uses expressed by the linguistic forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect and in affirmative forms of passive voice aspect.

For the grammaticality judgement test, the test-takers have to decide whether the underlined verb in the sentences provided is 'correct' or 'incorrect' by putting a tick (✓) to identify their answer.

For the discrimination test, the test-takers have to read the statement about the picture or sentence provided and decide whether the statement is 'true' or 'false' by circling 'Yes' or 'No.'

## 6. Test details

### 6.1 Test details for pre-test and one-week delayed post-test

To assess forms

Topic / Sub-topic	Number of items
Past Simple	15
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + V.2)	2
2. Negative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>did</b> + <b>not</b> + V.inf or S + <b>was/were</b> + <b>not</b> )	2
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> ( <b>Did</b> + S + V.inf...? or <b>Was/Were</b> + S...?)	2
4. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>used to</b> + V.inf)	2
5. Negative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>did</b> + <b>not</b> + <b>use to</b> + V.inf)	2
6. Interrogative sentences with regular or irregular verbs in <b>active voice</b> ( <b>Did</b> + S + <b>use to</b> + V.inf...?)	2
7 Affirmative sentences with regular or irregular verbs in <b>passive voice</b> (S + <b>was/were</b> + V.3)	3
Present Perfect	15
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>have / has</b> + V.3)	4
2. Negative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>have / has</b> + <b>not/never</b> + V.3)	4
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> ( <b>Have/HAs</b> + S + V.3...?)	4
4. Affirmative sentences with regular or irregular verbs in <b>passive voice</b> (S + <b>have / has</b> + <b>been</b> + V.3)	3

To assess meanings and uses

Topic / Sub-topic	Number of items
Past Simple	6
1. Used to talk about completed actions in the past	2

Topic / Sub-topic	Number of items
2. Used to talk about general facts that no longer happen	2
3. Used to talk about habits and repeated actions ( <b>routines</b> ) in the past	2
<b>Present Perfect</b>	<b>6</b>
1. Used to talk about situation that started in past and still happens until now	2
2. Used to talk about situation that have just finished	2
3. Used to talk about experiences	2

#### 6.2 Test details for immediate post-test1

To assess forms

Topic / Sub-topic	Number of items
<b>Past Simple</b>	<b>10</b>
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> ( <b>S + V.2</b> )	3
2. Negative sentences with regular or irregular verbs in <b>active voice</b> ( <b>S + did + not + V.inf or S + was/were + not</b> )	3
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> ( <b>Did + S + V.inf...? or Was/Were + S...?</b> )	4
<b>Present Perfect</b>	<b>10</b>
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> ( <b>S + have / has + V.3</b> )	3
2. Negative sentences with regular or irregular verbs in <b>active voice</b> ( <b>S + have / has + not/never + V.3</b> )	3
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> ( <b>Have/HAs + S + V.3...?</b> )	4



To assess meanings and uses

Topic / Sub-topic	Number of items
Past Simple	4
1. Used to talk about completed actions in the past	4
Present Perfect	4
1. Used to talk about situation that started in past and still happens until now	4

### 6.3 Test details for immediate post-test2

To assess forms

Topic / Sub-topic	Number of items
Past Simple	10
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>used to</b> + V.inf)	3
2. Negative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>did</b> + <b>not</b> + <b>use to</b> + V.inf)	3
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> (Did + S + <b>use to</b> + V.inf...?)	4
Present Perfect	10
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>have / has</b> + V.3)	3
2. Negative sentences with regular or irregular verbs in <b>active voice</b> (S + <b>have / has</b> + <b>not/never</b> + V.3)	4
3. Interrogative sentences with regular or irregular verbs in <b>active voice</b> (Have/HAs + S + V.3...?)	3

To assess meanings and uses

Topic / Sub-topic	Number of items
Past Simple	4
1. Used to talk about habits and repeated actions ( <b>routines</b> ) in the past	4

Present Perfect	4
1. Used to talk about situation that started in past and still happens until now	1
2. Used to talk about experiences	3

## 6.4 Test details for immediate post-test3

To assess forms

Topic / Sub-topic	Number of items
Past Simple	10
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + V.2)	4
2. Affirmative sentences with regular or irregular verbs in <b>passive voice</b> (S + was/were + V.3)	6
Present Perfect	10
1. Affirmative sentences with regular or irregular verbs in <b>active voice</b> (S + have / has + V.3)	4
3. Affirmative sentences with regular or irregular verbs in <b>passive voice</b> (S + have / has + been + V.3)	6

To assess meanings and uses

Topic / Sub-topic	Number of items
Past Simple	4
1. Used to talk about completed actions in the past	2
2. Used to talk about general facts that no longer happen	2
Present Perfect	4
1. Used to talk about situation that started in past and still happens until now	2
2. Used to talk about situation that have just finished	2

**7. Test duration**

- 45 minutes for the whole test of pre-test and one-week delayed post-test
- 20 minutes for each immediate post-test

**8. Test scoring**

The test items are scored by using right/wrong scoring method. Each correct answer equals 1 point, and each incorrect answer equals 0 point.



## Appendix E Testing Map

The grammaticality judgement test is designed to assess the test-takers' grammatical knowledge regarding ability to notice the forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect and in affirmative forms of passive voice aspect.

The discrimination test is designed to assess the test-takers' grammatical knowledge regarding ability to notice the meanings and uses expressed by the linguistic forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect and in affirmative forms of passive voice aspect.

To assess forms by using grammaticality judgement test

Topic / Sub-topic	Items Details (Pre-Test & Delayed Post-test)	Item Details (Immediate Post-tests)
Past Simple		
1. Affirmative sentences with regular or irregular verbs in <b><u>active voice</u></b> (S + V.2)	Test item: 5 / 27	Imm 1: 9 / 18 / 19 Imm 2: (-) Imm 3: 1 / 6 / 12 / 15
2. Negative sentences with regular or irregular verbs in <b><u>active voice</u></b> (S + <b>did</b> + not + V.inf or S + was/were + not)	Test item: 2 / 22	Imm 1: 5 / 6 / 15 Imm 2: (-) Imm 3: (-)
3. Interrogative sentences with regular or irregular verbs in <b><u>active voice</u></b> (Did + S + V.inf...? or Was/Were + S...?)	Test item: 4 / 20	Imm 1: 3 / 12 / 13 / 17 Imm 2: (-) Imm 3: (-)
4. Affirmative sentences with regular or irregular verbs in <b><u>active voice</u></b> (S + used to + V.inf)	Test item: 10 / 13	Imm 1: (-) Imm 2: 2 / 4 / 17 Imm 3: (-)
5. Negative sentences with regular or irregular verbs in <b><u>active voice</u></b> (S + <b>did</b> + not + use to + V.inf)	Test item: 15 / 25	Imm 1: (-) Imm 2: 9 / 15 / 18 Imm 3: (-)

Topic / Sub-topic	Items Details (Pre-Test & Delayed Post-test)	Item Details (Immediate Post-tests)
6. Interrogative sentences with regular or irregular verbs in <u>active voice</u> ( <b>Did</b> + <b>S</b> + <b>use to</b> + <b>V.inf...</b> ?)	Test item: 6 / 29	Imm 1: (-) Imm 2: 1 / 7 / 11 / 19 Imm 3: (-)
7 Affirmative sentences with regular or irregular verbs in <u>passive voice</u> ( <b>S</b> + <b>was/were</b> + <b>V.3</b> )	Test item: 3 / 9 / 12	Imm 1: (-) Imm 2: (-) Imm 3: 2 / 3 / 8 / 10 / 13 / 18
Present Perfect		
1. Affirmative sentences with regular or irregular verbs in <u>active voice</u> ( <b>S</b> + <b>have</b> / <b>has</b> + <b>V.3</b> )	Test item: 8 / 16 / 18 / 30	Imm 1: 2 / 16 Imm 2: 6 / 10 / 13 / Imm 3: 5 / 11 / 16 / 19
2. Negative sentences with regular or irregular verbs in <u>active voice</u> ( <b>S</b> + <b>have</b> / <b>has</b> + <b>not/never</b> + <b>V.3</b> )	Test item: 11 / 21 / 26 / 28	Imm 1: 7 / 11 / 14 Imm 2: 12 / 14 / 16 / 20 Imm 3: (-)
3. Interrogative sentences with regular or irregular verbs in <u>active voice</u> ( <b>Have/HAs</b> + <b>S</b> + <b>V.3...</b> ?)	Test item: 1 / 17 / 19 / 24	Imm 1: 1 / 4 / 8 / 10 / 20 Imm 2: 3 / 5 / 8 / Imm 3: (-)
4. Affirmative sentences with regular or irregular verbs in <u>passive voice</u> ( <b>S</b> + <b>have</b> / <b>has</b> + <b>been</b> + <b>V.3</b> )	Test item: 7 / 14 / 23	Imm 1: (-) Imm 2: (-) Imm 3: 4 / 7 / 9 / 14 / 17 / 20

The discrimination test is designed to assess the test-takers' grammatical knowledge regarding ability to notice the meanings and uses expressed by the linguistic forms of past simple and present perfect tenses in affirmative, negative, and interrogative forms of active voice aspect and in affirmative forms of passive voice aspect.

To assess meanings and uses by using discrimination test

Topic / Sub-topic	Items Details (Pre-Test & Delayed Post-test)	Item Details (Immediate Post-tests)
Past Simple		
1. Used to talk about completed actions in the past	Test item: 3 / 7	Imm 1: 4 / 6 Imm 2: (-) Imm 3: 6 / 8
2. Used to talk about general facts that no longer happen	Test item: 5 / 10	Imm 1: 2 / 8 Imm 2: (-) Imm 3: 3 / 7
3. Used to talk about habits and repeated actions ( <b><u>routines</u></b> ) in the past	Test item: 6 / 11	Imm 1: (-) Imm 2: 2 / 4 / 5 / 7 Imm 3: (-)
Present Perfect		
1. Used to talk about situation that started in past and still happens until now	Test item: 8 / 9	Imm 1: 1 / 5 Imm 2: 3 Imm 3: 1 / 2
2. Used to talk about situation that have just finished	Test item: 1 / 4	Imm 1: 3 / 7 Imm 2: (-) Imm 3: 4 / 5
3. Used to talk about experiences	Test item: 2 / 12	Imm 1: (-) Imm 2: 1 / 6 / 8 Imm 3: (-)

## Appendix F Table of Comparison between Pre-Test / One-Week Delayed Post-Test and Immediate Post-Test

**Part 1: Grammaticality Judgement Test****Instruction: Decide whether the underlined verbs in the sentences below is 'correct' or 'incorrect'**

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
1.	<b><u>Have</u></b> you ever <b><u>having</u></b> an iris scan? Iris scan is the eye scan just like fingerprint scan.	<b><u>Have you finding</u></b> a new job yet?
2.	You <b><u>did not watched</u></b> TV when you were a kid?	I <b><u>did not bought</u></b> a new car.
3.	Last week several people <b><u>were injure</u></b> by the earthquake.	Numerous people <b><u>were killed</u></b> by the massive avalanche while they were climbing the mountain when the earthquake happened.
4.	<b><u>Did</u></b> thousands of people <b><u>lost</u></b> their lives in a 7.8-magnitude earthquake in Nepal's capital, Kathmandu, on last Saturday?	What time <b><u>did you get</u></b> up today?
5.	The earthquake also <b><u>caused</u></b> a massive avalanche on Mount Everest.	Thousands of people <b><u>losed</u></b> their lives in a 7.8-magnitude earthquake in Nepal's capital, Kathmandu, on last Saturday.
6.	What kind of toys <b><u>did</u></b> you <b><u>use to play</u></b> with?	What <b><u>did</u></b> you <b><u>used to watch</u></b> on TV when you were a kid?
7.	April Fools' Day <b><u>has been celebrate</u></b> for several centuries.	Last year you did not go to any parties, but this year you <b><u>have already been invited.</u></b>

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
8.	Historians <b>have linked</b> April Fools' Day to festivals such as Hilaria, an ancient Rome festival involving people dressing up in disguises.	I love traveling to new places and making new friends. So far, I <b>have visited</b> more than 50 countries.
9.	<b>Hilaria</b> (an ancient Rome festival) <b>was celebrated</b> at the end of March.	She <b>was hit</b> by a car yesterday.
10.	I <b>used to watched</b> "Doraemon" which was a cartoon about a robot cat going back in time to help Nobita.	I <b>used to watched</b> "Doraemon" which was a cartoon about a robot cat going back in time to help Nobita.
11.	I <b>have never had</b> the iris scan at Suvarnabhumi Airport.	I <b>have never try</b> Indian food.
12.	Many people thought that April Fool's Day began in 1563 when the New Year's Day <b>was been change</b> to celebrate on January 1 instead of April 1.	Many people thought that April Fool's Day began in 1563 when the New Year's Day <b>was been changed</b> to celebrate on January 1 instead of April 1.
13.	Do you know the puzzle called a Rubik's cube? It <b>used to be</b> popular when I was a kid. I played it every day.	Do you know the puzzle called a Rubik's cube? It <b>used to be</b> popular when I was a kid. I played it every day.
14.	Numerous people <b>have been killed</b> by the massive avalanche while they were climbing the mountain at that time.	Thana <b>have been told</b> many times to stop talking in class.




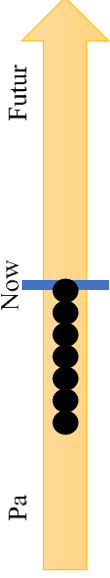
No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
15.	My friends and <b><u>I did not use to had</u></b> contest to figure out who could solve it the fastest.	My friends and I <b><u>did not use to have</u></b> contests to figure out who could solve mathematic problems the fastest.
16.	Wanida <b><u>has translate</u></b> many great and classic English stories and poems into Thai.	I <b><u>have just had</u></b> the iris scan at the police station.
17.	<b><u>Have you finish</u></b> the paper for his class?	<b><u>Have you finding</u></b> a new job yet?
18.	Now that you <b><u>have already chosen</u></b> the date and time, it is time for you to decide on the menu and activities for your party.	He <b><u>has just left</u></b> his house.
19.	<b><u>Have you ever seen</u></b> the ancient pyramids of Egypt? It is really amazing” Zola said to Nana.	<b><u>Have you ever seen</u></b> the ancient pyramids of Egypt? It is really amazing” Zola said to Nana.
20.	<b><u>Did Susan be</u></b> at your place last night?	<b><u>Was she</u></b> at your house last night?
21.	<b><u>I’ve not making</u></b> several trips to Egypt with my parents.” said Zola.	We <b><u>haven’t figured</u></b> out the food for the party.

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
22.	Yesterday in class we <b>did not read</b> a poem translated to Thai language by King Rama VI.	They <b>did not sending</b> that letter to the director yesterday.
23.	One of the first steps to start is to decide about whom you will invite to your party. Once all the invitation cards <b>have been sent</b> , then you just have to wait for their answer.	One of the first steps to start is to decide about whom you will invite to your party. Once all the invitation cards <b>have been send</b> , then you just have to wait for their answer.
24.	China is an amazing country. <b>Have you ever been</b> there?	What country <b>have you never visited</b> before?
25.	They <b>did not use to play</b> computer games for hours when they were at college.	Even though I worked for a travel magazine 5 years ago, I <b>did not use to travel</b> to many interesting places.
26.	I <b>have never stole</b> your money.	I <b>have never try</b> Indian food.
27.	I have done the SCUBA diving five times since I <b>moved</b> to Phuket.	James <b>found</b> your lost toys in the garden yesterday.
28.	This year your friends asked you to give a New Year party. You've already been to several parties, but you <b>haven't gave</b> one yet.	I <b>haven't had</b> any problems with my new computer so far.

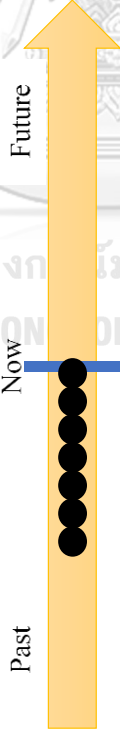
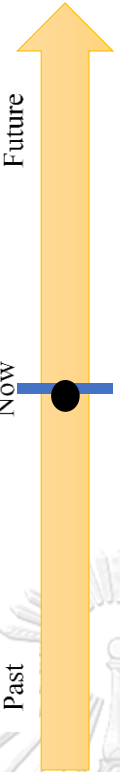
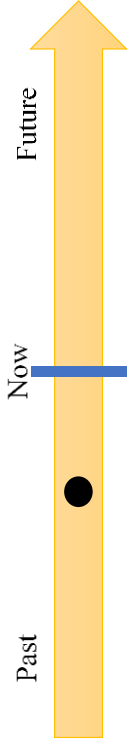
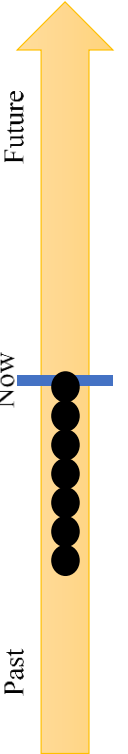
No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
29.	<u>Did you used to visited</u> more your aunt during school break.	<u>Did they use to go</u> skiing in the Swiss Alps?
30.	My paper is due tomorrow. I began it two days ago, but so far, I <u>have wrote</u> only three pages.	“Of course, I have. I’ve <u>making</u> several trips to Egypt with my parents.” said Zola.

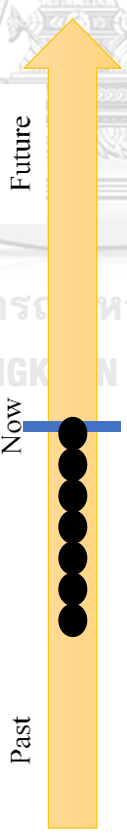
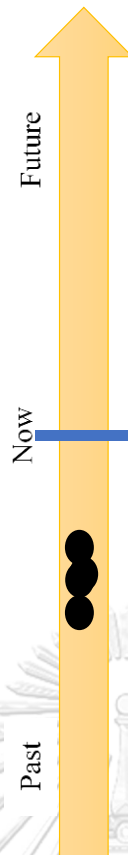
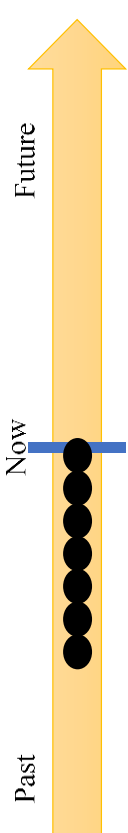
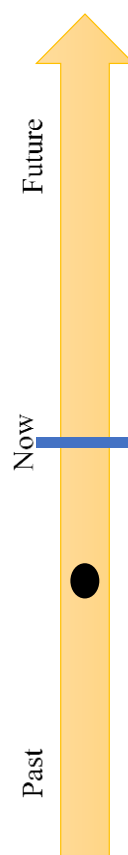
**Part 2: Discrimination Test**


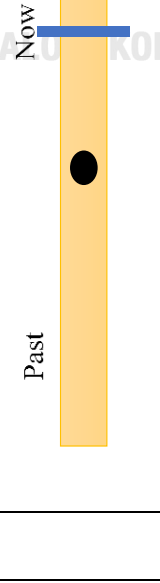
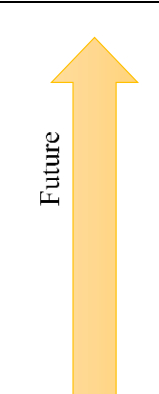
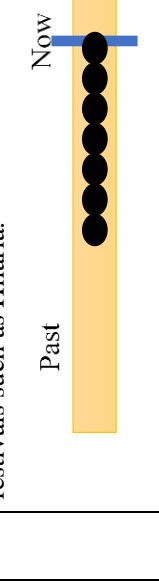
**Instruction: Decide whether the statement is ‘true’ or ‘false’**

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
1.	 <p>According to this picture, we can say,</p> <p>“Nina <u>has just received</u> the parcel from the postman.”</p> <p>a. True b. False</p>	<p>According to the sentence below,</p> <p>The U.S. FDA <u>has announced</u> the safety of the Atlantic salmon.</p> <p>It means the U.S. FDA studied about the safety of the Atlantic salmon in the past, but just announced it now.</p>  <p>a. True b. False</p>




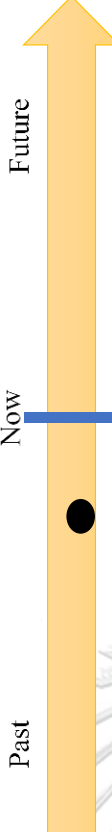
No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
<p>4. According to the sentence below,</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Thomas <b>has just finished</b> his report about tourist spots in Bangkok.</p> </div> <p>It means Thomas started working on his report in the past, but just finished it now.</p>  <p style="text-align: center;">a. True b. False</p>	<p>According to the sentence below,</p> <p>The school fair is right around the corner, and I <b>have just bought</b> the ticket.</p> <p>It means now I have the ticket.</p>  <p style="text-align: center;">a. True b. False</p>	
<p>5. According to the sentence below,</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>I <b>was</b> a teach at that school many years ago.</p> </div> <p>It means in the past I taught at that school, but not any more.</p>  <p style="text-align: center;">a. True b. False</p>	<p>According to the sentence below,</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Five years ago, Thomas <b>lived</b> in Bangkok, Thailand.</p> </div> <p>It means Thomas started to live in Bangkok, Thailand 5 years ago, and now he is still in Bangkok.</p>  <p style="text-align: center;">a. True b. False</p>	

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
6.	<p>According to the sentence below,</p> <p>The Superdog looked up and said, “Well, I <b>used to work</b> as a spy for the CIA for many years. Before being a spy, I worked at the airport checking passengers for drugs.”</p> <p>It means the Superdog is now not a spy.</p>  <p>a. True</p> <p>b. False</p>	<p>According to the sentence below,</p> <p>Now I don't believe in what Tom said. He <b>used to lie</b> to me when we were dating.</p> <p>It means <b>Tom told a lie a lot in the past (like the arrow shown below).</b></p>  <p>a. True</p> <p>b. False</p>
7.	<p>According to the sentence below,</p> <p>The dog looked up and said, “Well, I have worked as a spy for the CIA for many years. Before being a spy, I <b>worked</b> at the airport checking passengers for drugs.”</p> <p>It means the Superdog is now working at the airport.</p>  <p>a. True</p> <p>b. False</p>	<p>According to the sentence below,</p> <p>Peter already <b>applied</b> for the scholarship to study in the US a few days ago.</p> <p>It means it is a complete action happening in the past that Peter submitted the application form for the scholarship a few days ago.</p>  <p>a. True</p> <p>b. False</p>

No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
8.	<p>According to the sentence below,</p> <p>Although April Fools' Day <b>has been celebrated</b> for several centuries by different cultures, its exact origins remain a mystery.</p> <p>It means, at present, no one celebrates April Fools' Day anymore.</p>  <p>a. True b. False</p>	<p>According to the sentence below,</p> <p>So far Thomas <b>has lived</b> in Bangkok, Thailand for 5 years.</p> <p>It means Thomas used to live in Bangkok, Thailand 5 years ago, and now he lives somewhere else, not in Bangkok, Thailand.</p>  <p>a. True b. False</p>
9.	<p>According to the sentence below,</p> <p>Historians <b>have linked</b> April Fools' Day to festivals such as Hilaria, which was celebrated in ancient Rome at the end of March and involved people dressing up in disguises.</p> <p>It means, at present, historians still think that April Fools' Day is related to festivals such as Hilaria.</p>  <p>a. True b. False</p>	<p>According to the sentence below,</p> <p>Historians <b>have linked</b> April Fools' Day to festivals such as Hilaria, which was celebrated in ancient Rome at the end of March and involved people dressing up in disguises.</p> <p>It means, at present, historians still think that April Fools' Day is related to festivals such as Hilaria.</p>  <p>a. True b. False</p>





No.	Pre-Test / One-Week Delayed Post-Test	Immediate Post-Test
12.	<p>According to the sentence below,</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Sun and Sue <b>have been</b> to Japan twice.</p> </div> <p>It means, this sentence is talking about the experience that Sun and Sue went to Japan before.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">a. True b. False</p>	<p>According to the sentence below,</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Now I don't believe in what Tom said. He <b>has lied</b> to me once or twice.</p> </div> <p><b>It means Tom told a lie a lot in the past (like the arrow shown below).</b></p> <div style="text-align: center;">  </div> <p style="text-align: center;">a. True b. False</p>

## VITA

**NAME** Narongchai Rungwichitsin  
**DATE OF BIRTH** 6 September 1987  
**PLACE OF BIRTH** Bangkok  
**INSTITUTIONS ATTENDED** Khon Kaen University  
**AWARD RECEIVED** Global Undergraduate Exchange Scholarship



จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY