



The Effects of the Integrated Inductive Approach on GCR Task and DDL in
Enhancing Thai EFL Learners' Logical Connector Knowledge

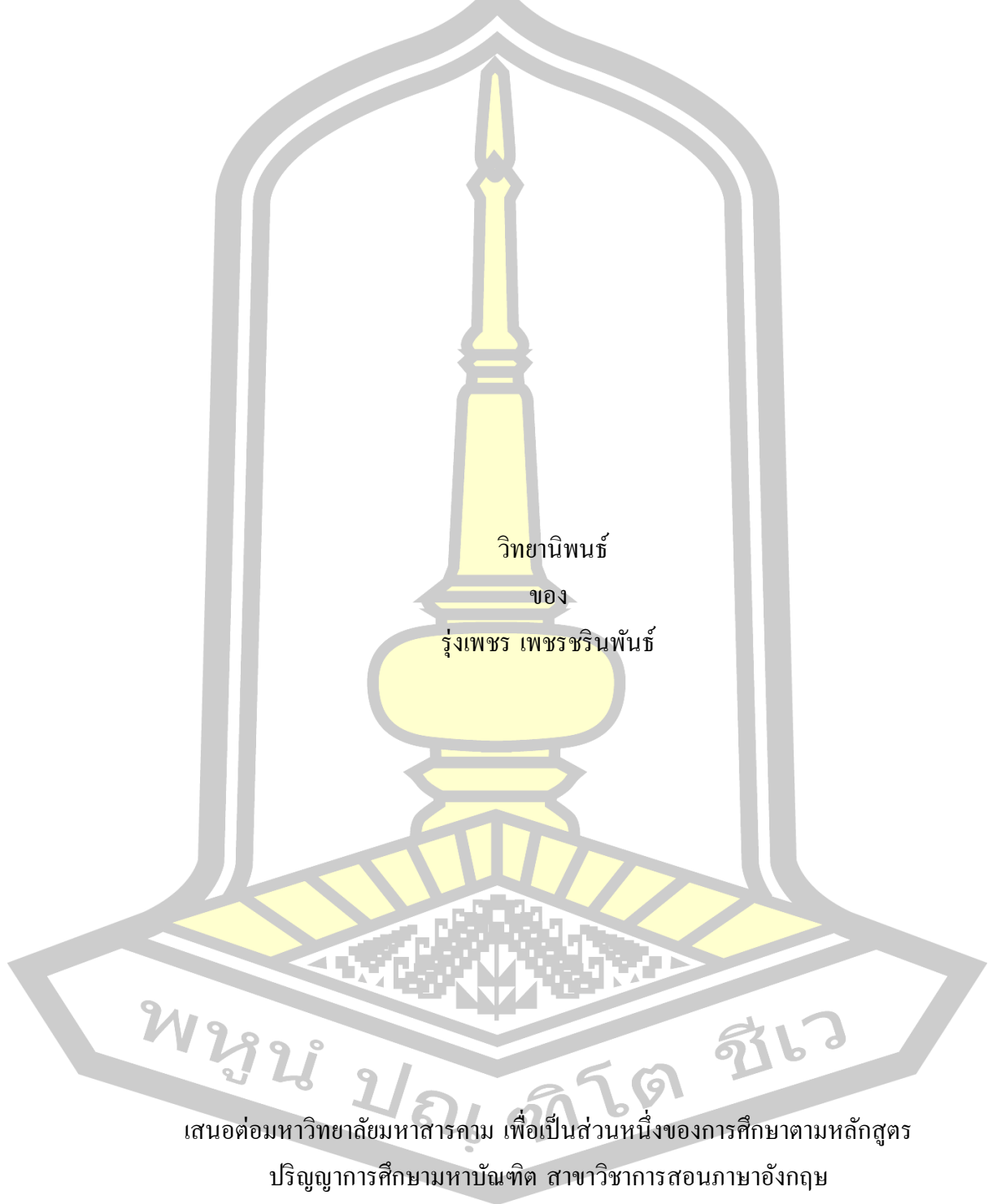
Rungpech Petcharinphan

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Master of Education in English Language Teaching

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ABSTRACT

This study was aimed to investigate the effects of the integrated inductive approach between grammar-consciousness raising task (GCR task) and data-driven learning (DDL) in enhancing EFL learners' logical connector knowledge by comparing with a deductive approach. The study adopted a quasi-experimental design. Sixty twelfth-grade students from two classes at a public high school were divided into two groups: 30 in an experimental group and 30 in a control group. According to their results in CEFR test, which the school offered as an English placement test to all new students , English proficiency of both groups was mixed and quite low especially in writing skill. The integrated inductive approach on the GCR task and DDL was implemented in five lesson plans with ten different logical connectors. The instruments consisted of a logical connector test implemented as pre-test and post-test and a questionnaire. The data were analyzed using an independent t-test, a paired t-test, and descriptive statistics. The results revealed that post-test scores of the group implemented with the integrated inductive approach were higher than the group implemented with the deductive approach. The results indicated that the students taught with the integrated inductive approach enhanced their logical connector knowledge significantly at the 0.05 level of statistics. They also had positive attitudes toward the integrated inductive approach. The significant characteristics of the integrated inductive approach did not only motivate second language communication but also enhance the feature of discovery learning. The study contributed pedagogical implications for logical connectors and grammar teaching in EFL setting.

Keyword : Task-Based Language Teaching, Grammar-Consciousness Raising Task, Data-Driven Learning, Logical Connector

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Rungpech Petcharinphan

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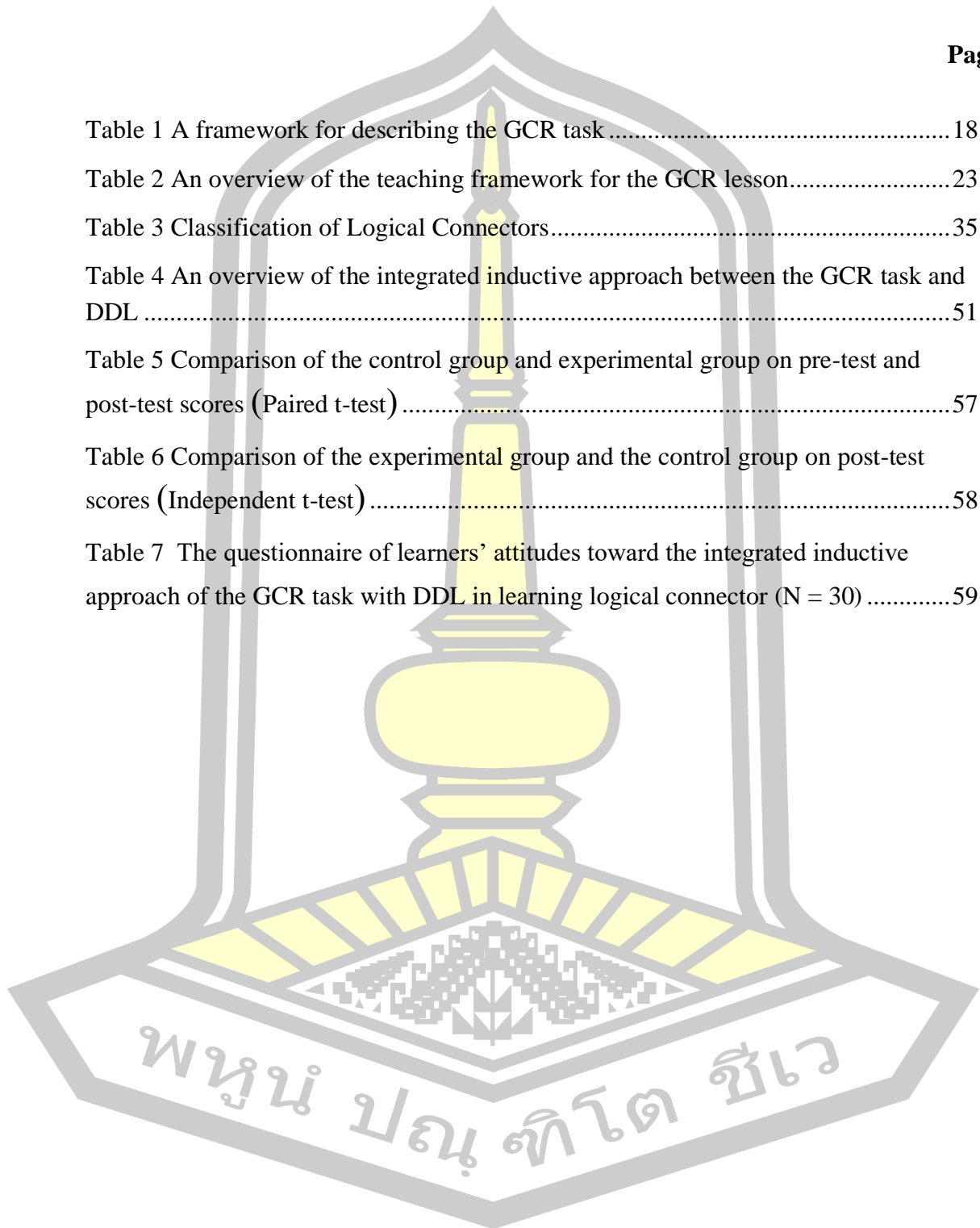
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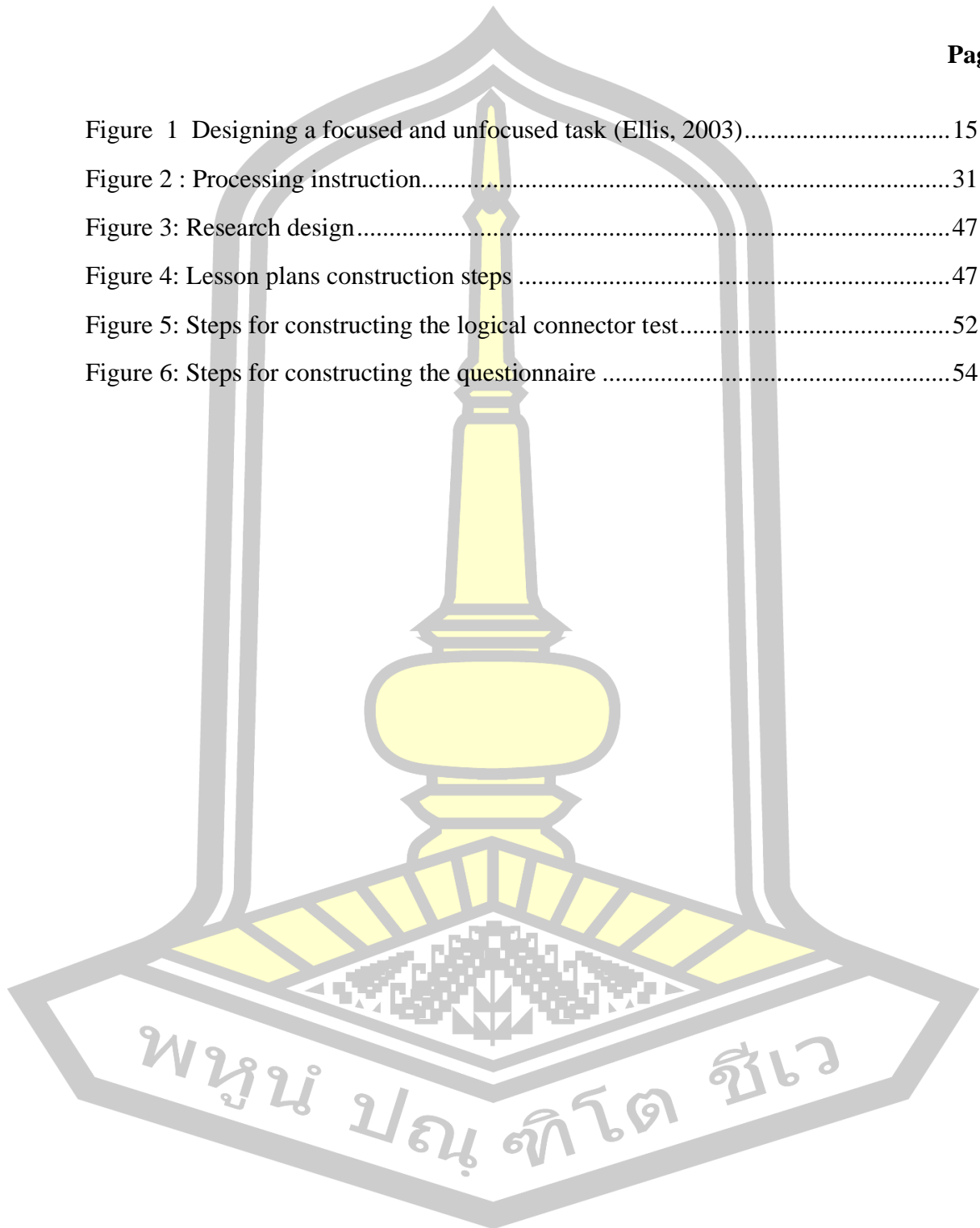
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CHAPTER I

INTRODUCTION

This chapter presents the introduction of the current study aiming at investigating the effects of the integrated inductive approach between GCR task and DDL to enhance logical connector knowledge of Thai EFL learners. There are seven main sections as follows: background of the study, the significance of the study, purposes of the study, research questions, scope of the study, the definition of terms, and outline of the thesis.

1.1 Background and rationale of the study

Grammar is considered as fundamental to language, so language does not exist without this essential element (Nassaji & Fotos, 2011). Grammar is an underlying knowledge of rule systems that can be formed in spoken or written production (Richards & Burns, 2012). Hence, language learners can acquire or learn the language effectively by knowing these rule systems (Sah, 2015).

There are several grammar rules which are vital for language learners to be proficient language users. Among these rules, logical connector knowledge is considered as one of the essential grammatical rules as it is used to connect clauses, sentences, or paragraphs to indicate a logical relationship. The logical connectors can be described as the glue that binds a piece of discourse together and makes the different components stick together. A text cannot be logically constructed without the effective use of logical connectors (Ucar & Yukselir, 2017). Thus, the knowledge of logical connector benefits EFL learners, especially high school learners as the Basic Education Core Curriculum B.E. 2551 indicates that they need to be able to basically write at a sentence level. Moreover, the participants in the study were twelfth graders who were going to take the national examination and language proficiency test and university entrance examination, so the knowledge of logical connectors was vital for them.

However, the previous studies on grammar teaching found that the use of logical connectors was one of the four common grammatical errors among EFL learners. The error in using logical connectors of EFL learners were caused by the lack of awareness in grammatical rules, the first language interference, and the lack of knowledge in sentence formation. (Jenwitheesuk, 2009; Prommas & Sinwongsuwat, 2013 cited in Dankittikul & Laohawiriyanon, 2018).

The setting where the researcher worked was an EFL high school. The logical connectors were taught with deductive grammar lessons which forms, meanings, and uses of the logical connectors were explained explicitly by teachers. This method was known as a teacher-centered approach which normally taught by providing rules to learners with some examples and asking them to practice through exercises. Many students could understand the lesson or perform well in classroom activities, but they tended to forget it afterward. Thus, the same logical connectors were repeatedly taught in every education level. Repeating the lessons on the same language points indicated the failure of deductive grammar teaching in this setting.

To deal with grammar problems in EFL high school students, the researcher had been observing the use of logical connectors among high school students in their writing classes. The researcher found that many students avoided taking risk by writing only simple sentences in their writing or using the same logical connectors in writing compound and complex sentences. While some of them tended to write compound or complex sentences with the logical connectors, they misused it. They agreed that they the use of logical connectors in English writing was a problem in their writing. There were many logical connectors indicating similar logical relationships. Most of them looked up Thai meaning of the logical connectors from bilingual dictionaries before using it. According to researcher's observation, this confirmed the causes of problems from the previous findings in the points of the lack of grammatical rule awareness, the lack of sentence formation, and the first language interference (Jenwitheesuk, 2009; Prommas & Sinwongsuwat, 2013 cited in Dankittikul & Laohawiriyanon, 2018). Thus, the researcher was interested in finding an effective grammar teaching method to deal with this problem.

Grammar teaching is still a controversial issue whether it should be taught explicitly through presenting the formal rules or implicitly through exposing with the

natural language in a meaningful context (Nassaji & Fotos, 2011). Historically, grammar teaching approaches have been changing from several theoretical and empirical developments in the field of language teaching. The changes in grammar teaching can be viewed in three general instructional approaches: grammar-based approach, communication-based approach, and the recent one, form-focused approach. The form-focused approach is the integration of strengths from two previous approaches. That is, it focuses on both grammar and communication (Nassaji & Fotos, 2011; Lightbown & Spada, 2013).

The fundamental assumption of grammar teaching believes that language consists of grammatical forms. Besides accuracy, to achieve in grammar learning, there should be a focus on repetition. With the change into form-focused instruction, task-based language teaching (TBLT) which previously has been viewed as a strong version of communicative language teaching and lacks focusing on grammar has become an interesting teaching approach for grammar teaching (Nassaji & Fotos, 2011). It can be designed to focus on both form and meaning as a metacognitive task with a focus on a language form that learners manipulate language or formulate generalizations about forms (Nunan & Carter, 2001; Nassaji & Fotos, 2011; Amirian & Abbasi, 2014).

The TBLT framework was first developed by Willis (1996) in the communicative grammar teaching period. Then, the task type was further developed by Ellis (2003) to be able to teach grammar. The following paragraphs discuss TBLT on the meaning of the task, its conceptual framework, and task types that was adopted to the current study.

Willis (1996) defined 'task' as an activity that learners use the target language to achieve an outcome. The task-based lesson has various designs which are differently proposed by many scholars (e.g. Willis (1996), Ellis (2003)). Willis (1996) proposed the conceptual framework of TBLT with clear stages for adapting in the classroom in three phases. (1) A pre-task phase is about the introduction to a topic of the task. Highlight useful words and phrases that learners may expose to. (2) A task-cycle phase is divided into three stages. (i) Task: learners do the task in pairs or small groups. Teacher monitors from a distance, encouraging all attempts at communication, not correcting. (ii) Planning: learners prepare to report the task to the

whole class on what they have done, decided, or discovered. (iii) Report: learners present their task to the class, or exchange written reports, and compare results. The teacher acts as a chairperson, and then comments on the content of the reports. (3) A language focus phase is divided into two stages. (i) Analysis: learners examine and then discuss specific features of language from the task. (ii) Practice: teacher conducts the practice of new words, phrases, and patterns occurring in the data, either during or after the analysis. There are four pedagogy goals of language focus: fluency, accuracy, analysis, and conformity (Willis, 1996). However, Willis' TBLT framework which was proposed in the communication-based period was designed to focus on communication rather than grammar.

Apart from focusing on communication, Ellis (2003) argued that TBLT can also be used to teach language forms. He further developed the framework for TBLT by dividing tasks into two types: unfocused tasks and focused tasks. While the unfocused tasks do not focus on linguistic features, the focused tasks lead to a new understanding for TBLT on the inclusion of grammar in task-based language instruction known as structure-based focused task or grammar-focused task (Ellis, 2003). The characterization of grammar-focused task instruction which supports grammar teaching is the focus of both language forms and communication. Ellis (2003) suggested that task-based on grammar structures as the content is effective in promoting both negotiations of meaning and awareness of the target structure (Ellis, 2003 cited in Nassaji & Fotos, 2011). The grammar-focused task has been proposed aiming at making grammar form obvious and meaningful for learners with noticing, consciousness-raising activities and meaning-focused interaction (Ellis, 2003).

Thus, according to Willis's TBLT framework, focusing on communication, grammar is discussed as errors found in the task on the language focus stage; however, the further development of Ellis (2003) has contributed TBLT to be able to introduce and discuss grammar issues as the main content of the task in all task stages.

The grammar-focused tasks have been identified into three tasks: (1) a structure-based production task, (2) a comprehension (interpretation) task, and (3) a consciousness-raising task (CR). The current study adopted the grammar consciousness-raising task (GCR) task as the main teaching framework to be

integrated with data-driven learning. The GCR task requires learners to notice, analyze, and generate the rules of grammar from implicit grammar structure in a meaningful context. In the later, learners practice the use of grammar structure through production activities. The GCR task helps learners understand grammatical features and form explicit knowledge as consciousness by self-discovery rules and generalizations (Hinkel, 2016). Smith (2003) explicitly defined the GCR task as student-centered teaching in nature (Smith, 2003 cited in Amirian & Abbasi, 2014).

One of the changes in grammar teaching that supports the characteristic of the GCR task is 'discovery learning'. Lewis (1986) suggested that the learning, which comes from self-discovery, is more firmly fixed in mind than that from teacher explicit teaching. Discovery learning of grammatical features or explicit knowledge develops consciousness of grammar through learning. Apart from discovery learning in the GCR task, there are many learning approaches and activities which support discovery learnings. One of those approaches is data-driven learning (DDL). DDL or corpus-based learning is one of the discovery learning approaches. DDL requires an active learning process such as exploring concordance (a listing of each occurrence of a word or pattern in a text or corpus), detecting patterns, forming hypotheses and generating rules on their own (Lewis, 1986 cited in Willis & Willis, 2011). DDL in the early time used a computer to generate concordances. Learners directly exposed to the language in the electronic corpus. This has been claimed as 'hard DDL'. The studies revealed that the hard DDL caused many problems for low-proficiency learners as their linguistic knowledge was inadequate to analyze a large amount of data in the corpus. This brings another version of DDL known as 'soft DDL' or 'paper-based DDL' which concordances are selected and simplified to be user-friendly data (Dankittikul & Laohawiriyanon, 2018). DDL provides an opportunity for discovery learning as second language learners can generate grammar rules inductively with the data in or from a corpus. Johns and King (1991) suggested three steps to plan a DDL based lesson which are suggested to be blended with other approaches. (1) identification: learners need to expose the language to address the problem they are going to identify. (2) classification: they categorize the pattern of language. (3) generalization: they establish a pattern and formulate the rules from the discovered data. Nevertheless, these terms have still not been made clear in terms of the

implementation of DDL.

The DDL application for logical connector teaching reveals suggestions for further development. DDL is found to be an advantage for long-term memory, but it seems not appropriate for low-proficiency learners (Sah, 2015). Therefore, Johns and King (1991) suggested there should be a study on the method(s) which can be integrated with DDL (Johns & King, 1991 cited in Sah, 2015). There are some studies of the integrated inductive approach between DDL and other teaching approaches. For example, Sah (2015) conducted a study comparing the two integrated teaching approaches: (1) DDL and Present-Practice-Produce (PPP) and (2) DDL and Illustration-Interaction-Induction (III). The result indicated that these teaching approaches were not significantly different. However, consciousness-raising activities in DDL with III made the integrated teaching approach more effective than DDL with PPP to some degree. The participants in the group of DDL with III approach could perform better in the delayed post-test. According to the results from this study, it can be claimed that the factor leading DDL successful is consciousness-raising activities in teaching grammar.

According to the recent development of grammar teaching, however, the findings of the study conducting pure DDL in EFL learners of (Dankittikul & Laohawiriyanon, 2018) were not effective and integrated teaching approaches in the study of Sah (2015) lacked communicative activities and. To bridge the gap of the previous studies, the researcher proposed to conduct the study on investigating the effects of a teaching approach blending the GCR task with DDL for logical connector instruction. The current study was the integrated inductive approach between the GCR task and DDL. Basically, the GCR task offers communicative-based activities for grammar learning. In addition, DDL with its authentic corpus materials is an interesting approach for grammar teaching, but the previous findings have revealed that it only works for advance learners. In the current study, hence, the concordance lines selected from the corpus were carefully selected and simplified to reduce the difficulties in learning, and the salient communicative characteristics of the GCR task's learning steps would reduce the difficulties in a DDL lesson. The GCR's task cycles (task, planning, and report) were integrated with DDL basic steps (identification, classification, and generalization) respectively. The TBLT framework

of Willis (1996) was adopted as the main framework of the study because it provided clear proposed task stages which could be blended with the basic steps of DDL. Along with Willis's task stages, the concept of the focused task of Ellis (2003) was adopted to design the grammar task. The approach from the study was expected to increase the awareness and consciousness of grammar as learners could notice and construct rules for grammatical features. Moreover, the results of the current study would contribute as an alternative method for the teaching of other grammar rules.

1.2 Significance of the study

The integrated inductive approach of the GCR task with DDL would help EFL learners to increase knowledge, awareness, and consciousness in using logical connectors. The integrated inductive approach could change a perspective of EFL grammar teaching from the traditional grammar teaching approach to a new perspective of communicative grammar teaching toward the authentic materials from the corpus and the stages in GCR task. Besides gaining grammatical knowledge, this approach also allowed learners to improve their communicative skill in meaningful situations. Furthermore, its pedagogical implications contributed to an effective grammar teaching method not only for the logical connectors but also for other grammar rules.

1.3 Purposes of the study

The study had the following purposes:

1. To investigate the effects of the integrated inductive approach of the GCR task with DDL in developing the knowledge of logical connectors of EFL learners.
2. To investigate learners' attitude toward learning logical connectors with the integrated inductive approach of the GCR task with DDL.

1.4 Research questions

The study was aimed at addressing the following research questions:

1. What are the effects of the integrated inductive approach of the GCR task with DDL on logical connector knowledge of EFL learners?
2. What are learners' attitudes toward the integrated inductive approach of the GCR task with DDL in learning logical connector?

1.5 Scope of the study

To achieve the purposes of the study, sixty mixed abilities twelfth-grade high school students were selected by purposive random sampling. The study adopted a quasi-experimental design with two variables. The independent variable was the integrated inductive approach between the GCR task and DDL whereas students' knowledge of logical connectors was dependent variable. The study covered the second semester of the academic year 2019 lasting two months from February to March 2020. The intervention was implemented with five lesson plans lasting ten hours of implementation.

1.6 Definition of terms

The operations and definitions of the key terms used are defined as follows.

1. Task-based language teaching (TBLT) refers to the stages of language teaching task. The framework was first proposed by Willis (1996) as an approach for communicative-based instruction consisting of three main stages: pre-task, task cycle, and language focus. Later, it was revised by Ellis (2003) to be able to implement in a grammar lesson. The TBLT framework of Willis (1996) was adopted as a main framework of the GCR task to make GCR task practicable for logical connector instruction.

2. A task is a piece of classroom work that involves learners in comprehending, manipulating, producing, or interacting in the target language while their focus is on both language forms and communicative purposes. The task in the current study was a discovery task that encourage learners to discover grammatical rules through communicative task phases of GCR and concordance lines of DDL.

3. A grammar consciousness-raising task – the GCR task is a piece of grammar task involving processes and interactions among learners, peers, and meaningful learning materials that encourage learners to comprehend, manipulate, and produce language to achieve a task's goal as a target grammar. The salient characteristics of the GCR task integrated into the basic steps of DDL would support logical connectors learning and increase knowledge, awareness, and consciousness in using logical connectors.

4. Data-driven learning (DDL) is an inductive teaching approach about

setting up the situation that students can discover the language features themselves by studying concordance lines from corpus data in three stages: identification, classification, and generalization. These stages were blended with the task stages of the GCR task to make DDL communicative. Moreover, the characteristics in the GCR task would reduce difficulties of DDL among mixed and low abilities EFL learners.

5. The integrated inductive approach refers to the implementation of the stages of grammar-consciousness raising task (GCR task) into the basic steps of data driven learning (DDL). The approach requires learners to notice, analyze, and generate the rules of grammar from concordance lines in a communicative context.

6. Logical connector knowledge refers to the ability to use linking words, linking phrases, or sentence connectors to show the relationships of discourse units or a stronger persuasive claim. The knowledge of logical connectors is vital for high school and university learners.

1.7 Outlines of the thesis

The thesis consists of five chapters:

Chapter 1 presents the background of the study, the significance of the study, purposes of the study, research questions, scope of the study, the definition of terms, and outline of the thesis.

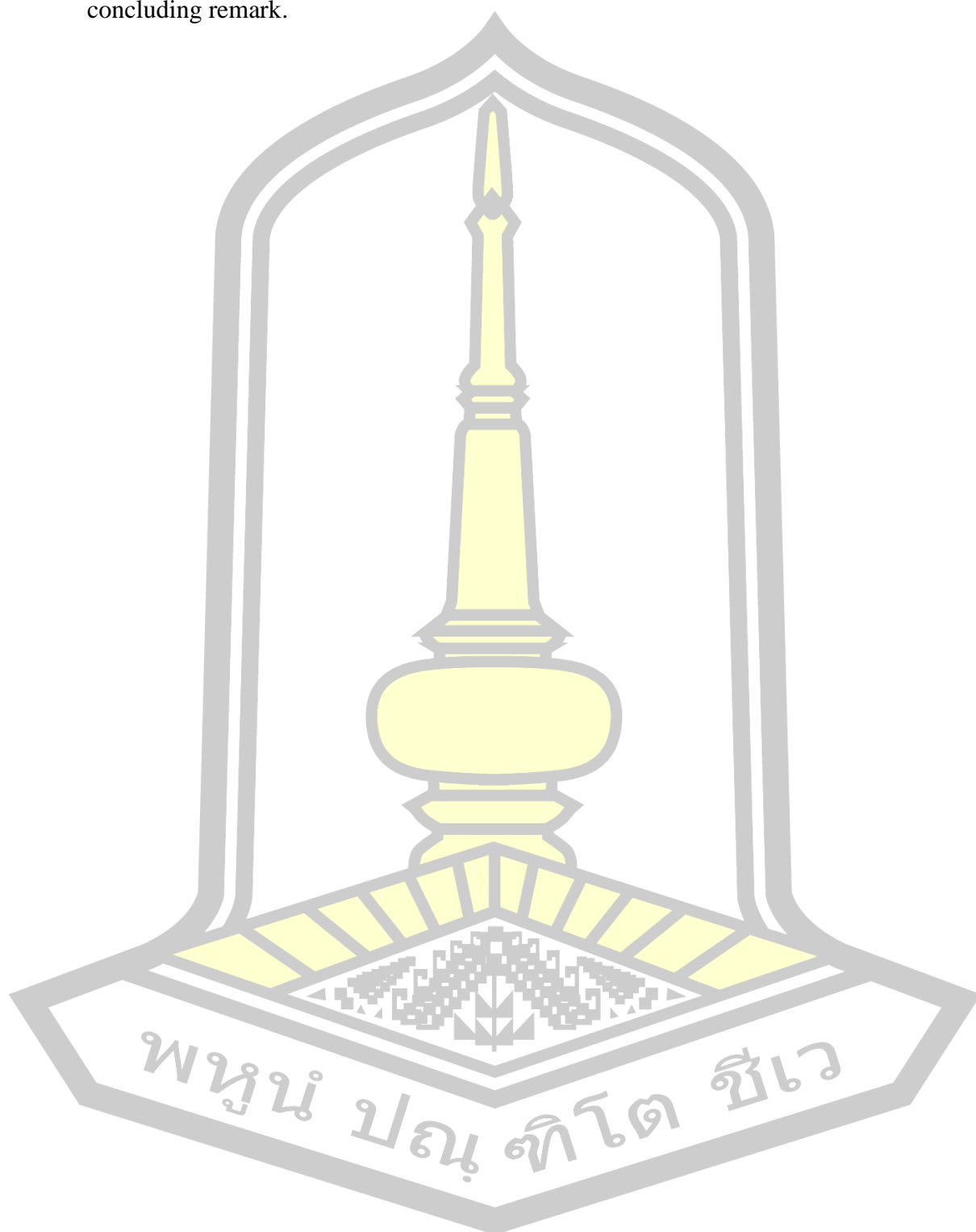
Chapter 2 presents the literature review in the area of the current study. There are five main sections as follows: the approaches in teaching grammar, grammar-consciousness raising task, data-driven learning, related studies, and summary of the literature review.

Chapter 3 presents the research methodology consisting of the participants of the study, research design, research instrument, data collection, and data analysis.

Chapter 4 presents the results of the study following the research questions. The results of the study are divided into two sections as follows: 1) the effects of the integrated inductive approach of the GCR task with DDL on logical connector knowledge of EFL learners and 2) learners' attitudes toward the integrated inductive approach of the GCR task with DDL in learning logical connector.

Chapter 5 presents the summary of the study, discussion, limitations,

implications, some recommendations which may be useful for further study, and concluding remark.



CHAPTER II

LITERATURE REVIEW

In this chapter, the researcher presents the literature review in the area of the study. There are five main sections as follows: the approaches in grammar teaching, grammar-consciousness raising task, data-driven learning, related studies, and summary of the literature review.

2.1 Approaches in grammar teaching

Grammar is a key component of language in language learning. Benitez-Correa et al. (2019) stated that the main goal of grammar teaching was to enable learners to achieve linguistic competence to use grammar as a tool or resource for understanding and producing efficient, effective, and proper oral and written discourse. However, in EFL contexts, grammar teaching has been considered a controversial area of language teaching. It has been discussed whether it should be taught explicitly or implicitly. One of the issues concerning grammar teaching in this context is about the effective grammar teaching methods for the EFL contexts (Benitez-Correa et al., 2019). Thornbury (1999) proposed two main grammar teaching approaches: a deductive approach and an inductive approach. Even though deductive and inductive approaches have the common goal of grammar teaching, they separate from each other in terms of way of teaching (Thornbury, 1999). The next section will be presented the details of the deductive approach and the inductive approach.

2.1.1 Deductive approach

A deductive approach is an approach to grammar teaching based on rules (Benitez-Correa et al., 2019). The principles of this approach are generally used in the classes where the main objective is to teach grammar structures. According to Thornbury's three basic principles, a deductive lesson starts with presentation of the rules by the teacher. Secondly, teacher gives examples by highlighting the grammar structures. Then, students make practice with the rules and produce their own examples at the end of the lesson. Getting straight to the points, many rules -

especially rules of form - can be simply and quickly explained than elicited from examples. This allows more time for practice and application. Moreover, the lesson underlying the deductive approach is challenging. It respects expectation, intelligence and maturity of many students who have adequate background knowledge to understand the concepts of grammar from explanation and have an analytical learning style (Thornbury, 1999).

However, the drawback of this approach is that the practicing activities involve only reading and writing, and little attention is given to speaking or pronunciation. Moreover, there is a lack of meaningful learning context as the learning material or practice texts are solely designed for grammar presentation (Male, 2016).

2.1.2 Inductive approach

Nunan and Carter (2001) identified an inductive approach as a process which learner discovers the grammar rules for themselves by examining the examples. In the inductive approach, it is also possible to use a context for grammar rules. Learners explore the grammar rules in a text or an audio rather than isolated sentences (Nunan & Carter, 2001). Thornbury (1999) noted that, in the inductive approach, learners are provided with samples which include the target grammar that they need to learn. Then learners work on the examples and try to discover the rules themselves. Then, learners obtain the grammar rules and practice the language by creating their own examples (Thornbury, 1999).

The inductive approach is regarded as a new way for grammar teaching as this approach has been used as the underlying approach for the recent grammar teaching method such as the GCR task. It is believed that when learners discover rules for themselves, it is more meaningful, memorable, and serviceable. They also engage more in classroom activities as the inductive lesson offers opportunity for active learning. Moreover, this approach prepares students for greater self-reliance and it therefore conducive to learner autonomy (Male, 2016).

Meanwhile, the development in this approach promoted the value of what come to be known as discovery learning. The principle underlying discovery learning involves cycles of trial and error, with guidance and feedback provided by the teacher.

According to the concept of the discovery learning, there are many approaches for teaching grammar under this concept. One way of doing the discovery learning is by means of concordance form corpus. A concordance is a collection of the instances of a word or phrase, organized in a way that it can be displayed in linguistic environment. However, the potential of corpora as sources for discovery learning is still being debated whether it is possible to make the lesson more communicative (Thornbury, 1999).

The next section presents two discovery-learning approaches –grammar consciousness raising (GCR) task and data-driven learning (DDL) – that the current study adopted to be integrated as a communicative discovery-learning approach for teaching grammar.

The current study adopted two grammar teaching approaches for control group and experimental group. The control group was implemented with the lesson plans based on the deductive grammar teaching approach in logical connector learning while the experimental group was implemented with the integrated inductive approach of the GCR task and DDL which was considered an inductive grammar teaching approach. In the next section, there are the discussions on the related concepts and previous studies.

2.2. Grammar consciousness-raising task (GCR)

In this section, the two vital factors contributing to the development of the GCR task - the revision of task-based language teaching and the principle of a focused task – are reviewed. The definitions of the GCR task and its features from various scholars (e.g. Willis (1996), Prabhu (1987)). Then, the framework of GCR task and its limitations in teaching grammar.

2.2.1 Task-based approach revisited

Although the earlier approach to task-based instruction advocated exclusive attention to meaning without ruling out the possibility of a focus on linguistic forms. Indeed, the proposal of a Form Focus (FonF), task-based language teaching is revised to be able to focus on both linguistic forms and communication. Skehan (1996) suggested there must be a balance on both language forms and communication when designing a

task-based syllabus because learners are not likely to acquire the language which they expose. Thus, careful exposure must be facilitated by the teacher (Skehan, 1996 cited in Nassaji & Fotos, 2011).

Willis (1996) proposed a task-based model and components for the task-based implementation underlying the FonF principle. The model consists of three phases: pre-task phase, task phase, and language focus. The pre-task phase aims at exposing learners to the input and prepare them to carry out the task through activities such as brainstorming, using pictures, highlighting new vocabulary, etc. The task phase aims at allowing learners to use language for spontaneous communication. The language-focused phase helps learners to develop an awareness of language which can be achieved through various language-based activities such as repetition, sentence completion, matching exercises, etc. (Willis, 1996 cited in Ellis, 2003).

Moreover, along with three phases, there are four components which can be implemented into those cycles: fluency, accuracy, analysis, and conformity. Fluency and accuracy refer to the ability to promote the effective use of language in a communicative context. Analysis concerns activities that inform the patterns and regularities of language to learners allowing them to notice and analyze the language forms. Conformity refers to activities to promote consciousness-raising related to controlled repetitions and the provision of form-focused summaries that learners learn at the end of each lesson. The activities for conformity can be discussed to summarize the use of forms, practicing, or extending the use of forms in various contexts (Nassaji & Fotos, 2011).

Recently grammar-focused task has been proposed to make grammar focus obvious to learners through consciousness-raising activities. Although learners' attention is drawn to the target structure, the task is communicative since learners are engaged in meaning-focused interaction. There are three types of grammar-focused tasks: structure-based production task, comprehension task, and consciousness-raising task. Identified by Ellis (2003), grammar consciousness-raising task was adopted in the current study.

The next section is discussed the characteristics of the focused task as the underlying principle for the GCR task.

2.2.2 Focused task

Task-based instruction has been traditionally based on the idea that learners can learn a language successfully when they engage in activities that provide opportunities for naturalistic and real-life language use rather than activities that focus on language forms. However, the approach to task-based instruction has been found inadequate in promoting the accuracy of L2 learning. Moreover, a purely meaning-focused approach to task-based instruction is often problematic in the EFL context because the real situation for the target language rarely exists and learners are studying the target language mainly to pass written examinations.

Therefore, Ellis (2003) made a distinction between a focused task and an unfocused communicative task. The unfocused task mainly deals with meaning and is not intended to elicit target structures. On the other hand, the focused task is designed for a linguistic focus. It aims at making grammar forms salient to learners by using the forms that learners' attention is drawn from a meaningful context. Teachers may provide learners with the opportunity to practice a specific feature under real operating conditions. Figure 1 identifies the key elements in the construction of the focused and unfocused task which can be included in the syllabus (Ellis, 2003; Nassaji & Fotos, 2011).

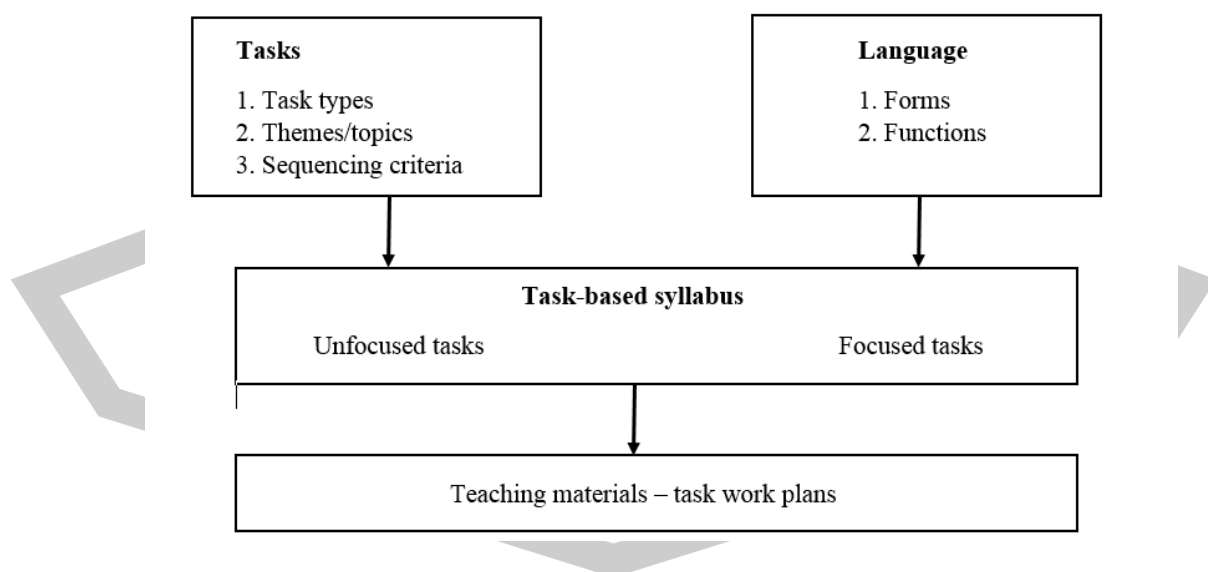


Figure 1 Designing a focused and unfocused task (Ellis, 2003)

There are two main ways to achieve the focused task, the first way is to

design the task which learners can perform by focusing on a linguistic feature. For example, learners are required to describe pictures so that their partners can find which picture is from the same set. To achieve this task, learners need to use the preposition of place. Loschky and Bley-Worman (1993) referred to this kind of focused task as a 'grammatical task'. The second way of constructing a focused task is making language itself as the main content of the task. For example, learners use provided data to complete a table by classifying the use of time phrases: in, on, and at. Then, they try to generalize the rule to describe how these prepositions are used (Loschky & Bley-Worman, 1993 cited in Ellis, 2003) Ellis (2003) defined this kind of grammar task as a grammar consciousness-raising task (GCR) task. It is a task rather than a grammatical exercise as it allows learners to talk in the target language (L2) while they interact with the provided data and peers. However, it is possible to switch into mother tongue (L1) in their discussion when they feel uncomfortable with L2 (Ellis, 2003). The next section is a discussion about the GCR task on its characteristics, steps to implement to the classroom, and its limitations from the previous studies.

2.2.3 Definition of the grammar consciousness raising task

The definitions of the grammar consciousness-raising task have been proposed by many scholars (e.g. Prabhu (1987), Nunan (1989), etc.). Prabhu (1987) proposed that the GCR task is an activity that requires learners to achieve grammar outcome from the given information through some cognitive processes which allow teachers to control and regulate these processes. Nunan (1989) defined that the GCR task is a work of grammar awareness concerning learners in comprehending, manipulating, producing, or interacting in the target language with a self-discovery learning. Willis (1996) defined that the GCR tasks are activities in which learners are required to manipulate and generate the target language or structure to achieve the task goal. Lee (2000) proposed the definition of the GCR task that the GCR task is (1) a classroom activity or exercise that has (a) an objective which is achieved by the interaction of participants (b) a process for structuring and sequencing interaction, and (c) a focus on meaning exchange; (2) a language learning that requires learners to comprehend and manipulate to achieve the target linguistic features. Nassaji and

Fotos (2011) the GCR task is a task which leads to noticing. Once notice occurs, task performance can be followed by other communicative activities about negotiating for meaning to further enhance noticing. When the language point is noticed frequently, learners unconsciously compare the new input with their existing L2 background knowledge. Hinkel (2016) defined that the GCR task requires learners to communicate directly about grammar structures and generating a rule for their use. This task may present the structure implicitly embedded in communicative contexts.

The definitions provided by the scholars above contribute to the researcher's understanding of the GCR task and its definition which were adopted in this study. In that, the GCR task is a piece of grammar work involving processes and interactions among learners, peers, and meaningful learning materials that encourage learners to comprehend, manipulate, and produce language to achieve a task's goal as a target grammar.

In the next section, the features of a task and the task's definition adopted in the current study is discussed.

2.2.4 Features of the grammar consciousness raising task

Wright (1987) suggested that the GCR task comprises two principal elements: 'input data' and 'instructional questions' that lead learners to operate input. Accordingly, as the role of teachers, besides being a facilitator who encourages learners with guided questions, it is essential to assure that the input is effective and adequate for learners to do the GCR task. Nunan (1989) distinguished three components of the GCR task: input, activities, and goal. He suggested that learners' background knowledge is not enough for achieving the goal. To promote task' activities, learners need essential input which can be either direct instruction or learning materials. Breen (2012) described the GCR task as a work plan and a process. To achieve the task outcome, a task's plan needs to be set as a route to achieve the task. Setting the task's plan depends on learners' interpretation. They can use different ways to achieve the goal. The task's processes happening are the actions in which learners follow their plans. However, the task's plan can be changed by learners when they find the task's plan does not work (Wright, 1987; Breen, 2012; Nunan, 1989 cited in Ellis, 2003).

According to the features of the GCR task reviewed above, we can summarize the features of the GCR task which can be described as a framework for describing task in the current study as in Table 1.

Table 1 A framework for describing the GCR task

Design feature	Description
1. Goal	The general purposes of the task <ul style="list-style-type: none"> - Discover the meaning and use of target logical connectors from concordance lines. - Present the meaning and use of target logical connectors to the class in L2.
2. Input	The verbal or non-verbal information supplied by the task <ul style="list-style-type: none"> - Concordance lines - Guideline expression for presentation
3. Conditions	How the information is presented and operated <ul style="list-style-type: none"> - Analyze the concordance lines to identify and summarize the meaning and use of target logical connectors.
4. Procedures	The methodological procedures in performing the task <ul style="list-style-type: none"> - Work and discuss in groups.
5. Predicted outcomes:	
5.1 Product	The product as a result of completing the task. The predicted product can be opened – allowing several possibilities or closed – accepting only one correct answer. <ul style="list-style-type: none"> - The presentation of discovered rules for logical connectors can be varied as the outcome of an individual group. - L2 is acquired in a task regarding the agreement set in the task introduction. - Language switching is allowed.
5.2 Process	The linguistic and cognitive processes <ul style="list-style-type: none"> - Learners gain consciousness in the use of logical connectors.

Ellis (2003) discussed the main characteristics of the GCR task as follows:

1. There is an attempt to isolate a specific linguistic feature for focused attention.
2. Learners are provided with data illustrating the targeted feature.
3. Learners are expected to utilize intellectual effort to understand the target feature.
4. Learners may be required to formulate the rule describing the grammatical structure.

The GCR task consists of (a) data containing examples of target linguistic features and (b) instructions requiring learners to operate on the data in some ways. Types of operations include identification, for example, learners underline the target structure in the data, judgment, and sorting. The GCR task is considered as a kind of puzzle that enables learners to discover for themselves on how a linguistic feature works (Ellis, 2003; Nassaji & Fotos, 2011).

Osuka and Yamamoto (2005) suggested some problematic grammatical features which can be implemented with the GCR task: nouns countable or uncountable, transitive or intransitive verbs, subordinating conjunctions, prepositions (place and time), coordinate conjunctions, and future tense. They also demonstrate basic steps implementing the GCR task lesson to teach grammar for beginning and intermediate learners with the following steps (Osuka & Yamamoto, 2005):

Preparation

1. Prepare a story or materials with a high frequent target structure.
2. Prepare a table for learners to categorize and summarize rules.

Procedure

- Step 1: Introduce a story to the class and ask some comprehension questions.
- Step 2: Give the written story to learners and tell them to underline the words in the target structure.
- Step 3: Tell the class to categorize words into groups.
- Step 4: Ask the class what rules they can induce from the table.
- Step 5: Give them the rules of the target structure explicitly.

2.2.5 Limitations of grammar consciousness-raising task

Several studies such as Amirian and Sadeghi (2012); Amirian and Abbasi (2014) investigated whether the GCR task is effective in promoting explicit knowledge of L2. The studies revealed that the GCR tasks are effective in promoting both the negotiation of meaning and awareness of the target structure. However, the GCR task also has its limitations. Many studies (e.g. Ellis (1991), Sheen (1992), etc.) have suggested that the effectiveness of the GCR task depends on the nature of language form. It has been found that structures with few rules governing their use are more appropriate to be used in the GCR tasks. Ellis (1991) suggested that the effectiveness of the GCR task may depend on the proficiency of learners. Learners need enough proficiency to talk about the target feature. Sheen (1992) recommended that the GCR task may not be appropriate for young learners who view language as a tool for doing rather than as an object for studying (Ellis, 1991; Sheen, 1992 cited in Ellis, 2003).

The GCR task may be argued whether it is a task because learners do not use the target structure in communication. However, supported by the characteristics of a focus task, the GCR task allows learners to communicate meaningfully with teachers and peers focusing on discovering the target structure. To reduce the difficulties in grammar discovery, they can switch into L1 when they find it difficult to express an idea (Ellis, 2003). Bourke (1996) asserted that the GCR task is complex enough to be a task as its principle caters to discovery learning through problem-solving processes. Moreover, learners tend to remember what they have discovered by themselves better than what they are simply told (Bourke, 1996 cited in Ellis, 2003).

In summary, the GCR task is one of the grammar tasks supported by the FonF (Nassaji & Fotos, 2011) – the current grammar instruction approach and the focused task proposed by Ellis (2003). The GCR task promotes grammar consciousness-raising, communication, and discovery learning. The GCR task is considered as an interesting framework for this study to be integrated with DDL to make DDL a communicative grammar lesson. However, in preparing the lesson of the GCR task, teachers need to consider learners' language proficiency to choose the appropriate target structure and prepare material encouraging discovery learning and grammar consciousness.

2.2.6 A framework for designing of a GCR task lesson

The design of the GCR task lesson involves consideration of the stages or components of the lesson (Ellis, 2003). This section is discussed the framework of the GCR task adapted from the general framework of task-based language teaching proposed by Willis (1996) and the characteristics of the GCR task proposed by Ellis (2003) on how they are similar or different and how they can contribute to the framework to this study.

2.2.6.1 Pre-task phase

The purpose of the pre-task phase is to prepare and motivate learners to perform the task in ways that will promote acquisition. Dörnyei (2002) suggested that pre-task activities involve useful strategies or an emphasis on linguistic factors. The alternative can be tackled in one of these four ways: (1) supporting learners in performing a task similar to the task they will perform in the task phase; (2) asking learners to observe a model how to perform the task; (3) engaging learners in non-task activities designed to prepare them to perform the task such as brainstorming, classifying word and phrases, matching phrases to pictures, memory challenge, thinking of questions to ask, and mind maps; and (4) strategic planning of the main task performance (Dörnyei, 2002). However, in a grammar task, Ellis (2003) suggested that, in the pre-task phase, learners need to be introduced a topic area or addressed the target structure, exposed to the language input, and task guidelines. Teachers may allow learners to share their experience related to the topic or background knowledge concerning the target structure. Then, the teachers help learners recall and activate language points that are useful to accomplish the task such as difficult vocabulary which learners may expose in the input or expressions used in group discussion and task presentation (Ellis, 2003).

2.2.6.2 Task phase

There are three stages of the task: task, planning, and report. In the first stage, task, learners are provided the opportunity to use their prior knowledge (both language and content) to acquire new knowledge through carrying out the task. They can take a risk, make the discovery for themselves from the language input without interference. Teachers observe and encourage students to use L2 in communication

during activities. Since the focused task aims learners to learn grammar in a communicative context, in the pre-task phase, teachers and learners may agree on a proportion for L2 using based on the language proficiency of learners. However, learners can switch to L1 when they feel uncomfortable to use L2 to express complex ideas. In the second stage, planning, it aims at helping learners plan their discovery reports effectively and maximize their learning opportunities. During the planning stage, teachers perform as a language adviser helping learners prepare their report. The third stage, report, after learners complete the task and prepare their report, there is usually a natural curiosity among learners to discover whether the others achieve the same objective. The report stage is the natural conclusion of the task. During this stage, the main role of the teacher is the chairperson, to introduce the presentations, to set a purpose for listening, to nominate speakers, and to sum up at the end of presentations (Willis, 1996; Ellis, 2003).

2.2.6.3 Language focus

Language focus has three major pedagogic goals: (1) to provide an opportunity for a repeat performance of the task; (2) to encourage reflection on how the tasks are performed; and (3) to encourage attention to form (Ellis, 2003). There are two components for language focus: analysis and practice. Language focus allows a closer study of some specific linguistic features occurring in the task cycle. At this point, learners have worked with the language, so they are ready to analyze and synthesize their knowledge and broaden their understanding of the specific language forms. After the task report, learners listen and benefit from each other's ideas on classification. Thus, teachers can add some points that learners may fail to notice. Then, teachers lead the class to practice activities (Willis, 1996).

According to the GCR framework reviewed above, an overview of the teaching framework for the GCR lesson can be summarized as in Table 2.

Table 2 An overview of the teaching framework for the GCR lesson

Pre-Task		
<p>Teacher Role</p> <ul style="list-style-type: none"> - Introduce the logical connectors as the target structure of the lesson. - Provide the language input. - Introduce useful words, phrases, or expressions. - Ensure learners understand task outcomes. <p>Student Role</p> <ul style="list-style-type: none"> - Note down useful words and phrases which they may encounter during the task. 		
Task Cycle		
Task	Planning	Report
<p>Student Role</p> <ul style="list-style-type: none"> - Analyze the language input to identify the form, meaning, and use of the target structure in small groups. 	<p>Student Role</p> <ul style="list-style-type: none"> - Prepare to report the class how they have done the task and what they have discovered. 	<p>Student Role</p> <ul style="list-style-type: none"> - Present their spoken report in L2 to the class. Students can switch to L1 when they feel uncomfortable to use L2 to express complex ideas or when they need to respond to difficult issues.
<p>Teacher Role</p> <ul style="list-style-type: none"> - Act as a monitor and encourages students to use L2 in the discussion. - Allow students to switch to L1 when they feel uncomfortable to use L2 to express complex ideas. 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Ensure the purpose of the report is clear. - Act as a language adviser on task presentation, not the target structure. - Help students practice oral reports or organize written presentation. 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Act as a chairperson who gives brief feedback on presentation. - Select the points from each presentation which will contribute to the summary of the target structure in the next stage.
Language focus		
Analysis	Practice	
<p>Student Role</p> <ul style="list-style-type: none"> - Summarize form, meaning, and use of the target structure. - Ask about other features they have noticed during the task phase such as vocabulary, collocation, grammatical structure. 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Conduct practice activities about the target structure to build confidence. 	

Teacher Role	Student Role
<ul style="list-style-type: none"> - Review the brief each presentation to the class. - Lead learners to notice language items from the report stage. - Bring other useful words, phrases, and patterns to learners' attention. 	<ul style="list-style-type: none"> - Practice the use of the target structure. - Note down useful language items in language notebooks.

The framework for a general task-based lesson was first proposed under the communication-based approach by Willis (1996). Willis (1996) proposed the framework for the task-based lesson in three phases: pre-task, task cycle (task, planning, and report), and language focus. The pre-task phase and the task cycle phase are communicative activities while the last phase – language focus is a short session involving grammar revision and practice. Thus, Willis's task-based framework emphasizes on developing communicative competence, and it is viewed as a strong version of the communicative lesson. Then, according to the shift of grammar instruction into the form-focused instruction, the task-based framework is revised to be applicable for a grammar lesson. Ellis (2003) proposed the GCR task which concerns grammar learning through completing tasks aiming at developing the understanding and consciousness of the target structure.

Hence, the framework of the GCR task lesson in this study adopts the concept of the focused task of Ellis (2003) and the task phases of Willis (1996) aiming at developing both communicative skill and grammar consciousness. Moreover, this adopted framework is integrated with the data-driven learning (DDL) steps. As Willis's task phases share similar steps with DDL share similar characteristics which make them possible to be integrated. The next section is a discussion of the Data-Driven Learning (DDL) on how it can be integrated with the GCR task.

2.3 Data-Driven Learning (DDL)

Data-driven learning (DDL) is an approach for corpus linguistics implementation to language teaching. The use of authentic texts from a corpus for language teaching was developed by Johns (2012), who proposed the concept and basic framework of DDL. In this section, DDL is discussed in more detail.

2.3.1 Definition of Data-driven learning

Johns (2012) defined DDL as the use of computers in a classroom to generate concordances to get students to explore target language patterns and the development of activities and materials based on concordance output. This teaching approach was first used with university students at the University of Birmingham, UK. It believes that learners can be the language detectives who discover specific language items with authentic language. Besides this perspective, it is hypothesized to improve the general skills of using context to generate meaning (Johns, 2012 cited in Nugraha et al., 2017). Although DDL involves the use of computers, many scholars such as Johns (2012) and Hunston (2002) successfully engaged learners in corpus analysis without computers. The printed concordance data were first used by Tim Johns and King (1991) as the evidence presented in his paper 'From Printout to Handout: Grammar and Vocabulary Teaching in the Context of Data-Driven Learning' (Hunston, 2002; Johns & King, 1991). Learners can work on paper printouts of teacher-generated corpus data in the form of concordance lines. This practice of using printed corpus data in language teaching has made three important contributions to DDL: (1) making corpus-based learning or DDL available to students who do not have an access to computers, (2) allowing low proficiency learners to engage in DDL activities by simplifying some difficult words, and (3) helping make corpus-assisted learning activities easier and more focused for learners (Liu & Lei, 2017).

DDL was originally used as an assistant tool for graduate students in in the academic writing course Brimingham University. Although it is first used with high proficiency learners, DDL is not related to the language proficiency of learners as it can also be designed appropriately for learners with different proficiency levels. So, learners' language proficiency needs to be considered when designing the DDL lesson (Nugraha et al., 2017). It is about setting up the situation in which students can

discover the language features themselves by studying concordance lines or sentences from corpus data. This form of study has the advantage of learner motivation as they are motivated to discover the information in the corpus data consulted (Hunston, 2002; Nassaji & Fotos, 2011). Accordingly, the current study adopted the concept of paper-based concordance lines as a material in the GCR task. The concordance lines generated from the corpus are considered as authentic data. However, the data is prepared by teachers and printed out in a paper version to ensure that it is appropriate for learners' language proficiency. As the goal of the GCR task is grammar discovery in a meaningful context, learners should not be overly distracted by the other difficulties which do not concern the task goal.

2.3.2 DDL and grammar teaching

DDL has been widely used in grammar teaching. As it is about discovering the language features by studying concordance lines or sentences from corpus data or inductive grammar learning, learners need structured input to classify, generate the rules by themselves, and create a form, meaning, and function mappings. These learning processes can be done with the concordance lines from a corpus with DDL approach. The authentic data from a corpus allow learners to explore the frequency counts, making it possible to distinguish common usage from less frequent occurrences (Nassaji & Fotos, 2011). DDL is considered an efficient technique to enhance learners' grammatical awareness encouraging them to formulate the language rules. With this approach, learners work as language researchers whose learning is driven by interacting with linguistic data. Bernardini (2004) suggested that DDL provides opportunities for discovery learning since L2 learners can inductively generate grammar rules by considering the great number of examples from a corpus search using concordance software or paper-based concordance. Learner use of concordances is suggested to promote critical thinking by encouraging a focus on the actual use and frequency of target and observing the relationship between form and meaning (Bernardini, 2004; Lin & Lee, 2015; Nassaji & Fotos, 2011; Sah, 2015).

DDL encourages learners to discover the rules rather than the rules presented by teachers. However, in the different teaching contexts, it needs to be simplified appropriately for the target groups of learners. Originally, DDL is the extension of

Computer Assisted Language Learning (CALL) which is an idea for bringing a computer in language learning and teaching. A concordance program or a website is designed to enable both teachers and learners to access different usages instances of interesting various items. Recently, many websites allow learners or teachers to access online and search for any keywords. Then, all instances of the keyword are listed with the highlighted on the key items allowing them to see the contexts where the keyword occurred. This point benefits in terms of the context of use which is vital to convey the meaning, collocation, and other relationships. Thus, concordances are an effective tool for providing language input. However, the issue of how to implement this approach into the classroom is outlined with few proposals which have already been investigated (McEnery et al., 2006).

DDL learning is also seen as an important resource for remedying the current mismatch between authentic target language usages, patterns, and frequencies of grammar structures and what is presented in most L2 textbooks (Nassaji & Fotos, 2011). Concerning the effects of DDL, many studies such as Uysal et al. (2013), Lin and Lee, (2015), and Sah (2015) revealed that learners generally find DDL more engaging and beneficial than learning following textbooks and grammar exercises. They agree that DDL gives them more autonomy by allowing them to learn by themselves. Moreover, many learners agree that they can expose to the authentic language data and engage in active analysis of data to discover language patterns and rules. At this point, the classroom interaction has changed into student-centered learning. Moreover, DDL is empowering some learners as it allows them to learn how language is used (Liu & Lei, 2017).

2.3.3 DDL and grammar consciousness-raising task

DDL does not only teach language features but also presents learners with evidence and asks them questions to form a hypothesis about language and draw conclusions. Most teachers who implement DDL to the classroom have two main reservations: language points as a topic for DDL materials and integration of DDL into an ordinary lesson plan. An example of the integration of DDL into the lesson plan is the framework proposed by Willis (1996). Willis (1996) defined a task as a goal-oriented activity in which learners use language to achieve a real outcome. The

task-based framework consists of three phases: pre-task, task, and language focus (Hunston, 2002). With these basic stages, the task can be developed into an unfocused task which mainly focuses on communication and focused task which the main focus is on language features (Ellis, 2003). Thus, consciousness-raising activities can be blended in a language focus phase of an unfocused-task or the topic of a focus task. Hunston (2002) suggested blending DDL as consciousness-raising activity into task-based language teaching can draw learners' attention to some of the language features in the texts that they have been engaged with when doing the task. Especially in the unfocused task, a language feature may occur only once or twice in the text, so concordance data from corpus materials may be useful to help them to notice the target grammatical rules.

2.3.4 How DDL works

Johns (1991) suggested three basic steps plan a DDL based lesson: identification, classification, and generalization. He also suggested a study on the method(s) which can be integrated with DDL (Johns, 1991). However, some corpus-based studies have been undertaken, and DDL has not been assimilated into mainstream teaching practices as it has still not been made clear in terms of how to implement it in the classroom (Blappert, 1997; Sah, 2015). So, this study contributed to the implementation of DDL with other teaching frameworks in the classroom. The next section is a discussion of the basic steps on how to implement DDL into classrooms and the supported theories.

2.3.4.1 Identification

At this stage, learners are introduced to the language point as a problem they are going to identify from concordance data. The introduction to the language point can be guided questions or conversations in the classroom. There are two theories supporting this stage – input hypothesis and textual enhancement.

The input hypothesis claims that human acquires language in only one way – by understanding messages, or by receiving an enough 'comprehensible input'. The hypothesis progresses along with the natural order. Language contains grammatical rules which are difficult to acquire. These rules can be understood with the help of context which includes extra-linguistic information and previous acquired

linguistic competence (Oller & Krashen, 1988). The input can be defined as the sample of language that the learners are exposed to and attempt to process for meaning. It can be both spoken and written. Gass (1997) described input as the single most important concept of second language acquisition (Gass, 1997 cited in Nassaji & Fotos, 2011). Ellis (1999) emphasized the input hypothesis with several second language acquisition theories such as Universal Grammar (UG) and information processing perspective. The information processing perspective claims that learning a language adopts similar processes with general learning and it is driven by a general cognitive process. Thus, the role of input is crucial because the information in the input and its frequency help learners form a mental representation of the target language (Ellis, 1999 cited in Nassaji & Fotos, 2011). Thus, at this stage, the concordance lines from the corpus are an input which are the samples of the target language. When the learners expose the samples of concordance lines, it leads to the processes of language acquisition. Another theory supporting the concordance lines is a textual enhancement.

Textual enhancement is an external form of input enhancement. It draws learners' attention to linguistic forms through physically manipulating certain aspects of the text to make them easily noticed. However, the textual enhancement does not involve explicit instruction; thus, learners' attention drawn to forms implicitly and unobtrusively. Textual enhancement can be used with both written and oral texts. In written text, this can be accomplished by underlying, boldfacing, italicizing, capitalizing, color coding, or a combination of these techniques. There are five steps to be considered when designing textually enhanced texts as follows (Nassaji & Fotos, 2011):

1. Select a grammar point that learners need to attend to.
2. Highlight the feature in the text using the textual enhancement techniques mentioned above.
3. Avoid highlighting many different forms as it may distract learners' attention from meaning.
4. Convey strategies to keep learners focus on meaning.
5. Avoid providing any additional metalinguistic explanation.

In the current study, the step of identification was blended with the first phase of the task-based framework – pre-task. The vital material in this stage was concordance data which were considered as an input. The learners needed to expose to frequent samples of concordance lines to discover the target structure. According to the theory of textual enhancement, the data were simplified and prepared in a printed version to be appropriate for learners' proficiency.

2.3.4.2 Classification

At this stage, the learners categorize the patterns of language from the concordance data. The learners can discuss in pairs or groups. The teacher works as a facilitator. This stage can be supported by noticing hypothesis and input processing.

Schmidt (1990, 2001) proposed the noticing hypothesis suggesting that second language learners could not begin to acquire a language feature until they had become aware of its input. Noticing was defined as the awareness of a particular linguistic feature that occurs in the input (Schmidt, 1990; Schmidt, 2001 cited in Hinkel, 2016). Fotos (1993) conducted a study of noticing using learners performed grammar tasks or received traditional grammar lessons. The results indicated that high levels of noticing are related to proficiency development (Fotos, 1993 cited in Nassaji & Fotos, 2011). Noticing does not itself result in the acquisition, but it is an essential starting point. Gass (1997) also described a learning process that begins when learners consciously notice something in the second language that is different from what they expect or that fills a gap in their knowledge of the language. Learners must be aware that they are 'noticing' something in the input. The noticing hypothesis brings language acquisition with a usage-based perspective suggesting that the frequency of input which can increase the acquisition and learners' awareness of language features in the input (Gass, 1997 cited in Lightbown & Spada, 2013).

The second theory supporting this GCR task stage and DDL approach is input processing. Input processing refers to the mechanism used in drawing meaning from the input. VanPatten (2004) defined input processing as strategies that learners use to link grammatical forms to their meanings and functions. The rationale behind processing instruction can be summarized as follows: (a) learners need input for acquisition.; (b) a major problem in acquisition might be the ways that learners

process input because conscious learning may lead acquisition to learning; (c) understanding how learners process input might contribute to diverse effective input enhancement or focus on form to aid acquisition of formal features of language. The processing model above has contributed pedagogical implications to grammar instruction. The instruction is a basis of the assumption that by understanding how learners process input, the teacher can diverse effective instructional activities to aid input processing for acquisition. The key components of processing instruction as a pedagogical intervention are as follows:

1. Learners are provided information about the target linguistic form or structure.
2. The input processing strategies may affect the processing of the target structures.
3. They carry out input-based activities that help them to understand and process the form during comprehension.

VanPatten (2004) conducted a comparative study to investigate the effects of the processing instruction. The model is reviewed as an effective model for form-focused instruction (Figure 1).

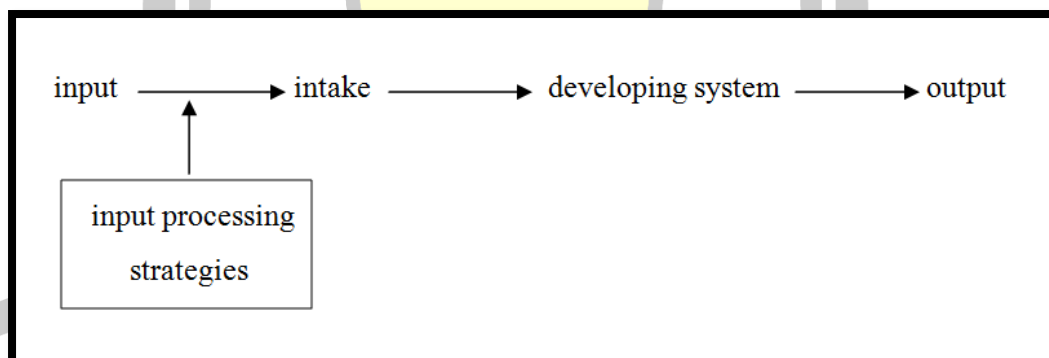


Figure 2 : Processing instruction

Therefore, when the learners are exposed to enough samples from a corpus, they begin to process the input, notice language features, analyze, and link grammatical forms to their meanings and functions. This process leads to language acquisition and language features' awareness. However, the frequency of samples is important as it helps learners classify the data by noticing similar patterns, possible

meaning, contexts where the features are frequently used. This stage can be blended and extend to make it communicative activity in the task cycle phase in the task-based framework. The learners in small groups discuss and analyze the concordance data. The next section presents a discussion of the last step of DDL supported with language learning theories.

2.3.4.3 Generalization

Generalization is the last step of DDL. The learners inductively construct the usage of language structures or words and formulate the rules from the concordance data. The constructivist theory is the theoretical basis supporting this step. In the last few decades, many researchers have proved that the constructivism theory arises from the shift of behaviorism to cognitive thinking. The theory is believed that learners create their meaning through experience. Constructivism has been constructed by the basis of Piaget's cognitive development and Vygotsky's structural theory. According to Piaget's theory, learners can learn actively, create schemes, assimilate, and accommodate the information. From Vygotsky's perspective, learners get social constructivism, group work, and internship. The teacher gives the main idea or guidelines for learners discovering details. In this thinking, the teacher does not teach all the details, but let the learners create their schemes by themselves. The most important thing in the constructivism theory is a learning process. The learning process is based on personal experience, collaborative activities, reflection, and interpretation. Thus, the role of the teacher in this theory is a person who organizes a motivated learning environment for learners in exploring the meaning and appreciating uncertainty. The learners may have different understanding depending on their experience and perspectives to interpret the input. There are five principles of constructivist in EFL context as follows (Suhendi & Purwarno, 2018):

1. Constructivism in language teaching is an action-oriented and cooperative learning, creative classroom, and project completion.
2. The learner is autonomous.
3. Awareness of language and learning is important for a constructivist class.
4. Holistic language experiences and an authentic and complex learning

environment are the souls of the theory.

5. A constructivist approach in EFL context is action-oriented with creative and active participation in classroom activities, learning by preparing projects.

After the discussion and classification of the data from the previous step, learners construct their knowledge about the target feature and present what they have constructed to the class. The presentation of each group might be different. The learners might reconstruct their knowledge from peers' presentations. The teacher can be a language helper who helps learners with L2 discussion and presentation, not the target feature. Then, this step can be extended from the integration with the task-based framework. After the presentation, the presentations will be discussed the similarities and differences and how it can contribute to the rule for the whole class. This step aims at summarizing the rule and to ensure that learners have a correct understanding of the target feature. Then, the teacher allows learner practice with exercise to ensure that they know form, meaning, and use of the target structure.

2.3.5 Challenges and limitations of DDL

Although most studies conducted on the effects of DDL revealed positive effects of DDL, many studies have simultaneously reported many limitations concerning the implementation of DDL. The challenges from some previous studies included (a) difficulties and enormous efforts involved in the analysis of concordance lines and other corpus search results; (b) lack of adequate training in doing corpus analysis for learners and sometimes even for teachers; (c) some difficult questions may be raised in the class, and teachers may feel uncomfortable from losing the expertise with those questions; and (d) lack of access to corpora and user-friendly corpora. The first challenge is true for low-proficiency learners with a learning style not suited for DDL (Hunston, 2002; Liu & Lei, 2017).

According to those limitations, DDL in the version of direct corpus-based learning does not seem appropriate for low-proficiency learners. However, some scholars have found the ways to make DDL successful for a low-proficiency group by printing out the teacher-generated concordance lines instead of doing computer query and analysis directly in which learners may encounter difficulties in the language in a

corpus losing focus on the target feature. These printed concordance lines are supported by the theory of textual enhancement which the data can be arranged and simplified to be a user-friendly version. However, many scholars note that empirical studies and evidence which have been revealed are not enough to confirm the effects of DDL whether it provides positive or negative results. So, this study is aimed at investigating the effectiveness of DDL when it is integrated with the GCR task to fill this gap.

2.4 Logical Connectors

In this section, there are discussions on the definition of the logical connectors proposed by many scholars and the definition adopted in the current study, framework of the logical connectors, and logical connectors in EFL writing.

2.4.1 Definition of logical connectors

Cohesion is a vital principle for textuality which refers to the quality of language use. The notion of cohesion is a semantic relation that includes the connections of meaning inside the text (Ucar, 2017). The cohesion is classified into five categories: reference, substitution, ellipsis, conjunction, and lexical cohesion (Halliday & Hassan, 1976). The terms of conjunction or connector have been differently coined by many scholars such as ‘cohesive conjunctions’ (Halliday & Hassan, 1976), ‘logical connectors’ c, ‘linking adverbials’ (Biber et al., 1999) , ‘discourse connectors’ (Cowan, 2008), or ‘discourse connectives’ (Blakemore, 2002).

The current study will adopt the definition of ‘logical connectors’ proposed by Quirk et al., (1985). Logical connectors are grammatical cohesion functioning as cohesive devices by specific meaning indicating the presence of other components in the discourse (Quirk et al., 1985). Logical connectors are commonly referred to as linking words, linking phrases, or sentence connectors, so they can be described as the glue that binds a piece of discourse together, making the different components stick together. A text cannot be logically constructed without the effective use of logical connectors. The connection between sentences and paragraphs will not be obvious (Ucar, 2017).

2.4.2 Framework of Logical Connectors

The use of logical connectors is generally referred to as a syntactically heterogeneous class of expression which are distinguished by the function in discourse and kind of meaning they express (Kennedy, 2014). The classification and taxonomies of logical connectors have been proposed by many researchers. However, Quirk et al., (1985)'s framework of logical connectors are widely used in the literature. According to this framework, logical connectors are classified into seven general semantic categories according to their semantic relations: listing, summative, oppositional, resultative, inferential, contrastive, and transitional (Quirk et al., 1985 cited in Ucar, 2017). The taxonomy of logical connectors classified by Quirk et al., (1985) is demonstrated as in Table 3.

Table 3 Classification of Logical Connectors

Classification of connectors		Description	Logical Connectors
Listing	(a) enumerative	pieces of information in an order chosen by the speaker/writer	first, second, third, ... firstly, secondly, thirdly, ... one, two, three, ... in the first place, in the second place, ... first of all, second of all, for one thing, to begin with, next, then, finally, lastly, last of all, etc.
	(b) additive	items of discourse to one another	correspondingly, equally, likewise, similarly, in the same way, by the same token, again, also, further, furthermore, more, moreover, in particular, then, too, what is more, in addition, above all, etc.
Summative		a unit of discourse is intended to conclude or sum up the information in the preceding discourse	altogether, overall, then, therefore, thus, (all) in all, in conclusion, to conclude, in sum, to sum up, to summarize, etc.
Oppositional		the second unit of text is to be treated either as equivalent to or concluded in the preceding units	namely, thus, in other words, for example, for instance, that is, that is to say, specifically, etc.
Resultative		the second unit of discourse states the result or consequence	accordingly, consequently, hence, now, so, therefore, thus, as a consequence, in

		– either logical or practical – of the preceding discourse	consequence, as a result, of course, etc.
Inferential			else, otherwise, then, in other words, in that case, etc.
Contrastive	(a) reformulation (b) replacive (c) antithetic (d) concessive	items that in some way mark incompatibility between information in different discourse units or that signal concessive relationships. Some logical connectors mark contrasts, alternatives, or differences.	(a) better, rather, more accurately, more precisely, alias, alternatively, in other words, etc. (b) again, alternatively, rather, better, worse, on the other hand, etc. (c) contrariwise, conversely, instead, oppositely, then, on the contrary, in contrast, by way of contrast, in comparison, by comparison, by way of comparison, on the other hand, etc. (d) anyhow, anyway, besides, else, however, nevertheless, nonetheless, notwithstanding, only, still, though, yet, in any case, in any event, at any rate, at all events, for all that, in spite of that, in spite of it all, after all, at the same time, on the other hand, all the same, admittedly, of course, still and all, that said, etc.
Transitional	(a) discorsal (b) temporal	The items mark the insertion of an item that does not follow directly from the previous discourse. The new information is not incompatible with what it is linked to but rather it is signaled as only loosely connected, or unconnected.	(a) incidentally, now, by the way, by the by, etc. (b) meanwhile, meantime, in the meantime, in the meanwhile, eventually, originally, subsequently, etc.

2.4.3 Logical connectors in EFL context

As foreign language writing requires both the form and function of the target language, this is an enormous problem for learners in EFL context. Producing textual cohesive ties in writing is more demanding for either teaching or testing in EFL. To use logical connectors appropriately, learners need more than semantic and syntactic knowledge of the language. The study of Celce-Murcia and Freeman (1983) revealed

the importance of sensitivity to register of logical connectors for 'effect clauses' and distinguishing between formal connectors such as 'in consequence' and informal connectors such as 'so'. The study also revealed one problem in logical connector teaching is the use of variety of logical connectors in appropriate registers. There are logical connectors indicating similar relationships, but native speakers tend to use these logical connectors depending on situations and contexts. However, EFL learners understand that they could be used interchangeably in all contexts (Celce-Murcia & Freeman, 1983).

EFL High school students are expected to master the cognitive skills required to understand complex composition concepts while struggling to understand the dimensions of a foreign language. Besides the appropriate register of the logical connectors, students' misuse of logical connectors may cause misunderstanding in the message they want to convey. Crewe et al., (1985) found that, among EFL learners, the problem is one of connector overuse which is almost entirely superfluous to the comprehension of their writing (Crewe et al., 1985 cited in Milton and Tsang, 1993).

Logical connector knowledge has been in an important role over past three or four decades. The focus in assessing EFL student writing has shifted from evaluation of language from evaluation of function, and to considering the inter-relationship of the other aspects of a text besides its accuracy at a sentence level. Hirsch (1977) stressed the importance of teaching cohesive stylistic devices, their relationship to prosodic signals and the use of proleptic items in writing. The focus on cohesion has been part of the new direction in communicative and functional language teaching. There has been much emphasis in both language textbooks and in the classroom on the importance of logical connectors. However, this emphasis has, as we will show later in this paper, often neglected important details of cohesion. Cohesion can be abused by relegating it to an ornamental role (Hirsch, 1977 cited in Milton and Tsang, 1993).

2.5 Related studies

The related studies discussed in this section are divided into three groups: the studies of DDL for grammar teaching and learner's attitude, the studies of DDL blended with other approaches, and the studies of the grammar-consciousness raising

task (GCR) (Nam (2010), Uysal et al. (2013), Phoocharoensil (2012), Lin and Lee (2015), Boontam and Phoocharoensil (2018), and Nugraha et al. (2017)).

2.5.1 The studies of DDL for grammar teaching and learner's attitude

The six studies conducted on the effectiveness and attitude of learners both in school and university toward DDL or corpus-based instruction are discussed in the following section .

Nam (2010) conducted a study on the use of concordance lines as teaching material and a reference tool. The study investigated the effects of corpus-based language learning in productive ESL vocabulary. The learners were required to use a corpus as a vocabulary reference tool in their writings. The results indicated that the learners significantly had a better understanding of grammar and a positive attitude toward using a corpus as an assistant tool in writing (Nam, 2010).

Uysal et al. (2013) studied the use of using concordances as supplementary materials for a grammar lesson. They found the problem in the grammar class that the exercise in a textbook was not meaningful and could not support learners in increasing the awareness in the target point. They used the data generated from the corpus as the supplementary for grammar activities instead of exercise form the textbook. The study indicated that the natural and rich quality of concordances from the corpus could serve as good supplementary materials in teaching grammar. Moreover, the corpus data was authentic examples of language by native speakers illustrating various use of a certain structure or item (Uysal et al., 2013).

Phoocharoensil (2012) investigated university learners' attitudes toward corpus-based grammar teaching. The participants were implemented with a corpus-based lesson - relative clause 'who' and 'which'. Then, they were provided with questionnaires and interviewed to reflect their attitude toward the lesson. The results showed that EFL university students enjoyed learning grammar using concordance lines, considered a trendy grammar approach (Phoocharoensil, 2012).

Lin and Lee (2015) investigated teachers' attitudes toward DDL teaching. The result indicated that the teachers found DDL an innovative and interesting approach for grammar teaching. DDL engaged students to participate in grammar discussion which transformed the interaction in the classroom from passive students

to active students. The result also indicated the challenges of applying DDL to the classroom that DDL increased workload and technical difficulties in preparing DDL materials and facilitating DDL activities. Also, the teachers suggested three key practices to improve DDL lesson: reducing the number of corpus entries used, deploying complete concordance lines, and guide the students with focused guiding questions (Lin & Lee, 2015).

Boontam and Phoocharoensil (2018) investigated the effectiveness of the paper-based DDL method and learners' attitudes toward the lesson in developing preposition knowledge. The results of the study indicated learners could develop their grammatical consciousness and produce more meaningful, grammatical, and complex sentences with that DDL lesson. Moreover, they viewed the DDL lesson as a fun, interesting, and challenging lesson. They considered the data from a corpus a helpful resource for learning grammar (Boontam & Phoocharoensil, 2018).

Nugraha et al. (2017) conducted a qualitative study in the EFL class. The DDL lessons on different grammar points: conjunction, countable and uncountable, and possessive pronoun were implemented to the class. After the DDL lessons, all participants were interviewed to reveal their attitude toward the implementation of the DDL approach in teaching grammar. The result revealed that most learners had positive attitudes toward DDL grammar lessons. The study concluded that the DDL approach was an effective learning approach to grammar teaching encouraging learners to be active language learners (Nugraha et al., 2017).

According to the studies which have been discussed, the studies of Nam (2010) and Uysal et al. (2013) revealed that DDL and corpus-based teaching could be used as supplementary material and a reference tool for grammar and writing class. The data from the corpus could be applied to be grammar material and exercise besides those in textbooks. Moreover, the studies of Boontam & Phoocharoensil (2018) and Nugraha et al. (2017) indicated that DDL was not only effective in terms of developing grammar consciousness and vocabulary knowledge, but it was also effective and creative method for grammar teaching. The studies of Lin and Lee (2015), Phoocharoensil (2012) and other studies revealed that teachers and learners had a positive attitude toward learning grammar through DDL. They agreed that DDL helped them understand the target structure better from concordance samples and

produce more meaningful and complex language in their writings. The teachers found that DDL was an interesting and creative way for grammar teaching though they had to work hard in preparing DDL materials and select the concordance lines from the corpus. Besides motivating learners' understanding, it brought positive attitudes to learners. So, these related studies can contribute to the current study to investigate learners' effectiveness and attitudes toward the integrated inductive approach and carefully planned lessons.

2.5.2 The studies of DDL blended with other teaching approaches

As Johns (2012) proposed the basic steps of DDL, he suggested it possibly be blended with other teaching approaches (e.g. PPP and III). So, in this section, the results from only implementing DDL basic steps and DDL with other teaching methods are discussed.

Dankittikul and Laohawiriyanon (2018) investigated the effectiveness of two teaching methods: DDL in a paper-based concordance and deductive grammar teaching for logical connector teaching to low English proficiency learners. The results showed that the gain score of the deductive group was slightly higher than the inductive group with DDL and indicated that purely DDL might not be appropriate for low-proficiency learners. However, the researchers suggested blending DDL with other teaching approaches for low proficiency learners. The difficult words in concordances should be simplified to reduce learners' difficulties as their attention should be focused on the meaning and use of logical connectors (Dankittikul & Laohawiriyanon, 2018).

According to the suggestion of Johns (2012) who proposed the DDL approach, basic steps of DDL should be blended or modified to make it effective for a particular group of learners. The next study presents the study on the integrated teaching framework of DDL basic steps with other teaching approaches.

Sah (2015) conducted a study concerning the relative effectiveness of two teaching frameworks to teach written discourse markers: DDL integrated with Present-Practice-Produce (PPP) and DDL integrated with Illustration-Interaction-Induction (III). The results indicated that these teaching frameworks were not significantly different. However, DDL with III was more effective than DDL with

PPP to some degree. It appeared that the consciousness-raising activities of III were more effective in developing knowledge of written-discourse markers (Sah, 2015).

According to the studies of Dankittikul and Laohawiriyanon (2018) and Sah (2015), there were many challenges in implementing DDL in a classroom setting. However, Johns (2012) who proposed the concept of DDL suggested that DDL is a basic concept that can be implemented with activities or other teaching methods. To make DDL applicable to all groups of learners, DDL should be studied to which approach and how it can be integrated. However, recently, there are few studies about DDL integrated with other teaching methods. For example, the study of Sah (2015) - DDL with PPP and DDL with III. PPP and III can be compared to deductive and inductive grammar teaching. While deductive grammar teaching is believed to be the most effective grammar teaching method, DDL blended with III is more effective than DDL blended with PPP to some degree. However, the drawback of these integrated frameworks is the lack of focusing on communication. Thus, it is beneficial to investigate other teaching methods to integrate with DDL to make it a communicative lesson. The current study was aimed at investigating other effective ways that DDL could be blended with. That is, to investigate the effectiveness of the integration of GCR and DDL might contribute an alternative way for DDL implementation to EFL instruction.

2.5.3 The studies of grammar-consciousness raising task (GCR)

The grammar consciousness-raising task (GCR) is a revision of TBLT focusing on both form and communication. In this section, the researcher discusses the studies about the effectiveness and learners' perception of GCR on grammar teaching. Then, the researcher presents how it can be integrated with DDL as the framework for this study.

Amirian and Sadeghi (2012) investigated the effectiveness and learners' perception toward grammar consciousness-raising task compared with traditional grammar teaching. The results indicated that learners taught with the GCR task significantly outperformed the group taught with traditional grammar instruction. Moreover, learners have positive attitudes toward the GCR task. Learners viewed the GCR task as an effective model for grammar learning as it facilitated the

internalization of grammar, and they were involved in discovery learning. The researchers suggested the GCR task as an alternative to traditional grammar instruction. The syllabus designers and practitioners were recommended to use the task to promote learners' knowledge and autonomy. The researchers also suggested the further study should investigate whether the GCR task was appropriate for young learners or low-proficiency learners (Amirian & Sadeghi, 2012).

Besides the GCR task compared with the traditional grammar teaching, Amirian and Abbasi (2014) also conducted a comparative study on the effect of GCR task and Presentation-Practice-Production (PPP) on EFL learners' grammatical knowledge. The learners in the experiment group received GCR task instruction while the control group received the PPP method. The study revealed that GCR instruction was more effective for improving grammar knowledge for EFL learners than PPP. The task enhanced grammatical knowledge and promoted autonomous learning. However, the researchers noted that the GCR task might be suitable for more proficient learners. It should be adjusted to make it appropriate for low-proficiency learners.

According to previous studies, task-based language teaching has been implemented in grammar teaching. Also, the grammar consciousness-raising task (GCR) is a type of task under the framework of TBLT. The task is designed for grammar teaching focusing both form and communication. The task promotes the concepts of discovery learning and inductive grammar learning. The studies on the GCR task showed that the GCR task was an effective grammar teaching method and had an edge over the traditional grammar teaching method and PPP. Moreover, learners also had positive perceptions of learning grammar through the GCR task. However, the application of the GCR task framework was needed to be explored on how it worked with young or low-proficiency learners. The characteristics that the task promoted discovery learning and inductive grammar learning could benefit DDL. Hence, in the current study, the researcher was interested in investigating the effectiveness of the integrated framework on DDL and GCR task to enhance logical connector knowledge for high school EFL learners.

2.6 Summary of the literature review

Grammar is a key component of language in language teaching. However, teaching EFL grammar has been considered a controversial area of language teaching (Petraki & Hill, 2010; Negahdaripour & Amirghassemi, 2016 cited in Benitez-Correa et al., 2019). One of the issues concerning teaching grammar in this context is about the effective teaching grammar methods for EFL learners (Benitez-Correa et al., 2019).

According to main grammar teaching approaches, Thornbury (1999) proposed a deductive approach and an inductive approach for teaching grammar. The deductive approach is an approach to grammar teaching from rules (Benitez-Correa et al., 2019). The principles of this approach are generally used in the classes where the main target is to teach grammar structures. However, the drawback of this approach is that the practicing activities involve only reading and writing, and little attention is given to speaking or pronunciation. The inductive approach is a process which a learner discovers the grammar rules by themselves by examining the examples. In an inductive approach, it is also possible to use a context for grammar rules. Learners explore the grammar rules in a text or an audio rather than isolated sentences. The inductive approach promotes the value of what comes to be known as discovery learning. The principle underlying discovery learning involves cycles of trial and error, with guidance and feedback provided by the teacher.

According to the concept of the discovery learning, there are many approaches for grammar teaching underlying with this concept. One way of doing the discovery learning is by means of concordance form corpus. A concordance is a collection of the instances of a word or phrase, organized in a way that it can be displayed in linguistic environment. However, the potential of corpora as sources for discovery learning is still being debated whether it is possible to make the lesson more communicative.

The current study adopted the integrated inductive approach from two discovery-learning approaches –grammar consciousness raising task (GCR task) and data-driven learning (DDL) as a communicative discovery-learning approach for teaching grammar. The GCR task was a piece of grammar work involving processes and interactions among learners, peers, and meaningful learning materials that

encourage learners to comprehend, manipulate, and produce language to achieve a task's goal as a target grammar. It promoted grammar consciousness-raising, communication, and discovery learning. The current study was conducted to investigate whether the integrated inductive approach between the GCR task and DDL would be an effective communicative grammar lesson.

DDL is one of deductive teaching approaches. It believes that learners can be language detectives who discover specific language items with authentic language. Besides this perspective, it is hypothesized to improve the general skills of using context to generate meaning. Although it was first used with high proficiency learners, DDL is not related to the language proficiency of learners as it can also be designed appropriately for learners with different proficiency levels. So, learners' language proficiency needs to be considered when designing the DDL lesson (Nugraha et al., 2017). Accordingly, the current study adopted the concept of paper-based concordance lines as a material in the GCR task. The concordance lines generated from the corpus were considered as authentic data. However, this data was prepared by teachers and printed out in a paper version to ensure that it was appropriate for learners' language proficiency. As the goal of the GCR task was grammar discovery in a meaningful context, learners should not be overly distracted by the other difficulties which do not concern the task goal.

According to previous studies, the concepts of the GCR task and DDL promotes discovery learning and inductive grammar learning. Although pure DDL compared with the deductive grammar teaching might not effective in some contexts, the consciousness-raising activities of the GCR task may bridge DDL's gap as the consciousness-raising activities of III in the study of Sah (2015). Moreover, the previous studies on learners' attitudes toward the GCR task indicated that they had positive attitudes and perceptions. Hence, in the current study, the researcher was interested in investigating the effectiveness of the integrated framework on the GCR task and DDL to enhance logical connector knowledge for high school EFL learners.

CHAPTER III

RESEARCH METHODS

This chapter presents the research methodology consisting of the participants of the study, research design, research instrument, data collection, and data analysis.

3.1 Participants of the study

Sixty twelfth-grade students from two intact classes at a high school, the academic year 2019 in Mahasarakham Province of Thailand were selected by purposive sampling as participants of the study. The participants in these classes had the same level of English language proficiency (A1-B1) according from CEFR test results, which the school offered to the participants as an English placement test. They were studying in the top grade of the Basic Education Core Curriculum B.E. 2551 in science-math gifted program. They had to take the national examination and language proficiency test e.g. TOEIC, TOEFL, CEFR, and university entrance examination after finishing all courses. So, it was required that they be able to basically write at a sentence level, and the knowledge of logical connectors were vital for them.

For the convenience in implementation and data collection, the participants were divided into two groups according to their classes: 30 in an experimental group and 30 in a control group. The experimental group was treated with the integrated inductive approach lessons. They were introduced the steps of the GCR task and concordance lines before beginning the implementation. The control group were implemented with the lesson plans on the deductive grammar teaching approach.

As they were in the top grade of the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) having studied English for twelve years, this could ensure that they were familiar with English language and language learning process in order to achieve self-discovery learning with the integrated inductive approach lesson. According to their language proficiency from CEFR test results, it could assure that they were in the same language proficiency level. Their English proficiency test results indicated that their English proficiency was mixed (A1-B2) and quite low especially in writing

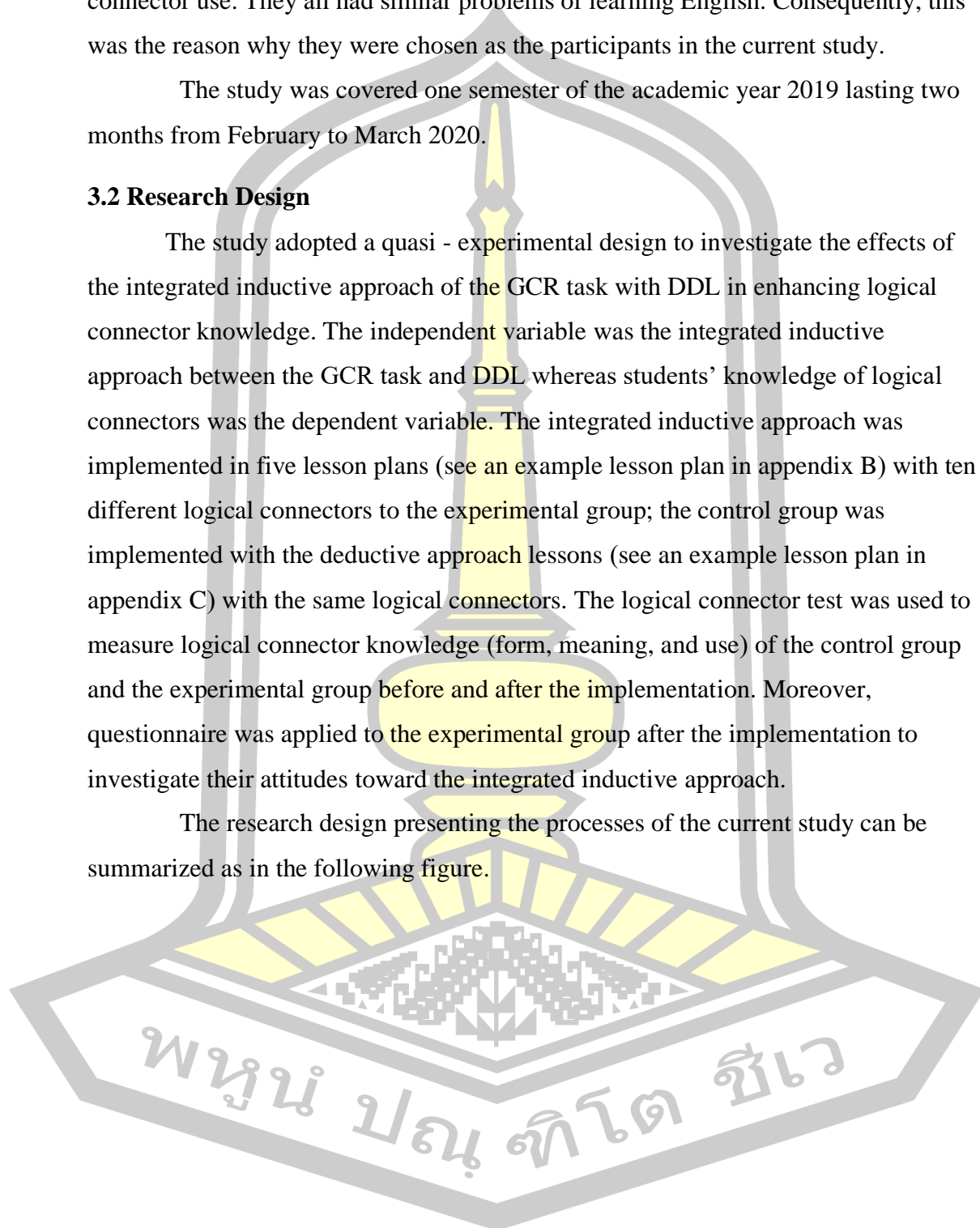
skill (A1-A2). They were not master the language rules pertaining to the logical connector use. They all had similar problems of learning English. Consequently, this was the reason why they were chosen as the participants in the current study.

The study was covered one semester of the academic year 2019 lasting two months from February to March 2020.

3.2 Research Design

The study adopted a quasi - experimental design to investigate the effects of the integrated inductive approach of the GCR task with DDL in enhancing logical connector knowledge. The independent variable was the integrated inductive approach between the GCR task and DDL whereas students' knowledge of logical connectors was the dependent variable. The integrated inductive approach was implemented in five lesson plans (see an example lesson plan in appendix B) with ten different logical connectors to the experimental group; the control group was implemented with the deductive approach lessons (see an example lesson plan in appendix C) with the same logical connectors. The logical connector test was used to measure logical connector knowledge (form, meaning, and use) of the control group and the experimental group before and after the implementation. Moreover, questionnaire was applied to the experimental group after the implementation to investigate their attitudes toward the integrated inductive approach.

The research design presenting the processes of the current study can be summarized as in the following figure.



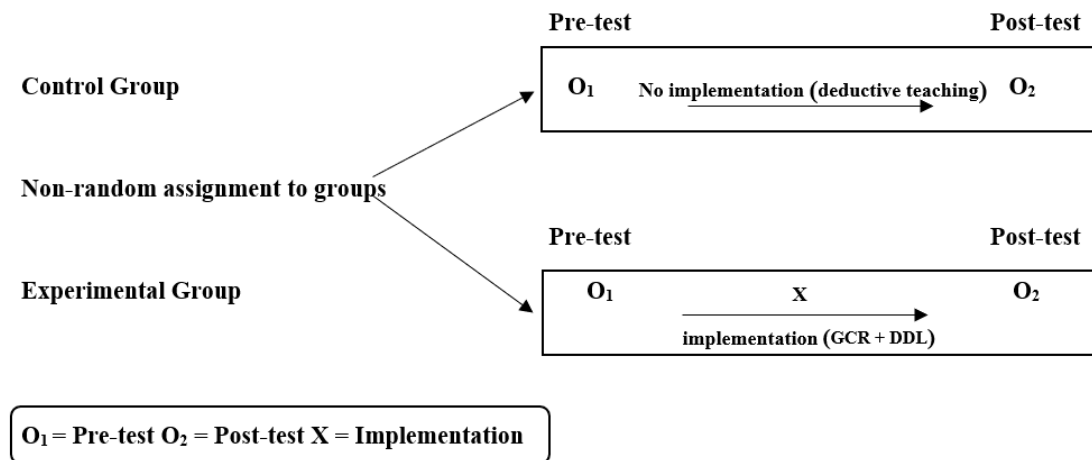


Figure 3: Research design

The intervention of the study consisted of five lessons that were designed based on the study approach. The steps to plan the lessons can be demonstrated as in following figure.

- Step 1: Studying the basic frameworks
- Step 2: Selecting logical connectors from student's books
- Step 3: Creating a logical connector assessment form
- Step 4: Selecting logical connectors based on the result of the logical connector assessment form
- Step 5: Pairing logical connectors that can be compared to meaning or use
- Step 6: Selecting twenty concordance line in sentence view for each logical connector
- Step 7: Constructing the lesson plans
- Step 8: Verifying the effectiveness of the lesson plans by the experts
- Step 9: Implementing the lesson plans

Figure 4: Lesson plans construction steps

From Figure 4, the steps for constructing the lesson plans can be clarified as follows:

Step 1: The researcher studied the basic frameworks of the GCR task, DDL and logical connectors from the related documents on how they could be integrated into a lesson.

Step 2: Logical connectors (subordinating, conjunctions, and transitions) were selected from two student textbooks 'Weaving it Together 2-3' in grammar section. In each chapter of the book, there were essential logical connectors presented in the grammar section along with other grammar points. The books were certified by the ministry of education and used as the course materials for English reading and writing in school. The books were designed based on the basic Education core curriculum B.E. 2551 (A.D. 2008) of an upper-secondary level. However, the participants had never studied these books before the study was conducted. This could assure that the selected words were appropriate for the participants. There were 43 logical connectors introduced in the grammar sections in two books. There were *however, while, though, although, yet, therefore, thus, as well, in fact, despite, in order to, unless, due to, eventually, otherwise, as a result, in addition, for instance, instead of, nevertheless, whereas, on the other hand, even though, so that, hence, unlike, similarly, moreover, in other words, furthermore, in spite of, consequently, besides, accordingly, in contrast, namely, likewise, owing to, in order that, in summary, since, as a result of, and on the contrary.*

After that, 22 logical connectors with at least five occurrences in the book were selected for the logical connector assessment form. There were *however, while, although, therefore, as well, in fact, despite, in order to, due to, as a result, in addition to, whereas, similarly, moreover, in other words, furthermore, besides, in contrast to, in summary, since, as a result of, and on the contrary.*

Step 3: The logical connector assessment form (see appendix A) was created for other 100 students studying in the same grade as the participants. These students were required to do a self-assessment regarding their background knowledge of logical connectors by rating whether they knew the form and meaning of logical connectors from 'I know it, and I can use it.', 'I think I know it, but I'm not sure.', to the lowest one, 'I don't know it.' They were required to write a sample sentence of a

logical connector when they rated in the scale of *'I know it, and I can use it.'* as well.

Step 4: According to the result from the logical connector assessment form, 15 logical connectors which were rated in the group of *'I don't know both form and meaning.'* at higher than fifty percent were selected for the next step. There were *while, despite, in order to, due to, as a result of, on the contrary, in contrast to, as well, whereas, as a result, in addition to, besides, although, therefore, and similarly.*

Step 5: The selected logical connectors from step 4 were classified in five pairs (10 logical connectors). According to the discovery learning characteristic, the logical connectors were paired based on the similarity in meanings and differences in using pattern. The selected logical connectors were as follows:

Pair 1: *'due to'* and *'in order to'*

'Due to' was used to present the reason for a noun and was usually preceded by the verb *'to be'* in one form or another. *'In order to'* was used with an infinitive form of a verb to express the purpose of something. The objective for teaching this pair of logical connectors was to indicate similar relation and different patterns.

Pair 2: *'as a result'* and *'as a result of'*

Although this pair of logical connectors indicates cause-effect relationship, there was a difference in using pattern. *'As a result'* was usually preceded by a clause while *'as a result of'* was followed by a noun or a phrase.

Pair 3: *'in contrast to'* and *'on the contrary'*

With this pair of logical connector, learners needed to learn that *'In contrast to'* was followed by a noun or a phrase and was used to contrast two ideas or compare their differences. This did not imply that either idea was wrong, just that the two were contrasted. *'On the contrary'* was usually preceded by a clause; however, it was used when the writer or speaker want to emphasize a negative claim - that was, he brought a viewpoint that was explicitly not accepted, and the phrase was used to bring the alternate option.

Pair 4: *'despite'* and *'whereas'*

'Despite' expressed a contrast between two things. It came before a noun or phrase. *'Whereas'* indicated contrast relation as well, but it came before a clause. With this pair of logical connectors, besides understanding their forms and

meanings, students were asked to discover the using patterns of these logical connectors as well.

Pair 5: *'in addition to'* and *'as well'*

'In addition to' and *'as well'* was used to add more idea with the subject discussed earlier. *'In addition to'* was followed by a noun or phrase. It could be placed at the beginning or middle in the sentence and followed by a clause. *'As well'* almost always came in end position. Students were required to learn about forms and similar meaning in binding relationship. They also needed to differentiate use patterns of these two logical connectors.

Step 6: Ten concordance lines in sentence view of each logical connector were selected from the British National Corpus (BNC) as samples of language in meaningful context. The data from the corpus was considered as an authentic material and more meaningful than the sentences from teachers. The selected concordance lines were simplified vocabulary to make it appropriate for learners' proficiency (CEFR A1-B1).

Step 7: Five lesson plans were constructed following the teaching procedures of the integrated inductive approach of the GCR task and DDL as indicated in Table 4.

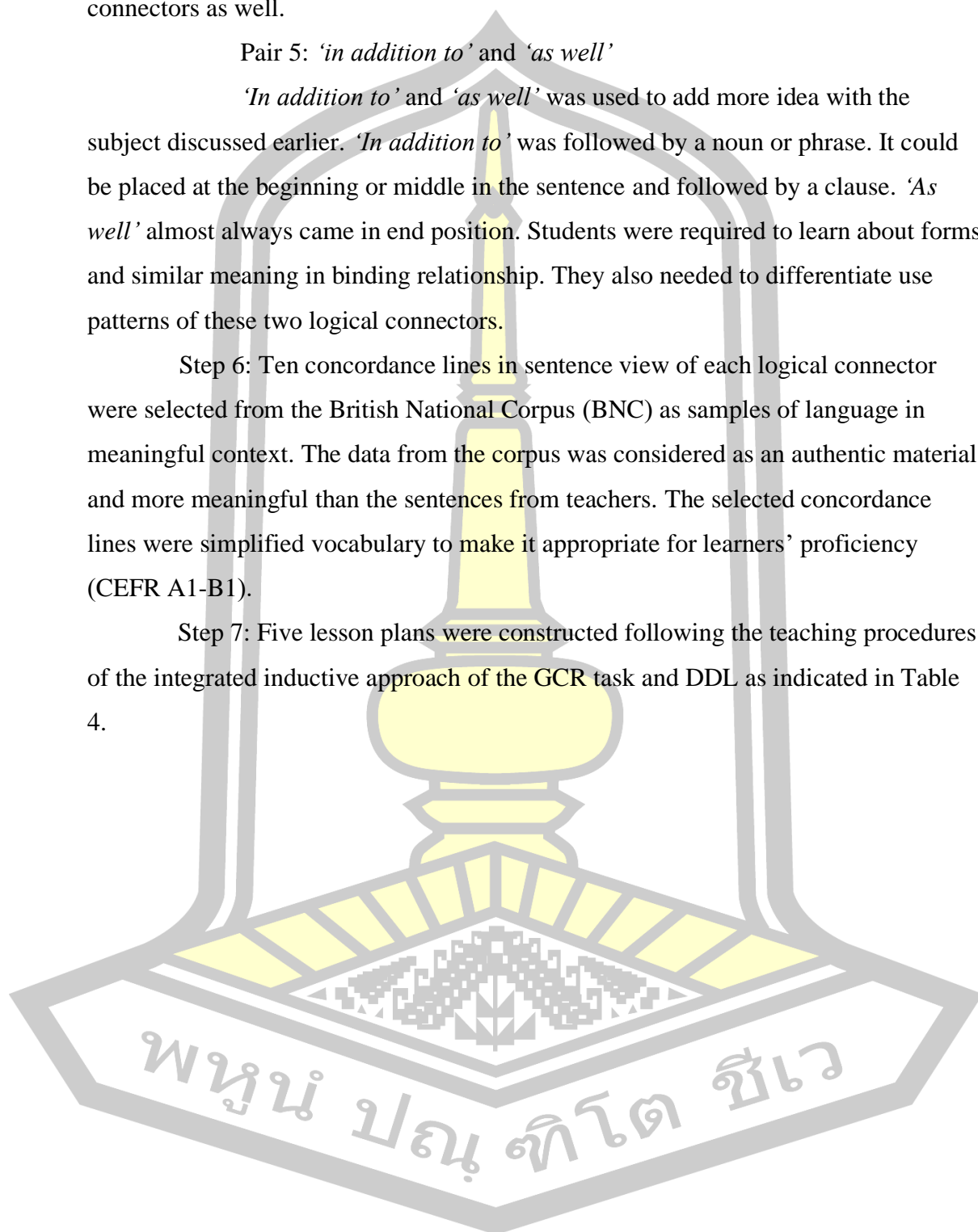


Table 4 An overview of the integrated inductive approach between the GCR task and DDL

Pre-Task		
<p>Teacher Role</p> <ul style="list-style-type: none"> - Introduce the logical connectors as the target structure of the lesson. (GCR + DDL) - Provide the language input – printed concordance lines as the authentic samples of the logical connectors in context. (DDL) - Introduce useful words, phrases, or expressions. (GCR) - Ensure learners understand task outcomes. (GCR) <p>Student Role</p> <ul style="list-style-type: none"> - Note down useful words and phrases which they may encounter during the task. (GCR) 		
Task Cycle		
Task	Planning	Report
<p>Student Role</p> <ul style="list-style-type: none"> - Analyze the concordance lines to identify the form, meaning, and use of the logical connectors in small groups. (GCR + DDL) 	<p>Student Role</p> <ul style="list-style-type: none"> - Prepare to report the class how they have done the task and what they have discovered. (GCR) 	<p>Student Role</p> <ul style="list-style-type: none"> - Present their spoken report in L2 to the class. Students can switch to L1 when they feel uncomfortable to use L2 to express complex ideas or when they need to respond to difficult issues. (GCR + DDL)
<p>Teacher Role</p> <ul style="list-style-type: none"> - Act as a monitor and encourages students to use L2 in the discussion. (GCR) - Allow students to switch to L1 when they feel uncomfortable to use L2 to express complex ideas. (GCR) 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Ensure the purpose of the report is clear. (GCR) - Act as a language adviser on task presentation, not the logical connectors. (GCR) - Help students practice oral reports or organize written presentation. (GCR) 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Act as a chairperson who gives brief feedback on presentation. (GCR) - Select the points from each presentation which will contribute to the summary of the target logical connectors in the next stage. (GCR + DDL)
Language focus		
Analysis	Practice	
<p>Student Role</p> <ul style="list-style-type: none"> - Summarize form, meaning, and use of the target logical connectors. (GCR + DDL) - Ask about other features they have noticed during the task phase such as vocabulary, collocation, grammatical structure. (GCR) 	<p>Teacher Role</p> <ul style="list-style-type: none"> - Conduct practice activities about the target logical connectors to build confidence. (GCR) - Modify concordance lines to be material for a practice activity. (GCR + DDL) 	

Teacher Role	Student Role
<ul style="list-style-type: none"> - Reviews the brief each presentation to the class. (GCR + DDL) - Leads learners to notice language items from the report stage. (GCR + DDL) - Brings other useful words, phrases, and patterns to learners' attention. (GCR + DDL) 	<ul style="list-style-type: none"> - Practices the use of the target logical connectors. (GCR + DDL) - Notes down useful language items in language notebooks. (GCR)

Step 8: The lesson plans were verified for the effectiveness in terms of content validity and appropriateness by three experts in the fields. The evaluation form consisted of eleven items in the five-Likert scale: excellent, good, average, fair, and revision needed (see appendix D). The items with the average score under three were revised.

Step 9: The lesson plans were implemented.

3.3 Research instruments

The instruments for data collection were the logical connector test and the questionnaire. The processes for constructing and assessing the research instruments were as indicated in Figure 5 and Figure 6.

3.3.1 The logical connector test

- Step 1: Studying the literature on the format of the test
- Step 2: Constructing the logical connector test
- Step 3: Evaluating Index of Item– Objective Congruence: IOC of the tests by three experts
- Step 4: Constructing the pilot study
- Step 5: Assessing the quality of the test
- Step 6: Revising the test
- Step 7: Implementing the test

Figure 5: Steps for constructing the logical connector test

Before the beginning of the first lesson, the participants were implemented with the pre-test on ten selected logical connectors. The test was used again as the post-test after the implementation. The steps for constructing the test were as follows:

Step 1: The researcher studied the related documents about the concept, objective, and format of the tests.

Step 2: The logical connector test were constructed (see appendix E). The test was aimed at evaluating the logical connector knowledge in terms of form, meaning, and use of ten logical connectors selected from two textbooks. Hence, the test was divided into two sections: receptive section and productive section with 30 items as follows:

In the receptive section, there were 10 connectors. To evaluate forms and meanings of the selected logical connectors, the learners were required to check the spelling of the logical connectors and decide whether the logical connectors were used in appropriate contexts according to their meanings. This section was designed to evaluate the logical connector knowledge of form and meaning.

In the productive section, there were 10 connectors. The learners were required to write sentences with each logical connector. The objective of this section was to evaluate whether the learners could use of the logical connectors in real authentic contexts. The rubrics for scoring in this section, there were three level for scoring each item as follows:

3 marks = The learners could write a logical connector to joins two ideas correctly and appropriately. For instance, *I go to school despite the heavy rain.*

2 marks = The learners could use a logical connector to join two ideas appropriately, but there was a grammatical mistake. For example, *I go to school despite it raining.*

1 mark = The learners could write a logical connector correctly with only one word, phrase, or clause, and the second idea was not complete. For example, *I go to school despite it.*

0 mark = The learners could write nothing or write only a logical connector without other words, phrases, or clauses.

Step 3: The test items were evaluated in terms of the objectivity and validity of the tests by three experts (see appendix F). Each item was rated and calculated by

the Index of Item-Objective Congruence (IOC) in three-Likert scale on their objectives and appropriateness as follows:

The item is appropriate = 1

Not sure = 0

The item is not appropriate = -1

Step 4: The test was implemented as a pilot study with a group of students having similar language background.

Step 5: The results from the pilot study were analyzed to assess the effectiveness of the tests in terms of reliability, difficulty, and discrimination.

Step 6: The test was revised according to the results analyzed in the previous step.

Step 7: The test was implemented before the implementation as the pre-test and after the implementation as the post-test.

3.3.2 The questionnaire

Step 1: Studying the basic concepts and the related documents

Step 2: Constructing the questionnaire

Step 3: Evaluating the quality of the questionnaire by the experts

Step 4: Conducting the pilot study

Step 5: Revising the instruments

Step 6: Administering the questionnaire

Figure 6: Steps for constructing the questionnaire

To investigate the attitudes of learners toward the integrated inductive approach, their opinions were explored through the questionnaire after the implementation.

From Figure 6, the steps for development and assessment of the questionnaire were as follows:

Step 1: The researcher studied the basic concepts and the related documents about language testing and evaluation.

Step 2: The questionnaire was constructed (see appendix G). The items in the

questionnaire were written in Thai and rated by using the Likert five-rating scale checklist from 1, 2, 3, 4, and 5 indicating the following level of quality: the least, less, moderate, more, and the most respectively.

Step 3: The quality of the instruments was evaluated in terms of objectivity and validity by three experts (see appendix H). The experts rated each item according to the objectives of the statements and how the respondents understand the questions by rating on the evaluation form. Then, the Index of Item-Objective Congruence (IOC) was calculated by scoring to the answers as follows:

The item is appropriate = 1

Not sure = 0

The item is not appropriate = -1

Step 4: The pilot study was conducted with a group of students who were similar in terms of educational background and language proficiency.

Step 5: The questionnaire was revised based on the information gained from the pilot study.

Step 6: The questionnaire was administered to the experimental group after all lessons were implemented.

3.4 Data collection procedures

The data in this study were collected by the following processes:

1. Before the first lesson begins, the logical connector test was implemented as a pre-test in both control group and the experimental group to measure the participants' logical connector knowledge before the implementation.
2. Five lesson plans of the integrated inductive approach of the GCR task and DDL were used with the experimental group, while the deductive grammar teaching was used in the control group. Each lesson plan lasted two hours.
3. The questionnaire was applied to the experimental group after all lessons were implemented to investigate their attitudes toward the integrated inductive approach of the GCR task and DDL.
4. The logical connector test was applied as the post-test to investigate the effectiveness of the integrated inductive approach after completing the implementation.

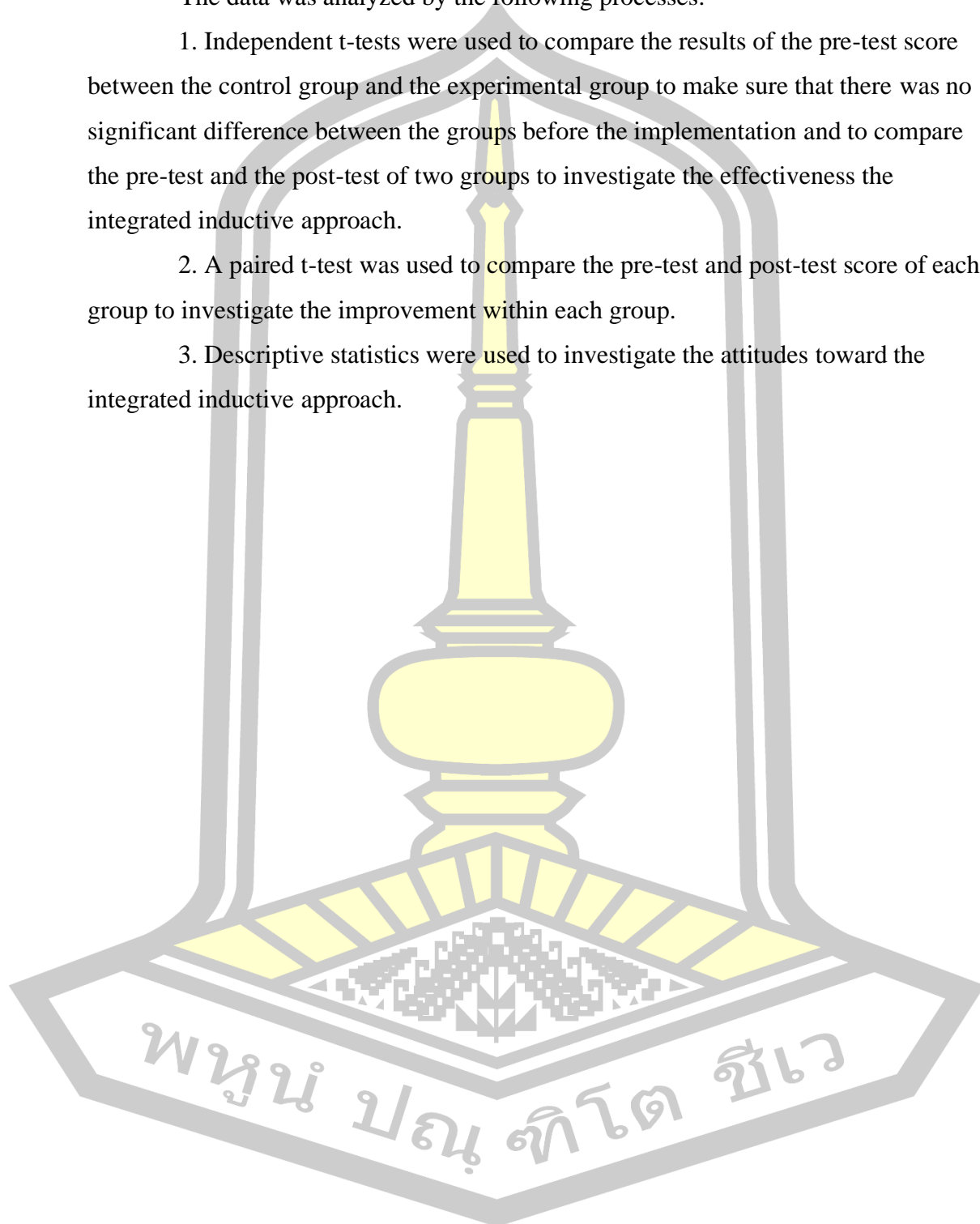
3.5 Data analysis

The data was analyzed by the following processes:

1. Independent t-tests were used to compare the results of the pre-test score between the control group and the experimental group to make sure that there was no significant difference between the groups before the implementation and to compare the pre-test and the post-test of two groups to investigate the effectiveness the integrated inductive approach.

2. A paired t-test was used to compare the pre-test and post-test score of each group to investigate the improvement within each group.

3. Descriptive statistics were used to investigate the attitudes toward the integrated inductive approach.



CHAPTER IV

RESULTS

This chapter presents the results of the study following the research questions. The results of the study are divided into two sections as follows: 1) the effects of the integrated inductive approach of the GCR task with DDL on logical connector knowledge of EFL learners and 2) learners' attitudes toward the integrated inductive approach of the GCR task with DDL in logical connector learning.

4.1 Logical connector knowledge of EFL learners

This section is to answer the research question 1: What are the effects of the integrated inductive approach of the GCR task with DDL on logical connector knowledge of EFL learners? To investigate the effects of the integrated inductive approach of the GCR task with DDL on EFL learners' logical connector knowledge, the findings from the logical connector pre-test and post-test are showed as follows.

To investigate the changes (if there was any) in the control group which were implemented with the deductive approach, a paired t-test was used to compare the results from pre-test and post-test scores. The results are presented in the tables below.

Table 5 Comparison of the control group and experimental group on pre-test and post-test scores (Paired t-test)

Group	Test	Mean	Mean different	Sig.
Control Group (N=30)	Pre-test	9.70	5.26	.000
Control Group (N=30)	Post-test	14.97		
Experimental Group (N=30)	Pre-test	9.57	8.26	.000
Experimental Group (N=30)	Post-test	17.83		

Table 5 indicates that the control group made progress during deductive grammar teaching. The mean score of this group on pre-test and post-test scores was

9.70 and 14.97 respectively. The difference of mean score between post-test and pre-test scores was 5.26. The p-value was smaller than 0.001 ($p = 0.00 < p = 0.001$). Thus, it could be concluded that the control group made progress compared with the outset of the study.

Similarly, the experimental group made significant progress at the end of the implementation. According to the mean difference of the experimental group, it presented a substantial change in the experimental group. The mean score of this group was 9.57 before the implementation and 17.83 at the end of the implementation. The difference of mean score between post-test and pre-test scores was 8.27. According to the significant level of $p = 0.000 < p = 0.001$, this indicated that the experimental group made significant progress.

To investigate the different effects of two teaching approach, post-test scores of the experimental group and control group were compared with independent t-test. The results are presented in the Table 6 below.

Table 6 Comparison of the experimental group and the control group on post-test scores (Independent t-test)

Group	Test	Mean	Mean difference	Std. Deviation	Sig. (2 tailed)
Experimental Group (N=30)	Post-test	17.83	2.86	3.668	.000
Control Group (N=30)	Post-test	14.97		2.953	

According to the results in the Table 6, the mean score of the control group on the post-test was 14.97 while the experimental group was 17.83. The mean difference between the two groups was 2.86. Since the p-value was $0.000 < p = 0.001$, it could be concluded that the experimental group developed their logical connector knowledge significantly different from the control group on the post-test. The students in the experimental group commented that discovering and constructing the logical connector rules through the integrated inductive approach brought them understanding and awareness in using logical connectors in writing. The interaction from peers and teachers along with feedbacks from presentation helped them to achieve in learning logical connectors with the integrated inductive approach.

4.2 Learners' attitudes toward the integrated inductive approach of the GCR task with DDL

The research question 2 was to investigate learners' attitudes toward the integrated inductive approach of the GCR task with DDL in learning logical connector. To present learners' attitudes, the finding from the questionnaire is presented as follows.

Table 7 The questionnaire of learners' attitudes toward the integrated inductive approach of the GCR task with DDL in learning logical connector (N = 30)

No.	Statement	Level of opinion % (N)				
		the least	less	moderate	more	the most
1.	Teacher's introduction before the lesson helped me understand the lesson much better.	0 (0)	3 (1)	6 (2)	50 (15)	40 (12)
2.	The steps in learning grammar with the approach helped me learn logical connectors systematically.	0 (0)	7 (2)	27 (8)	36 (11)	30 (9)
3.	The teacher's help was useful in learning grammar with the approach.	0 (0)	0 (0)	16 (5)	14 (4)	70 (21)
4.	The peers' assistance was helpful for me to learn with the lessons.	0 (0)	3 (1)	3 (1)	14 (4)	80 (24)
5.	The task-presentation feedbacks helped me construct my own rules.	0 (0)	3 (1)	13 (4)	34 (10)	50 (15)
6.	Without concordance lines, I could not learn logical connectors successfully with this approach.	0 (0)	0 (0)	27 (8)	40 (12)	33 (10)
7.	The concordance lines helped me identify the form, meaning, and use of the logical connectors.	0 (0)	0 (0)	17 (5)	36 (11)	46 (14)
8.	Learning logical connectors with this approach, the lesson was more interesting and challenging.	0 (0)	0 (0)	0 (0)	24 (7)	76 (23)
9.	Learning logical connector with this approach helped me improve my speaking skill.	0 (0)	10 (3)	27 (8)	40 (12)	23 (7)
10.	Learning logical connector with this approach, I had more participation in the class than the previous grammar classes	0 (0)	0 (0)	0 (0)	40 (12)	60 (18)
11.	Learning logical connector with this approach, I understand logical connectors uses and aware of using logical connectors in my writing.	0 (0)	3 (1)	7 (2)	17 (5)	73 (22)
12.	Learning logical connectors with this approach brought me confidence in using logical connectors.	0 (0)	0 (0)	7 (2)	30 (9)	63 (19)
13.	From my point, this grammar learning approach could substitute the previous	0 (0)	0 (0)	10 (3)	40 (12)	50 (15)

	grammar lessons.					
14.	This approach helped me improve my grammatical knowledge.	0 (0)	0 (0)	0 (0)	37 (11)	63 (19)
15.	Other grammar points could be learned with this grammar learning approach.	0 (0)	3 (1)	13 (4)	26 (8)	56 (17)
	Total % (N)	0 (0)	2.23 (10)	11.57 (52)	31.79 (143)	54.41 (245)

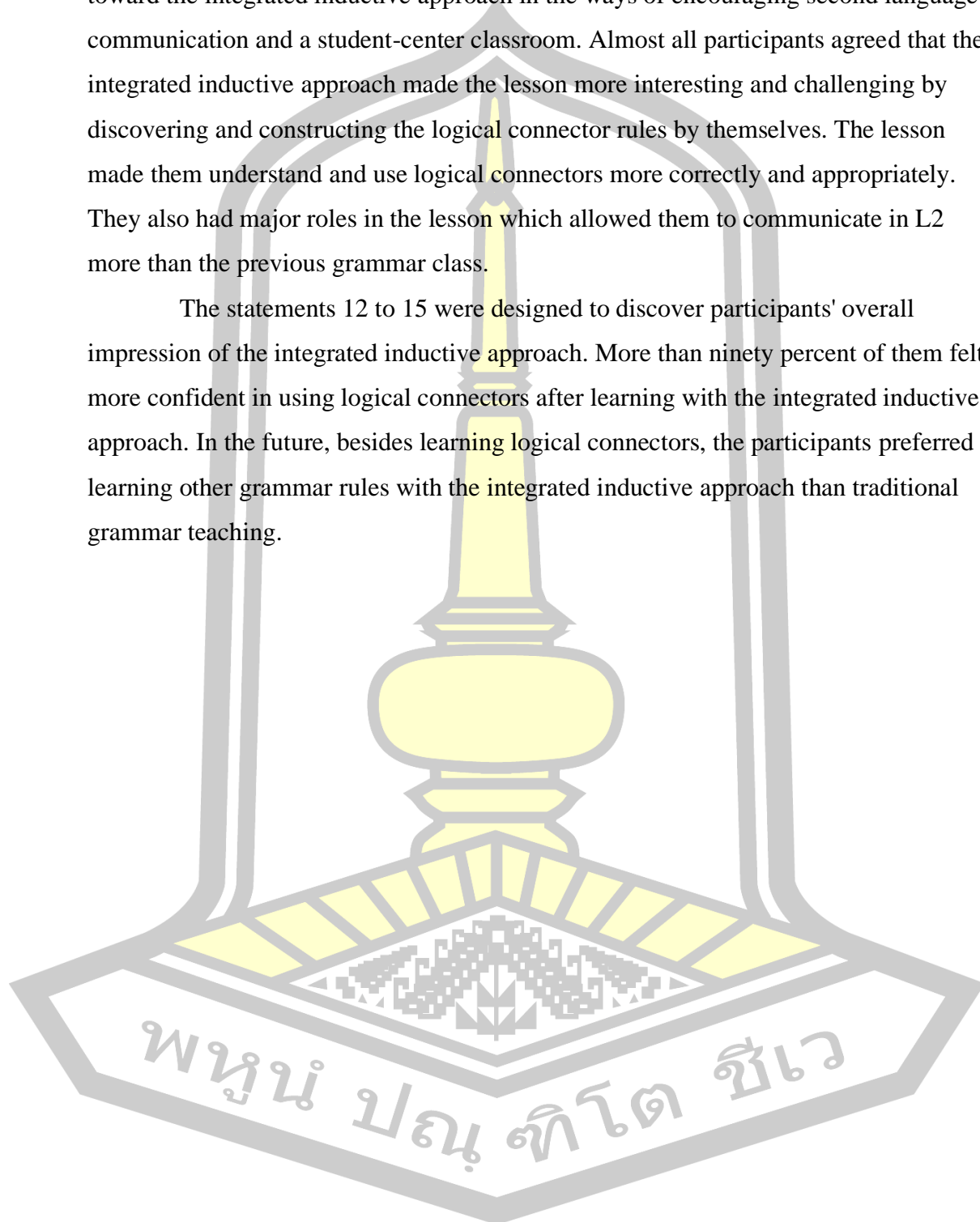
Table 7 shows that over eighty percent of participants responded to the level of 'more' and 'the most' in all items. This indicated that most participants had positive attitudes toward learning logical connectors through the integrated inductive approach. However, a few participants who responded in the level of 'less' might have difficulties in learning with the integrated inductive approach. This point is going to be raised in the discussion.

To categorize each item in a group, the statements 1 to 5 were mainly focused on the interaction patterns among students, peers, and teacher during the task. These statements aimed to investigate whether the interactions in the task helped students achieve the task and learning objectives. The results revealed that the pre-lesson session in the pre-task phase was helpful to learn with the integrated inductive approach. More than half of the participants agreed that the teacher's activities (e.g. vocabulary introduction, the target grammar point introduction, etc.) and facilitation during the task were helpful for achieving the task. Moreover, working in groups, interacting with peers led an individual to discovery and generalization of the discovered rules. The feedbacks from the class presentation helped them correct and finalize the correct understanding of the logical connectors. This point is going to be discussed with supported theories in the next section.

The statements 6 and 7 were focused on the material from the corpus – the printed concordance lines. The participants mostly agreed that the printed concordance lines were useful material to identify the form, meaning, and use of the logical connectors. This might be because of the adaptation from the previous studies suggested that original concordance lines be difficult for a low or mixed-ability group of learners. This point is going to be clarified in the section of the discussion as well.

The statements 8 to 11 were proposed to investigate participants' opinions toward the integrated inductive approach in the ways of encouraging second language communication and a student-center classroom. Almost all participants agreed that the integrated inductive approach made the lesson more interesting and challenging by discovering and constructing the logical connector rules by themselves. The lesson made them understand and use logical connectors more correctly and appropriately. They also had major roles in the lesson which allowed them to communicate in L2 more than the previous grammar class.

The statements 12 to 15 were designed to discover participants' overall impression of the integrated inductive approach. More than ninety percent of them felt more confident in using logical connectors after learning with the integrated inductive approach. In the future, besides learning logical connectors, the participants preferred learning other grammar rules with the integrated inductive approach than traditional grammar teaching.



CHAPTER V

DISCUSSION AND CONCLUSION

This chapter presents the summary of the study, discussion, limitations, implications, some recommendations which may be useful for further study, and concluding remark.

5.1 Summary of the study

The current study aimed at investigating the effects of the integrated inductive approach between the GCR task with DDL in developing the logical connector knowledge of EFL learners and their attitude toward learning through the integrated inductive approach. In the setting where the study was conducted, the logical connectors were taught with deductive grammar lessons in which forms, meanings, and uses of the logical connectors were explained explicitly by teachers. This method was known as a deductive grammar teaching approach which is normally taught by providing rules to learners with some examples and asking them to practice through exercises. Many students could understand the lesson or perform well in classroom activities, but they tended to forget it afterward. They agreed that they had problem in using logical connectors in English writing before the implementation. There were many logical connectors indicating similar logical relationships such as *while* and *however*. Most of them looked up Thai meaning of the logical connectors from bilingual dictionaries before using it. This point confirmed the causes of problems from the previous findings in the points of the lack of grammatical rule awareness, the lack of sentence formation, and the first language interference. However, they felt more confident in using the logical connector as the outcome of the implementation.

The research design was quasi-experimental study. The control group was implemented with the deductive grammar teaching while the experimental group was implemented with the integrated inductive approach on the GCR task and DDL.

The results from the pre-test and post-test scores showed that students learning logical connectors with the integrated inductive approach developed logical

connector knowledge significantly different from the control group at the at the 0.05 level of statistics. This indicated that students in the experimental group gained better development of their logical connector knowledge at the end of the implementation. The students implemented with the integrated inductive approach could discover and construct the logical connector rules (forms, meanings, and uses) by themselves more systematically with the GCR task's processes and DDL basic steps. The assistance from the teacher and peers supported their achievement and reduced difficulties they encountered during the lesson. They could talk to exchange their discoveries with peers during the lesson. At the same time, they could ask for explanation or assistance from the teacher in the class. Besides understanding the use of logical connectors, they also gained awareness and consciousness in using logical connectors. They knew forms, meanings, and uses of the logical connectors and they could apply the rules in the post-test more correctly.

The results from the questionnaire showed that characteristics of the GCR task and DDL blended made the integrated inductive approach interesting and challenging. This indicated positive attitudes toward the integrated inductive approach. The significant characteristic of the GCR task was the interactions among students, peers, and teacher during the task phases. The interactions of the teacher and students as in the pre-task phase and facilitation during the task supported students to achieve the task. The discussion in small group and interaction between peers led students to discover and generalize their own grammar rules. These interaction patterns of the GCR task did not only motivate second language communication but also enhanced the feature of discovery learning in DDL.

Using corpus-based material or printed concordance lines as one of the DDL features was a useful material to identify the form, meaning, and use of the logical connectors. Students noticed similarities and differences and generalize the rule of each logical connector. However, the difficulties students might encounter with this material could be reduced by simplifying words in concordance lines and introducing difficult words in the pre-task phase. Interaction between peer and facilitation of teacher helped these mixed-ability students feel more comfortable to learn with the corpus-based material as well.

Moreover, turning the role of teacher to be a facilitator during the task

changed a traditional grammar lesson which was controlled by the teacher to be a student-centered grammar lesson. Students gained major roles in the lesson which allowed them to communicate in L2 more than the previous grammar lessons.

Also, students felt more confident in using logical connectors after learning with the integrated inductive approach. As a result, they increased their knowledge of logical connectors and gained higher post-test scores than the control group which was implemented with the deductive grammar lessons. Besides teaching logical connectors, the integrated inductive approach was recommended as an interesting approach for other grammar rules.

5.2 Discussion

According to the results of the study, it could be concluded that the students implemented with the integrated inductive approach of the GCR task and DDL had significantly developed their logical connector knowledge. The development due to the implementation of the integrated inductive approach can be discussed based on the purposes of the study as follows.

5.2.1 The effects of the integrated inductive approach of the GCR task with DDL in developing the knowledge of logical connectors of EFL learners

The results from the pre-test and post-test scores indicated that students learning with the integrated inductive approach of the GCR task and DDL had significantly higher scores of logical connector knowledge test than the group learning with the deductive approach. This meant that the consciousness-raising activities in the integrated inductive approach outperformed the practicing activities in the deductive approach. Though the practicing activity of the deductive approach seemed to be more effective than the consciousness-raising activity of the integrated inductive approach (GCR + DDL), the results of the study revealed that the consciousness-raising activity in DDL+GCR was more effective than the practicing exercise in the deductive approach. Moreover, the results of this study comparing the effects of the integrated inductive approach of the GCR task and DDL and deductive approach also supported the previous study of Sah (2015). Sah (2015) conducting a comparative study between two grammar teaching approaches for teaching discourse

markers (DDL + PPP and DDL + III). The two grammar teaching approaches were represented to a practicing activity and a consciousness-raising activity respectively. The results from the test revealed that the consciousness raising activities in DDL integrated into III was more effective than DDL integrated into PPP to some degrees.

The results of the post-test scores indicated that the integration of DDL into other teaching approaches made it effective and applicable for the mixed-ability groups of learners. According to the suggestion of Johns (2012) who proposed the DDL approach, basic steps of DDL should be blended with other teaching approaches or modified to make it effective for a particular group of learners. Moreover, the results from the study of Dankittikul and Laohawiriyanon (2018) also suggested blending DDL with other teaching approaches. Hence, the current study designed the integrated inductive approach blending DDL into the GCR task to investigate how DDL could be applied into various contexts. The results from the post-test scores indicate that the integrated inductive approach of DDL integrated with the GCR task was more effective than the deductive approach in EFL high school learners. The students implemented with the integrated inductive approach could discover and construct the logical connector rules (forms, meanings, and uses) by themselves more systematically with the GCR task's processes and DDL basic steps. On the contrary, the students implemented with the deductive lesson plans did not construct the knowledge of logical connectors by themselves. The lack of consciousness raising activity made the integrated inductive approach outperform practicing activity in the deductive approach.

The integrated inductive approach on the GCR task and DDL brought more than logical connector basic understanding. There were several characteristics contributing from the GCR task and DDL leading the integrated inductive approach to be more effective than the deductive approach. The task in the integrated learning approach required a systematic learning processes than the passive learning process in the deductive approach. This complex process could be confirmed by the noticing hypothesis Schmidt (1990, 2001). The learners could not begin to acquire the features of logical connectors until they had become aware of its input (concordance lines). Noticing was defined as the awareness of a particular linguistic feature that occurred in the concordance lines. This could be supported by the previous studies. Fotos

(1993) conducted a study of noticing using learners performed grammar tasks or received traditional grammar lessons. The results indicated that high levels of noticing were related to proficiency development (Fotos, 1993 cited in Nassaji & Fotos, 2011). Noticing does not itself result in the acquisition, but it is an essential starting point. Gass (1997) also described a learning process that begins when learners consciously notice something in the second language that is different from what they expect or that fills a gap in their knowledge of the language. Learners must be aware that they are 'noticing' something in the input. The noticing hypothesis brings language acquisition with a usage-based perspective suggesting that the frequency of logical connectors in the concordance lines which allowed learners to increase the acquisition and awareness of the logical connector features in the concordance lines.

According to input processing proposed by VanPatten (2004), input processing refers to the mechanism used in drawing meaning from the input. VanPatten (2004) defined input processing as strategies that learners use to link grammatical forms to their meanings and functions. In the current study, the learners used the concordance lines as the input for acquisition. The features of logical connectors were proposed as a problem for acquisition in the task. This might be the ways that learners processed input because conscious learning transformed acquisition to learning. The processes above contributed pedagogical implications to the success in learning and teaching with the integrated inductive approach.

Therefore, when the learners are exposed to enough samples from a corpus, they begin to process the input, notice language features, analyze, and link the logical connectors to their forms, meanings, and functions. This process led to language acquisition and language features' awareness. However, the frequency of samples was important as it helped learners classify the data by noticing similar patterns, possible meaning, contexts where the features are frequently used.

Another theory supported the achievement of the integrated inductive approach was the constructivist theory. As in the stage of the task cycle, students identified, analyzed, and summarized the forms, meanings, and uses of logical connectors from the concordance lines. Students identified the forms and patterns of the logical connectors by noticing their features in the input they expose to. Then they used a strategy of input processing to link grammatical forms to their meanings and

functions. Finally, they inductively constructed the usage of language structures or words and formulate the rules from the concordance data. This cognitive process in the integrated inductive approach could contribute to not only understanding of the logical connectors rules but also consciousness in using the logical connectors.

Another characteristic contributing to the success of the integrated inductive approach was the material used in the lesson. The frequency of input from many concordance lines were helpful for logical connector discovery. It helped them notice, analyze, and generalize grammar rules. This could be supported by the input hypothesis along with the natural order of Oller & Krashen (1988). The input hypothesis claims that human acquires language in only one way either by understanding messages or by receiving an enough 'comprehensible input'. The hypothesis progresses along with the natural order. Logical connectors were difficult for EFL learners to acquire. These rules can be understood with the help of context which includes extra-linguistic information and previous acquired linguistic competence (Oller & Krashen, 1988). In the current study, the concordance lines from the corpus were an input which were the samples of the target language. When the learners exposed the samples of concordance lines, it led to the processes of language acquisition.

Nevertheless, the major concern according to the previous studies of this material was whether it was appropriate for low or mixed-proficiency learners as the data from the corpus was authentic, and it first effectively used with advanced learners. The concordance lines as material in grammar lessons might increase difficulties or distract students in achieving the lesson objectives. However, the concordance lines in the current study were carefully selected and simplified appropriately for the level of learners' language proficiency. Supported by the theory of textual enhancement of Oller & Krashen (1988) and the suggestion in the study of Dankittikul and Laohawiriyanon (2018), the data could be simplified and prepared in a printed version to be appropriate for learners' proficiency. Using the technique in the textual enhancement theory, the concordance lines were enhanced by boldfacing and color coding.

Besides the frequency and simplification of concordance lines leading to the success of the integrated inductive approach, the interactions of the teacher and peers

also reduced the difficulties while the students perform the task. According to the questionnaire results statements number 3, 4, and 5, the role of the teacher as a facilitator who introduced difficult words in the pre-task phase and facilitated during the task helped students perform the task successfully. This session helped them prepare themselves and reduced difficulties they might face in learning material. Group discussion with peers encouraged second language communication and allowed them to share what they discovered. Furthermore, class presentation was a platform where each group shared their points which helped the class summarize the final rule easier. This feature of the integrated inductive approach could be supported the feature in a task that led the task to succeed. The feature was defined by Prabhu (1987) that task was a piece of classroom work involving process and interactions among learners, peers, and learning materials that encouraged learners to discover the rules for the logical connectors to achieve a task's goal. Thus, interactions during the task made learning grammar with DDL more flexible and supported the achievement in learning the logical connectors with this integrated inductive approach.

Moreover, the integration of the GCR task and DDL created a new dimension of learning grammar to each approach. The GCR task changed the characteristic of discovery learning in DDL. DDL required only one pattern of interaction (between learners and concordance lines) that students worked individually with the corpus data. This might be a critical issue for implementing DDL into classroom context with low or mixed-ability learners. However, according to the characteristics of the GCR task, it turned the basic discovery learning of DDL to be more interesting. Working in a small group, discussing the grammar point, and using L2 in meaningful context contribute to the effective learning environment. Similarly, DDL also contributed the useful authentic material to the grammar discovery learning task. This useful material could be supported by the study of Uysal et al. (2013) suggested that the natural and rich quality of concordances from the corpus can serve as good supplementary materials in teaching grammar. Moreover, the corpus data was authentic examples of language by native speakers illustrating various use of a certain structure or item.

5.2.2 Learners' attitude toward learning logical connectors with the integrated inductive approach of the GCR task with DDL

The results from the questionnaire showed that learners had positive attitudes toward learning logical connectors through the integrated inductive framework. This positive attitude might be because of many factors showed in the following discussion.

The questionnaire results revealed that students were satisfied with the discovery lesson using concordance lines as materials of the integrated inductive approach. They agreed that concordance lines helped them understand the forms, meanings, and uses of the logical connector better from concordance samples. They felt more confident in using logical connectors after discovering the rules of logical connectors from concordance lines in the integrated inductive approach. This confirmed the previous study of Lin and Lee (2015) and Phoocharoensil (2012) which revealed that learners had a positive attitude toward learning grammar through concordance lines.

Moreover, students had positive attitudes toward the integrated inductive approach. Learners viewed the integrated inductive approach as an effective and trendy model for grammar learning. It facilitated the internalization of grammar involving discovery learning. Instead of the deductive approach, the students were also interested in learning other grammar rules with the integrated inductive approach in the future. This result supported the previous studies of Boontam and Phoocharoensil (2018) and Nugraha et al. (2017) which revealed that learning grammar with concordance lines was a trendy method. It was not only effective in terms of developing grammar consciousness and vocabulary knowledge, but it was an effective and creative method for grammar teaching. Almost all participants agreed that the integrated inductive approach made the lesson more interesting and challenging by discovering and constructing the logical connector rules by themselves. The lesson made them understand and use logical connectors more correctly and appropriately. They also had major roles in the lesson which allowed them to communicate in L2 more than the previous grammar class. Students felt more confident in using logical connectors after learning with the integrated inductive approach. In the future, besides learning logical connectors, the participants preferred

learning other grammar rules with the integrated inductive approach than traditional grammar teaching.

Interactions between the teacher and peers during the task brought positive attitudes toward the integrated inductive approach. This point could be supported by the features of a task defined by Prabhu (1987) as mentioned in the previous discussion. These interactions made a normal DDL lesson more interesting. The pre-task phase was helpful to learn with the integrated inductive approach. Then, the group discussion and feedbacks from the class presentation helped them correct and finalize the grammar rule. Students agreed that the teacher's activities (e.g. vocabulary introduction, the target grammar point introduction, etc.) and facilitation during the task were helpful for achieving the task. Moreover, working in groups, interacting with peers led an individual to discovery and generalization of the discovered rules. The feedbacks from the class presentation helped them correct and finalize the correct understanding of the logical connectors. This could be claimed with the previous study of Amirian and Sadeghi (2012) investigated the effectiveness and learners' perception toward the GCR task compared with traditional grammar teaching. The results presented that learners taught with the GCR task significantly outperformed the group taught with traditional grammar instruction.

Furthermore, students agreed that the integrated inductive approach improved their communicative skills. They also had major roles in the lesson which allowed them to communicate in L2 more than the previous grammar class. The majority agreed that the integrated inductive approach made the lesson more interesting and challenging by discovering and constructing the logical connector rules by themselves. The lesson made them understand and use logical connectors more correctly and appropriately. They also had major roles in the lesson which allowed them to communicate in L2 more than the previous grammar class.

Nonetheless, some students disagreed that the integrated inductive approach encouraged much second language communication because they were not forced to use the second language all the time. They could switch to L1 in the situation when they found it difficult to communicate in L2. This could be claimed with one of the GCR task's limitations by Ellis (2003). Ellis (2003) stated that as the goal of the task is grammar discovery in a meaningful context, learners should not be overly

distracted by difficulties in terms of language proficiency. However, the class could reach the objectives of the lesson discovering the rules for logical connectors.

However, a few participants who responded in the level of 'disagree' might have difficulties in learning with learning material. This showed that the integrated inductive approach with corpus materials might not appropriate for their learning style or proficiency level. The first challenge of DDL for low-proficiency learners was that DDL was not suitable with their learning style as in the studies of Hunston (2002) and Liu and Lei (2017). However, the current study reduced this limitation by group discussion, class presentation, and material simplification as the suggestions in the study of Dankittikul and Laohawiriyanon (2018).

5.3 Implications

According to the results of this study, it contributed to the new teaching approach for teaching and enhancing logical connector knowledge of EFL learners. Moreover, in the future, this integrated inductive approach would be applied to other grammar points that had few rules governing their use. The integrated inductive approach created a new aspect of grammar learning that allowed students to learn grammar through a communicative task and authentic materials from corpus.

Besides, teacher's facilitation and peers' interaction and assistant reduced difficulties in learning activities, especially, in the contexts where learners were different in terms of background knowledge and language proficiency. At the end of the lesson, there were activities to review and practice the target grammar to ensure that the students achieve the lesson's objectives. This could contribute a new dimension of grammar learning in which students agreed that it was interesting and make the grammar lesson more active.

5.4 Limitations

Although the results of the study indicated that the study achieved the purposes, there were few limitations that might affect the outcomes of the study.

The continuation of the learning period was one of the limitations of this study. In the school where the study was conducted, the sixty-minute class period for English subject were separated on two days while the lesson required two periods for implementation. The first period was for pre-task and task-phase; hence, before the

other period began for language focus phase, teachers needed to review the points from the two previous phases.

Time constraint was another limitation in the current study. In the stage of the report, due to the time limitation, each group was randomly selected to present their discovery in front of the class. However, from the observation at this stage, each group shared different points raising the issues leading to the class to discuss for clarification from peers and the teacher. So, allowing all groups to present in front of the class would be a more effective platform for sharing the points of the target grammar discovery. Additionally, the experimental period in the study was also shorted due to COVID-19 pandemic.

The limited number of concordance lines from the corpus sometimes was enough for discovering the use of the logical connectors, but it was not enough to raise various points for grammar discussion. As the best time of the lesson was the discussion, each group discovered from the same concordance examples. Sometimes they came up with the same points from the same pieces of evidence. The discussion could be more effective with various samples of logical connectors.

5.5 Recommendations for further study

The finding of the study generated some recommendations for further study as follows.

1. There should be a delayed post-test to investigate long-term memory and learning retention. One of the salient characteristics in the integrated inductive approach is consciousness. To investigate the differences of this integrated inductive approach and the traditional approach in this aspect would support the point that the integrated inductive approach of the GCR task and DDL is effective to teach logical connectors.

2. Two comparative teaching approaches are different in terms of classroom interaction. Group discussions between peers who have different background knowledge may reduce anxiety and contribute to success in learning. Accordingly, there should be a future study focusing on other factors contributing to the achievement of the integrated inductive approach.

3. Students should be introduced a corpus query in order to be able to access

online concordance data for additional examples in the class. The various examples from online corpus would raise different grammar issues which the students could share and discuss with peers.

4. Students should be arranged to work in different groups. The most important thing to consider when applying the lesson to the mixed-ability group is the equal opportunity that all students can learn with peers. Teacher needs to ensure that the group are arranged appropriately with students' background knowledge.

5. The class duration for teacher talk time should be reduced. Especially, in the pre-task phase, the time spent in this session can be reduced asking students to look up words' meaning from the dictionary instead of introducing them in this phase. Moreover, the students should be more encouraged to use L2 in discussion and presentation. The teacher may introduce the guideline expressions which are useful for doing the task.

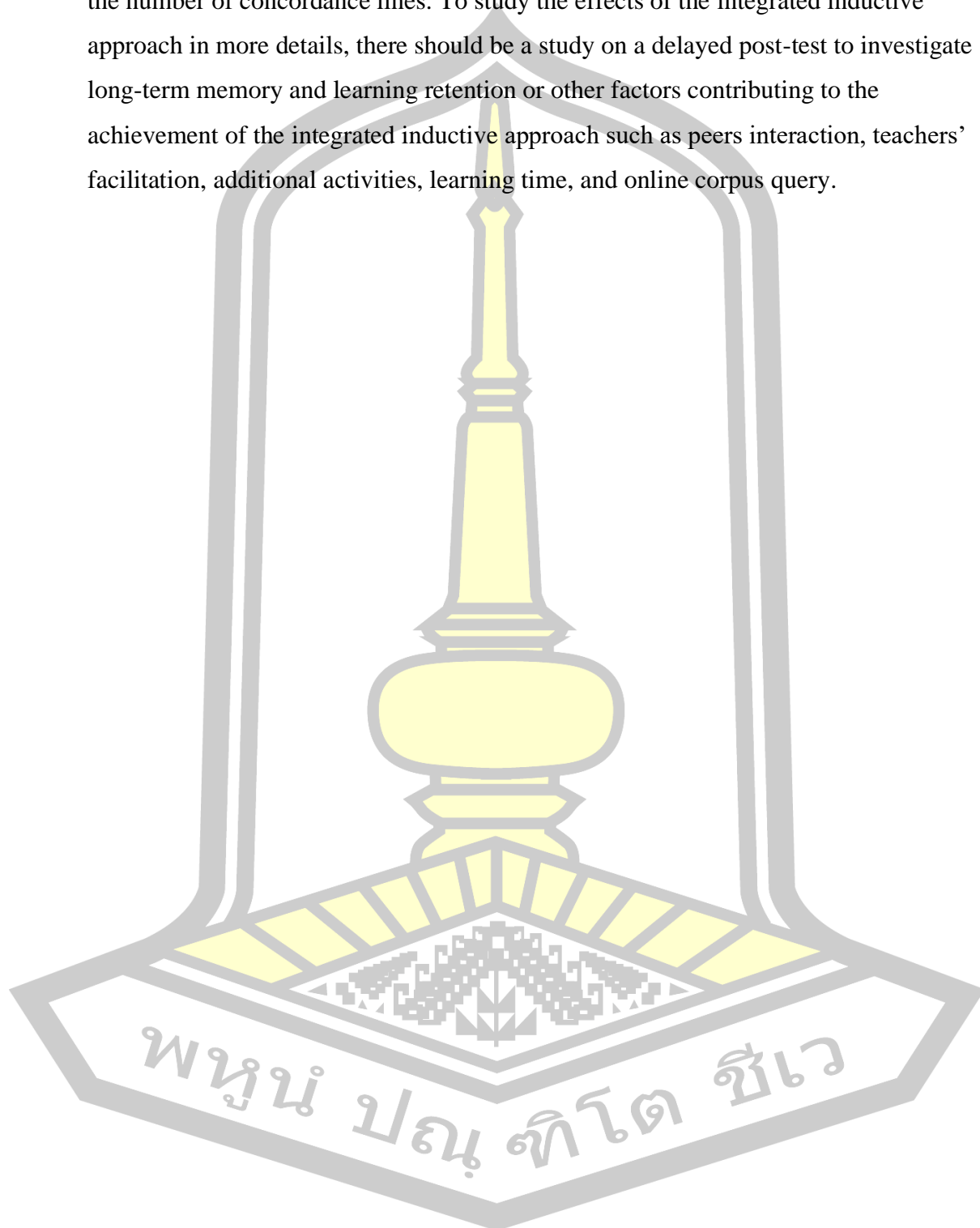
6. There should be the study of DDL integrated into other teaching approaches or activities that suit with learning styles of students. The new approach would be an alternative way of communicative grammar teaching. Besides grammatical knowledge assessment, there should be an assessment on other skills such as speaking skill and writing skill.

5.6 Concluding remark

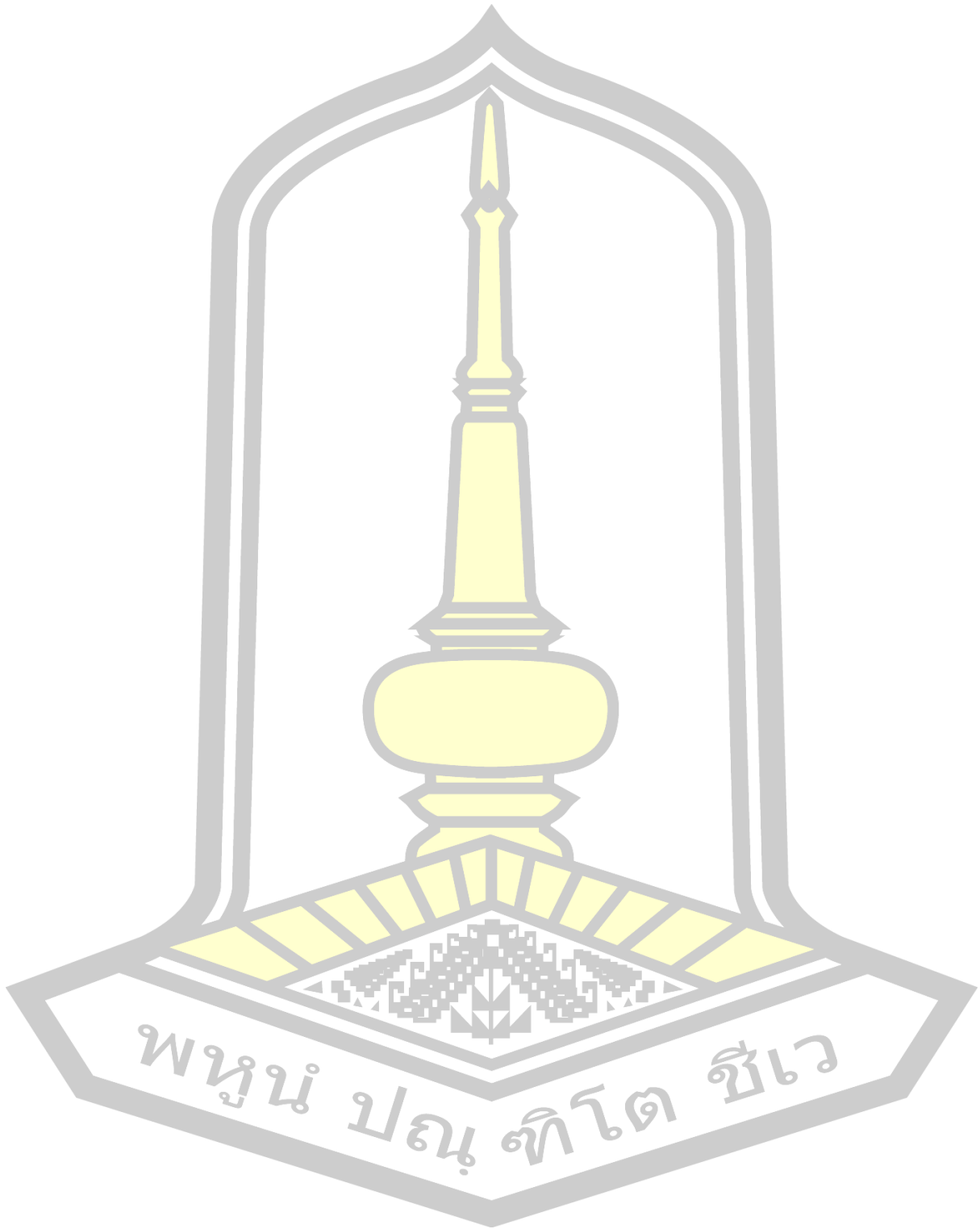
The current study aimed at investigating the effects of the integrated inductive approach of the GCR task with DDL in developing the logical connector knowledge of EFL learners and their attitudes toward learning through the integrated inductive approach. The results from the integrated inductive approach implementation revealed that students gained the development of their logical connector knowledge at the end of the implementation and had positive attitudes toward the integrated inductive approach. The significant characteristics of the GCR task and DDL did not only motivate second language communication but also enhance the feature of discovery learning. In conclusion, this study contributed the new teaching approach for teaching and enhancing logical connector knowledge of EFL learners. This was a new dimension of grammar teaching.

The future study, however, should consider the issues which may affect the

results of the study such as the continuation and constraint of the learning period and the number of concordance lines. To study the effects of the integrated inductive approach in more details, there should be a study on a delayed post-test to investigate long-term memory and learning retention or other factors contributing to the achievement of the integrated inductive approach such as peers interaction, teachers' facilitation, additional activities, learning time, and online corpus query.



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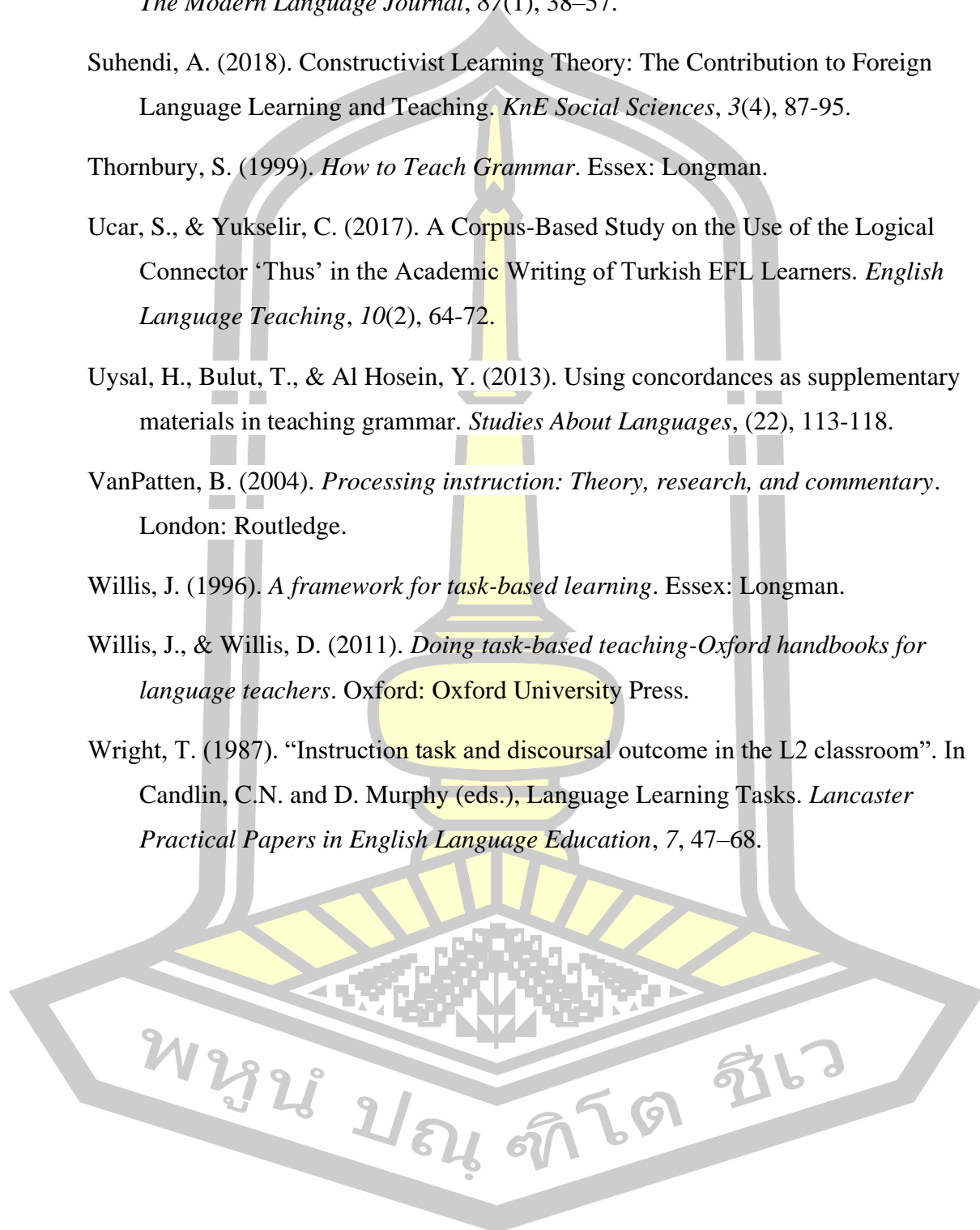
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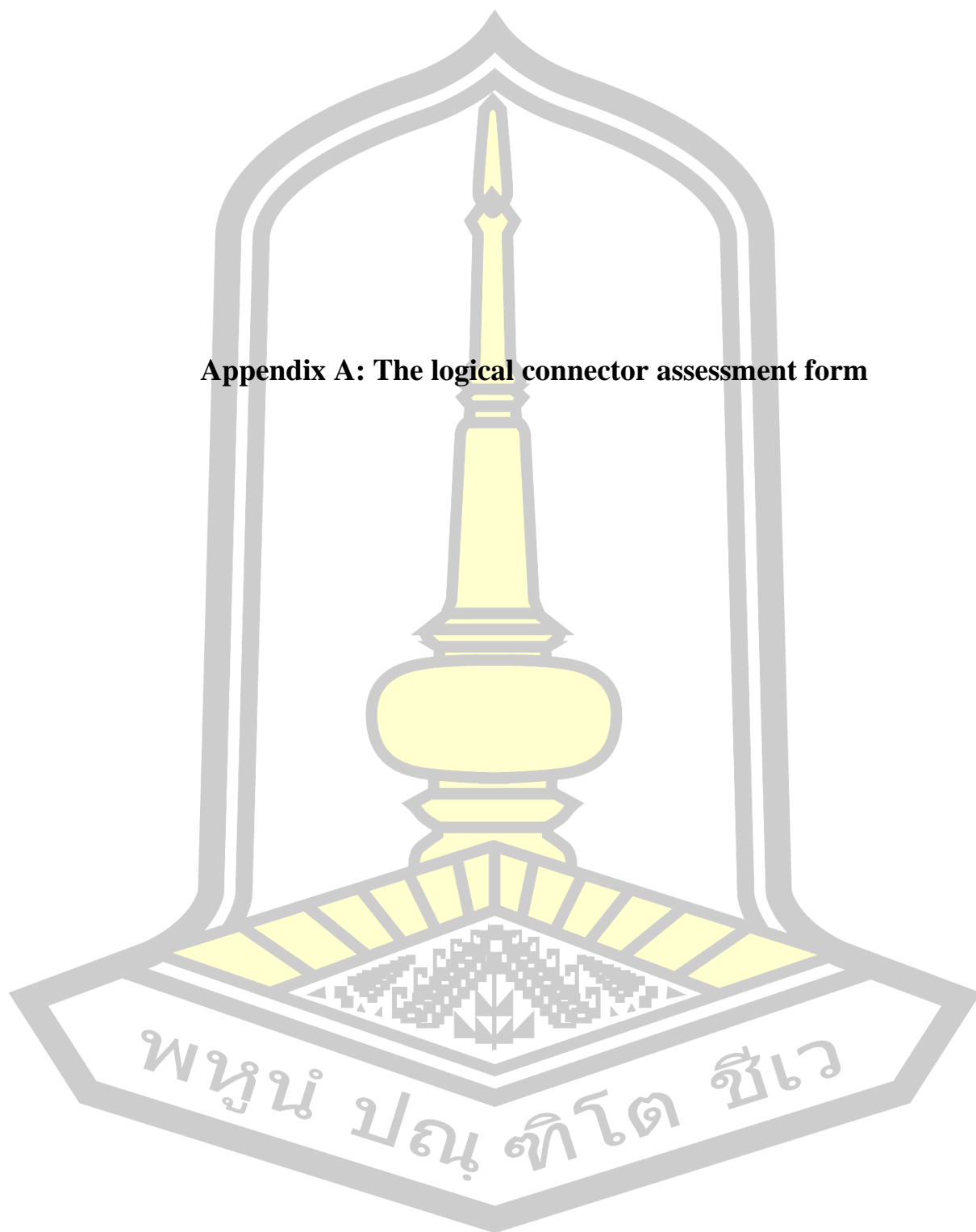
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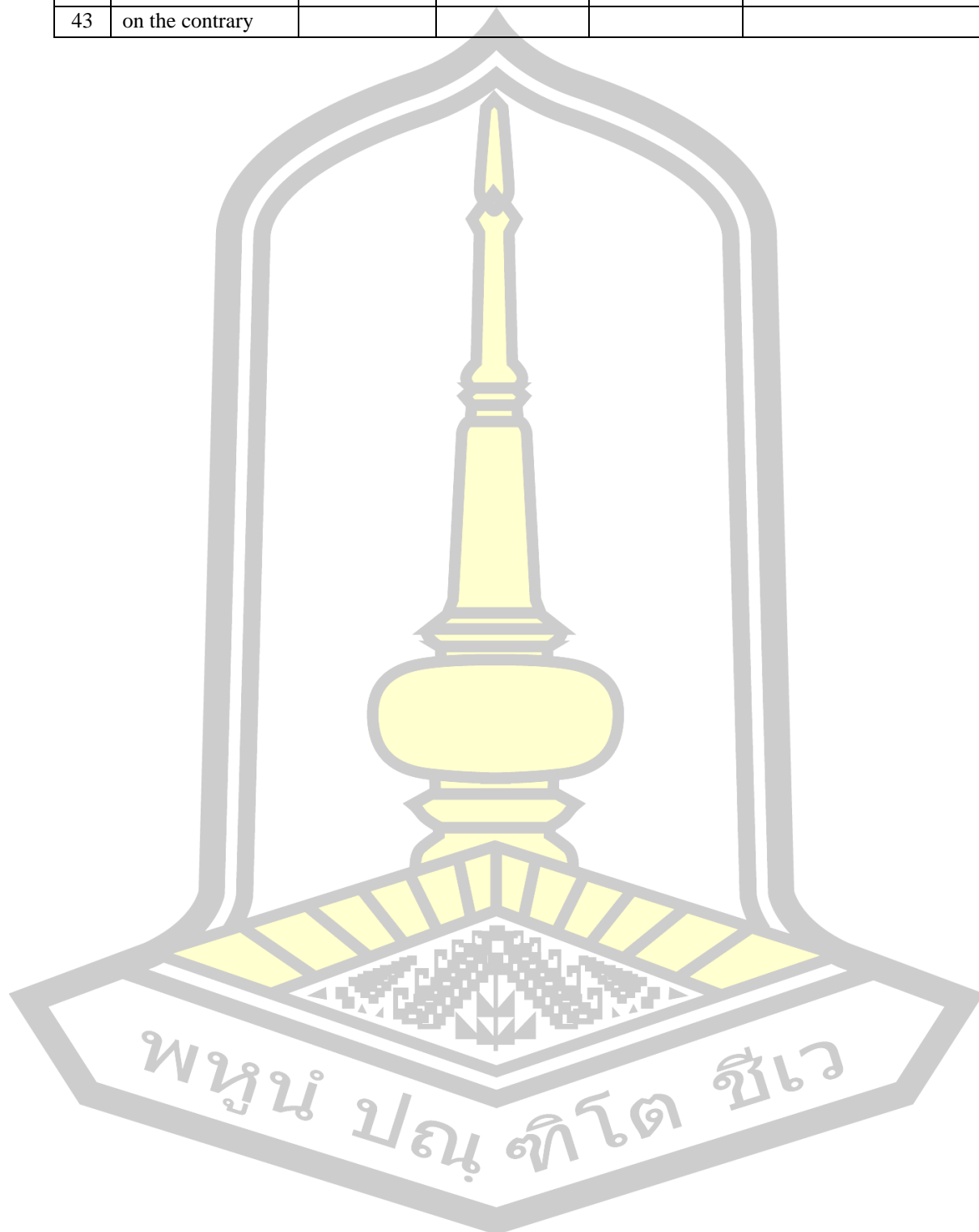


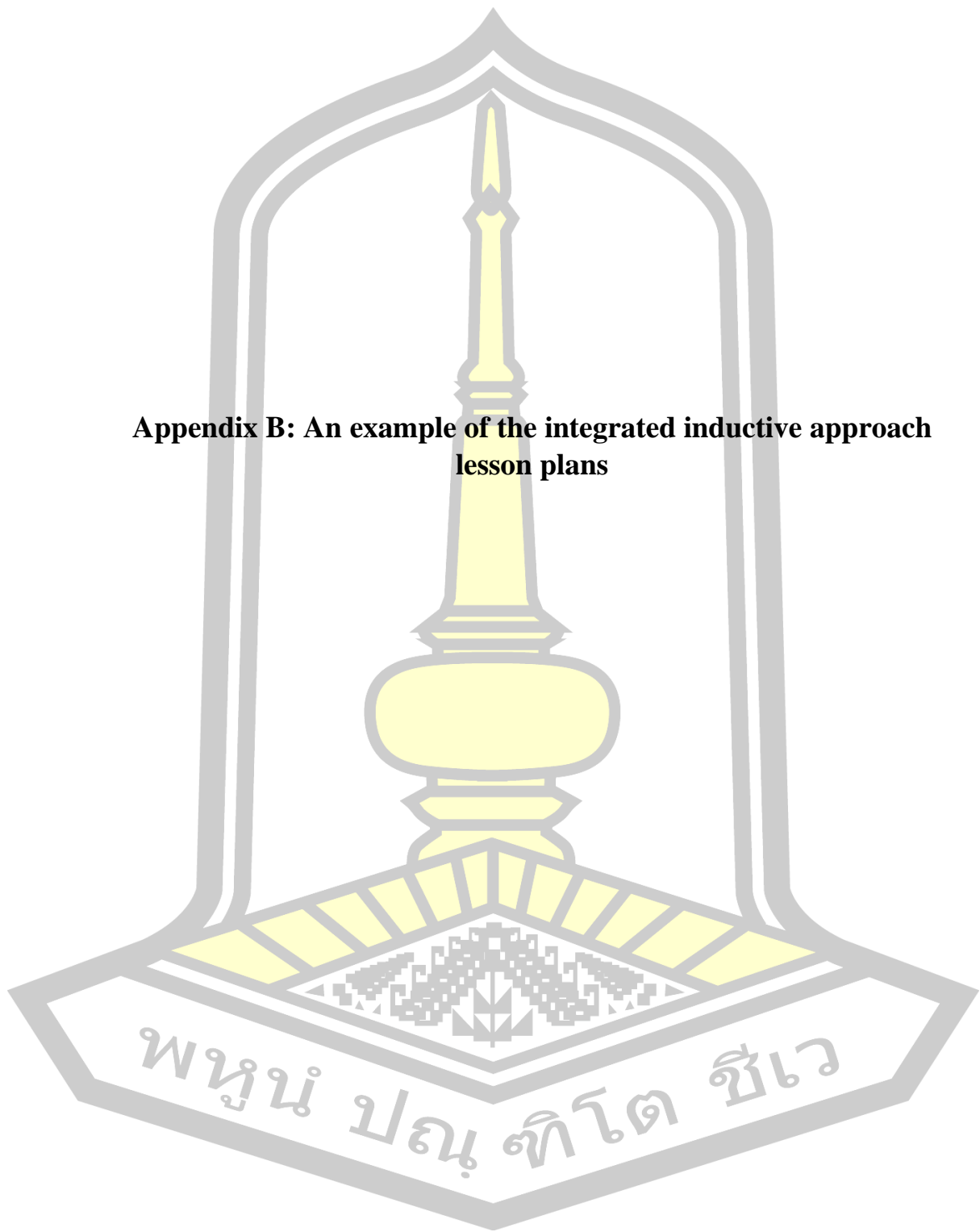
Appendix A: The logical connector assessment form



แบบประเมินความรู้พื้นฐานคำเชื่อมความภาษาอังกฤษ					
Logical Connector Assessment Form					
ที่ No.	คำเชื่อม Logical Connectors	ข้าพเจ้าไม่เคยได้ยิน หรือเห็นคำนี้มา ก่อน I don't know it.	ข้าพเจ้าเคยได้ยินหรือ เห็นคำนี้แต่ไม่แน่ใจ มากนัก I think I know it, but I'm not sure.	ข้าพเจ้ารู้จักคำนี้และ แน่ใจว่าใช้ถูก I know it, and I can use it.	ถ้ารู้และมั่นใจ โปรดเขียนตัวอย่างประโยค Write example sentence
1	however				
2	while				
3	though				
4	although				
5	yet				
6	therefore				
7	thus				
8	as well				
9	in fact				
10	despite				
11	in order to				
12	unless				
13	due to				
14	eventually				
15	otherwise				
16	as a result				
17	in addition				
18	for instance				
19	instead of				
20	nevertheless				
21	whereas				
22	on the other hand				
23	even though				
24	so that				
25	hence				
26	unlike				
27	similarly				
28	moreover				
29	in other words				
30	furthermore				
31	in spite of				
32	consequently				
33	besides				
34	accordingly				
35	in contrast				
36	namely				
37	likewise				
38	owing to				
39	in order that				
40	in summary				

41	since				
42	as a result of				
43	on the contrary				





Appendix B: An example of the integrated inductive approach lesson plans

Lesson Plan I

The Integrated Inductive Approach on GCR Task and DDL in Enhancing Thai EFL Learners' Logical Connector Knowledge

Level: Matthayomsuksa 6 Semester: 2/2019

Date..... Time:

- 1. Topic:** Logical connectors for cause-effect (due to / in order to)
- 2. Instructor:** Rungpech Petcharinphan
- 3. Length of Time:** 120 minutes
- 4. Learning Objectives:** Upon completion of the lesson, students will be able to
 1. Analyze the concordance lines and summarize the rule of the logical connectors - 'due to' and 'in order to'.
 2. Explain the differences and similarities of the logical connectors - 'due to' and 'in order to' - through class presentation.
 3. Correctly use the target logical connectors - 'due to' and 'in order to'.

5. Learning standard:

Standard F1.1 G10-12/4

Identify the main idea, analyze the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration.

Standard F1.2 G10-12/4

Speak and write appropriately to ask for and give data, describe, explain, compare and express opinions about matters/ issues/news and situations heard and read.

Standard F1.1 G10-12/3

Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read.

6. Contents

Vocabulary: refurbishment, legislation, contradiction, shortage, colleague, conscious, monogamy, reinforce, identify, prudent, obtain, kennel

Structure: due to, in order to

Example: The train was running approximately two hours late due to a broken rail at Northallerton.

I had gone for coffee in the student room in order to avoid my colleagues.

7. Teaching and Learning Activities

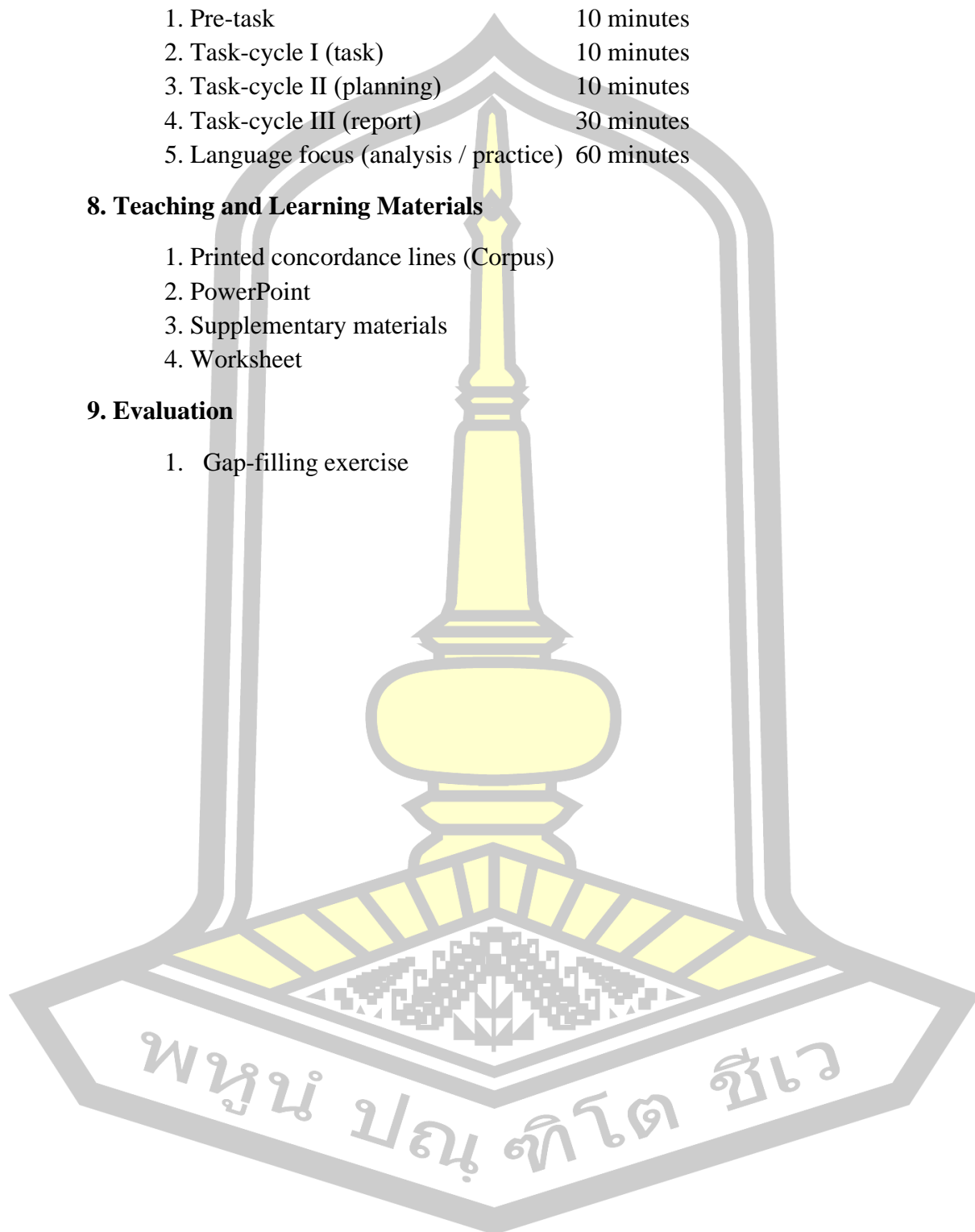
- | | |
|---|------------|
| 1. Pre-task | 10 minutes |
| 2. Task-cycle I (task) | 10 minutes |
| 3. Task-cycle II (planning) | 10 minutes |
| 4. Task-cycle III (report) | 30 minutes |
| 5. Language focus (analysis / practice) | 60 minutes |

8. Teaching and Learning Materials

1. Printed concordance lines (Corpus)
2. PowerPoint
3. Supplementary materials
4. Worksheet

9. Evaluation

1. Gap-filling exercise



10. Teaching procedures

Time (Mins)	Activity	Procedures	Aims / Objective	Materials	Interaction pattern
10	Pre-task	<ol style="list-style-type: none"> 1. Explain the objective of the lesson to students. 2. Introduce the logical connectors (due to / in order to) as the target structure of the lesson. (GCR + DDL) 3. Provide the language input – printed concordance lines as the samples of the logical connectors in context. (DDL) 4. Introduce useful words, phrases, or expressions. (GCR) 5. Ensure learners understand task outcomes. (GCR) 	<ol style="list-style-type: none"> 1. To introduce the lesson 2. To activate students' background knowledge about the target logical connectors (due to / in order to) 3. To reduce difficulties students may encounter during the task 	<ol style="list-style-type: none"> 1. PPT Slide 2. Printed concordance lines – due to / in order to 	Teacher - Student

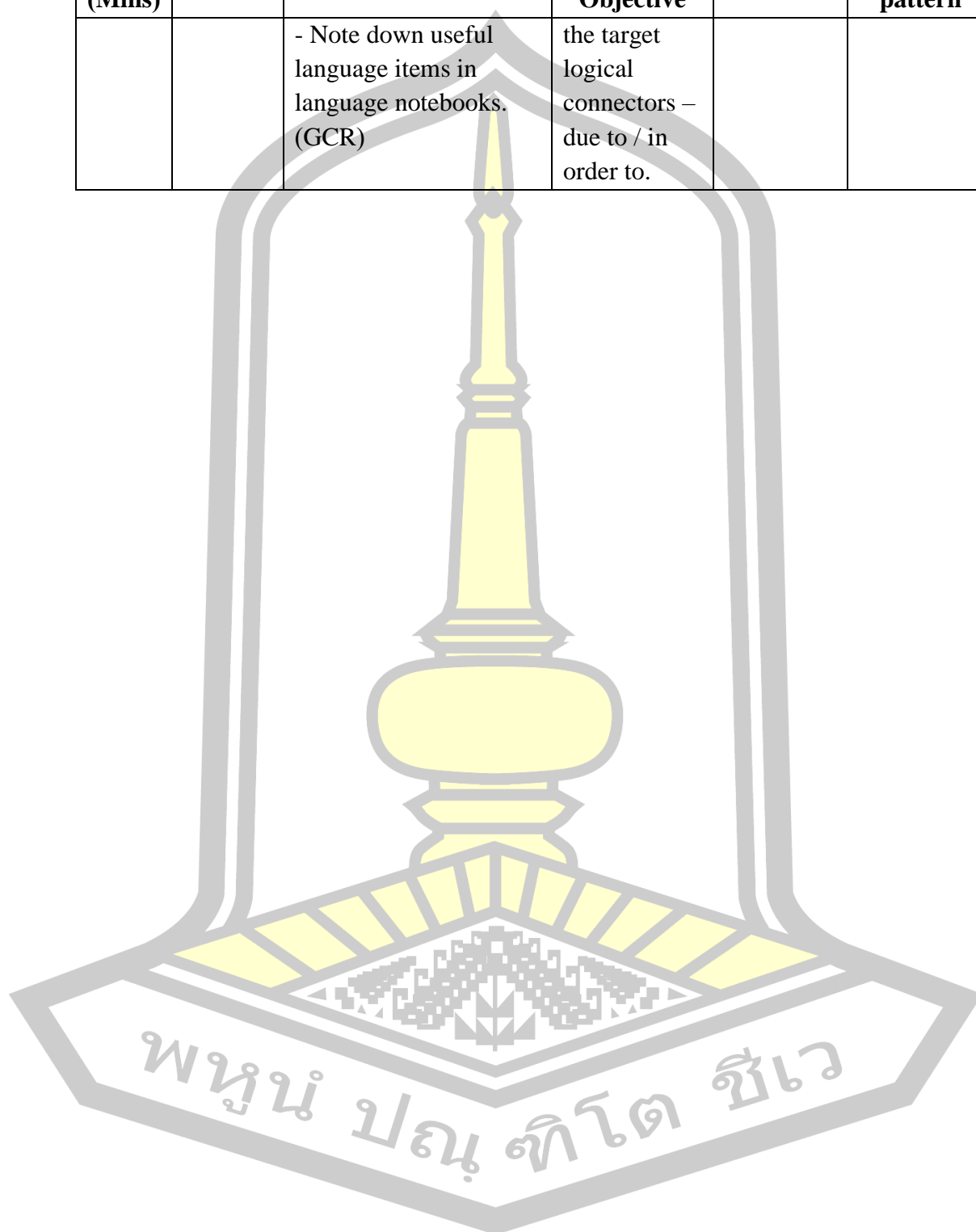
Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
50	Task Cycle	<p>Task</p> <p>Student Role</p> <ul style="list-style-type: none"> - Analyze the concordance lines to identify the form, meaning, and use of the logical connectors – due to / in order to - in small groups. (GCR + DDL) <p>Teacher Role</p> <ul style="list-style-type: none"> - Act as a monitor and encourages students to use L2 in the discussion. (GCR) - Allow students to switch to L1 when they feel uncomfortable to use L2 to express complex ideas. (GCR) 	<ol style="list-style-type: none"> 1. To encourage second language communication through group discussion. 2. To let students read and analyze data by their own ways. 	1. Printed concordance lines – due to / in order to	Student - Student

Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
		<p>Planning</p> <p>Student Role</p> <ul style="list-style-type: none"> - Prepare to report the class how they have done the task and what they have discovered. (GCR) <p>Teacher Role</p> <ul style="list-style-type: none"> - Ensure the purpose of the report is clear. (GCR) - Act as a language adviser on task presentation, not the logical connectors. (GCR) - Help students practice oral reports or organize written presentation. (GCR) 	<p>1. To let students summarize the rule of their groups and then prepare to present to the whole class.</p>		<p>Student - Student</p>

Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
		<p style="text-align: center;">Report</p> <p>Student Role - Present their spoken report in L2 to the class. Students can switch to L1 when they feel uncomfortable to use L2 to express complex ideas or when they need to respond to difficult issues. (GCR + DDL)</p> <p>Teacher Role - Act as a chairperson who gives brief feedback on presentation. (GCR) - Select the points from each presentation which will contribute to the summary of the target logical connectors in the next stage. (GCR + DDL)</p>	<p>1. To provide an opportunity for students to practice their communication skill through class presentation.</p> <p>2. To highlight the points from each group guiding students to the correct target rule.</p>		Teacher - Student
60	Language Focus	<p style="text-align: center;">Analysis</p> <p>Student Role - Summarize form, meaning, and use of the target logical connectors. (GCR + DDL)</p>	1. To encourage students to summarize the correct target rule.		Teacher - Student

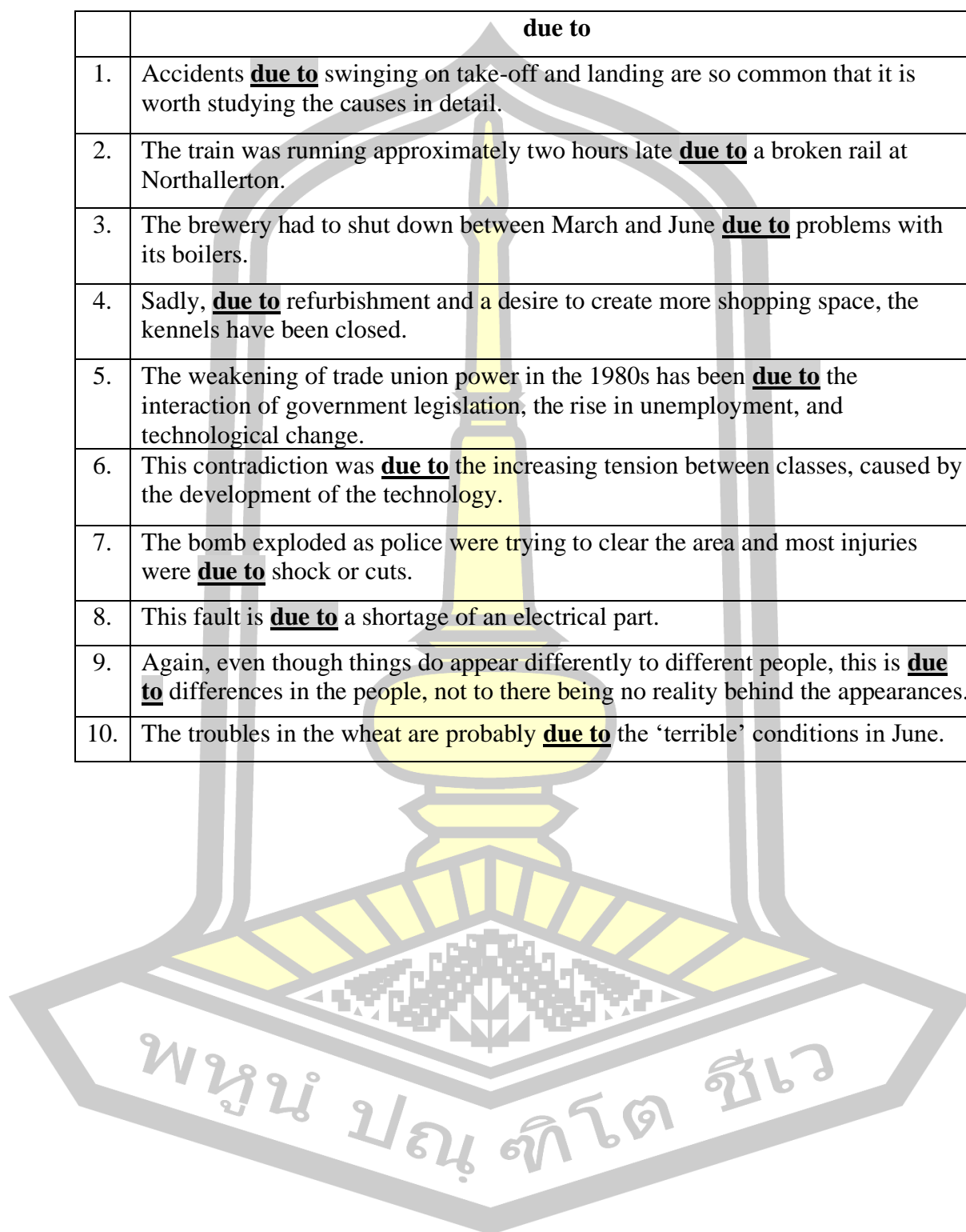
Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
		<ul style="list-style-type: none"> - Ask about other features they have noticed during the task phase such as vocabulary, collocation, grammatical structure. (GCR) <p>Teacher Role</p> <ul style="list-style-type: none"> - Review the brief each presentation to the class. (GCR + DDL) - Lead learners to notice language items from the report stage. (GCR + DDL) - Bring other useful words, phrases, and patterns to learners' attention. (GCR + DDL) 	<p>2. To provide an opportunity for students to learn new words, collocation, or other grammatical features which they have noticed in the task.</p>		
		<p style="text-align: center;">Practice</p> <p>Teacher Role</p> <ul style="list-style-type: none"> - Conduct practice activities with gap-filling exercise to ensure that students understand the rules and use the target logical connectors correctly. (GCR) <p style="text-align: center;">Student Role</p> <ul style="list-style-type: none"> - Practice the use of the target logical connectors. (GCR + DDL) 	<p>1. To provide more opportunity for students to practice using the target logical connectors</p> <p>2. To ensure that students understand</p>	<p>Gap-filling exercise Whiteboard</p>	<p>Teacher - Student</p>

Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
		- Note down useful language items in language notebooks. (GCR)	the target logical connectors – due to / in order to.		



Concordance lines

	due to
1.	Accidents due to swinging on take-off and landing are so common that it is worth studying the causes in detail.
2.	The train was running approximately two hours late due to a broken rail at Northallerton.
3.	The brewery had to shut down between March and June due to problems with its boilers.
4.	Sadly, due to refurbishment and a desire to create more shopping space, the kennels have been closed.
5.	The weakening of trade union power in the 1980s has been due to the interaction of government legislation, the rise in unemployment, and technological change.
6.	This contradiction was due to the increasing tension between classes, caused by the development of the technology.
7.	The bomb exploded as police were trying to clear the area and most injuries were due to shock or cuts.
8.	This fault is due to a shortage of an electrical part.
9.	Again, even though things do appear differently to different people, this is due to differences in the people, not to there being no reality behind the appearances.
10.	The troubles in the wheat are probably due to the 'terrible' conditions in June.



Concordance lines

	in order to
1.	I had gone for coffee in the student room in order to avoid my colleagues.
2.	They have to make the system work, of course, but in order to do this, they do not have to be conscious of its nature.
3.	In order to succeed in their desire to pass on their property to their children, men first introduced the rule of monogamy and thus brought about the first great change.
4.	I bought myself a mug of tea at the counter in order to pay for something for a change, then I sat and waited for Kathleen.
5.	It is important to try and keep in practice in order to reinforce all the things which have been learned during the pre-solo training.
6.	In order to ensure that enough glycogen is present for training, carbohydrates should make up approximately half of your daily diet.
7.	This means that the opponent always has to step forwards in order to make an attack, thus warning you well in advance.
8.	In order to teach the interpretation of a literary text, we must be prepared to teach the cultural text as well.
9.	The gardener takes as much care with his produce once picked as when growing, and saves seed in order to obtain plants for free
10.	Fans dress carefully in order to identify themselves within their group.

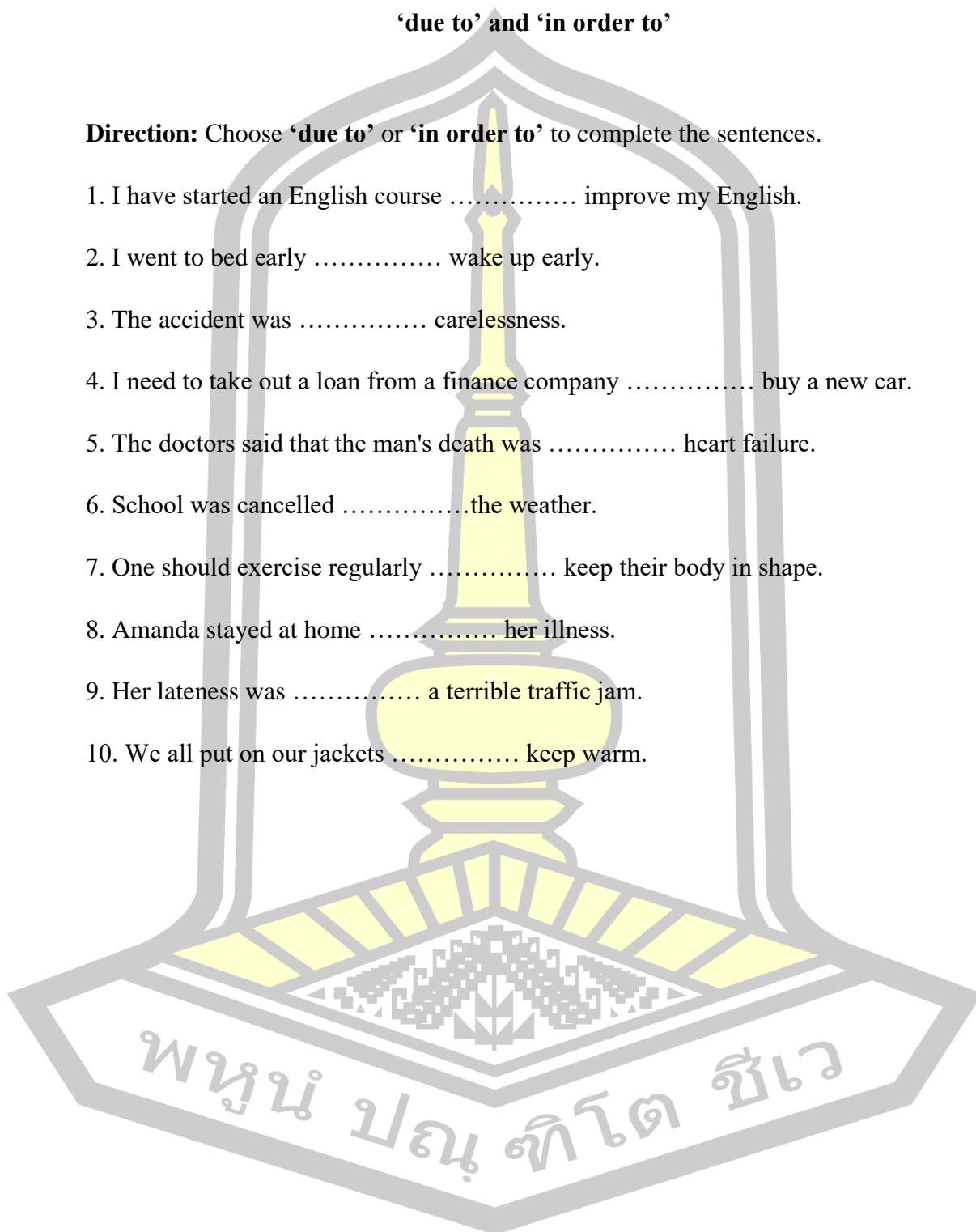


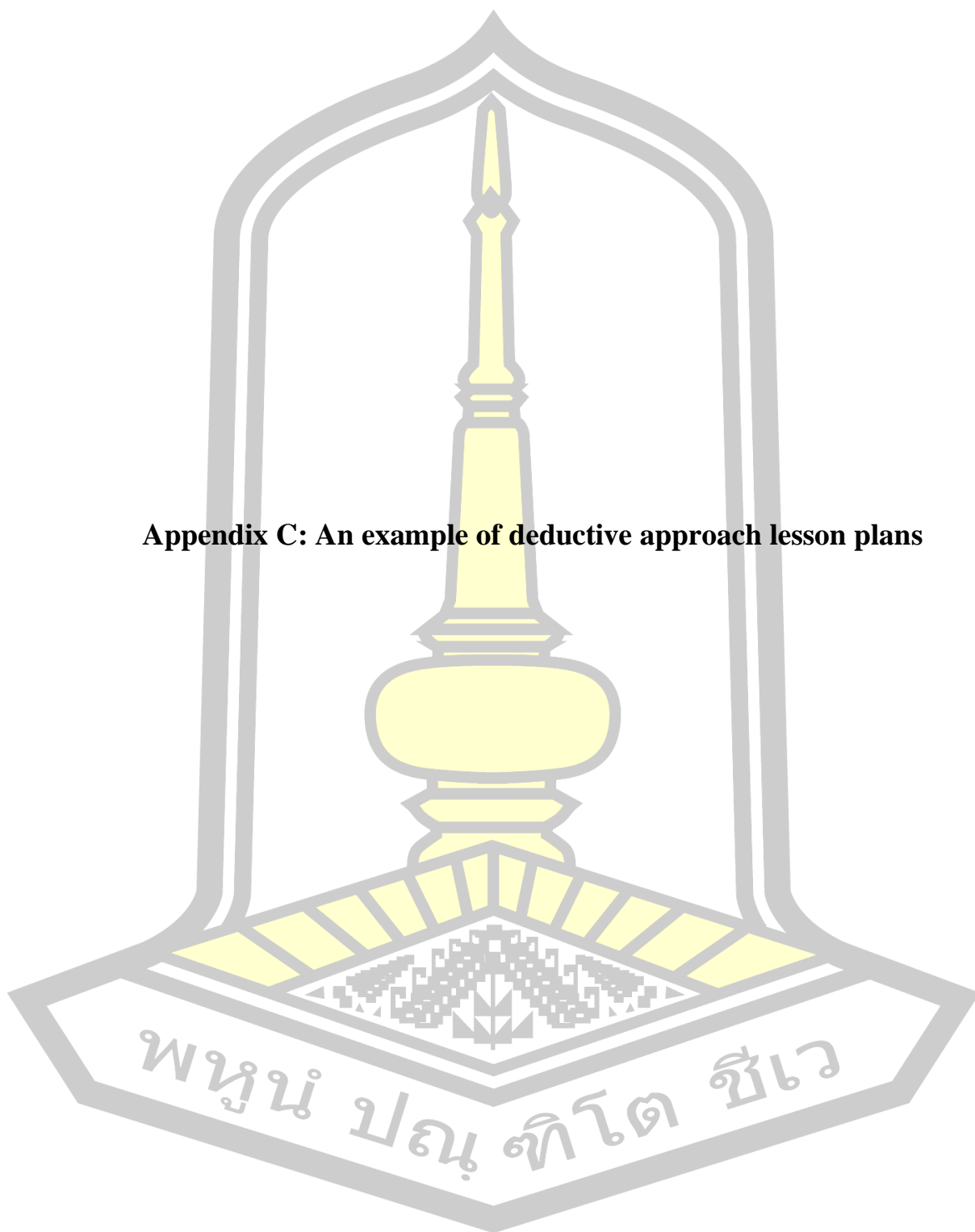
Practice Exercise

'due to' and 'in order to'

Direction: Choose 'due to' or 'in order to' to complete the sentences.

1. I have started an English course improve my English.
2. I went to bed early wake up early.
3. The accident was carelessness.
4. I need to take out a loan from a finance company buy a new car.
5. The doctors said that the man's death was heart failure.
6. School was cancelledthe weather.
7. One should exercise regularly keep their body in shape.
8. Amanda stayed at home her illness.
9. Her lateness was a terrible traffic jam.
10. We all put on our jackets keep warm.





Appendix C: An example of deductive approach lesson plans

Logical Connector Deductive Lesson Plan I

Level: Matthayomsuksa 6

Semester: 2/2019

Date..... Time:

1. Topic: Logical connectors for cause-effect (due to / in order to)

2. Instructor: Rungpech Petcharinphan

3. Length of Time: 60 minutes

4. Learning Objectives:

Upon completion of the lesson, students will be able to

1. Correctly write and translate the sentences with the target logical connectors - 'due to' and 'in order to'.

5. Learning standard:

Standard F1.1 G10-12/3

Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to

sentences and texts heard or read.

6. Contents

Structure: due to, in order to

Example: The train was running approximately two hours late due to a broken rail at Northallerton.

I had gone for coffee in the student room in order to avoid my colleagues.

7. Teaching and Learning Activities

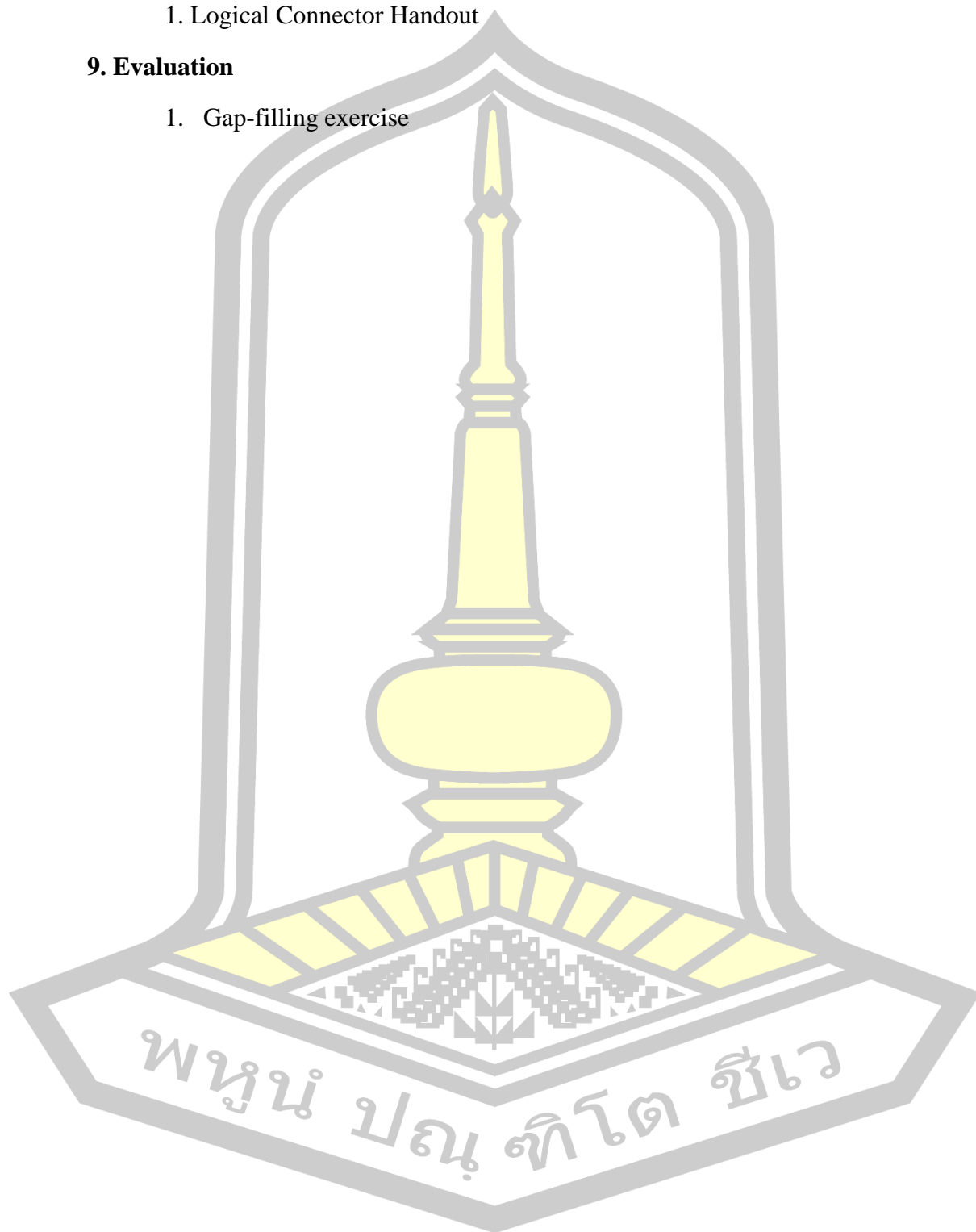
1. Lead in 10 minutes
2. Rule Presentation 20 minutes
3. Rule Practice 20 minutes

8. Teaching and Learning Material

1. Logical Connector Handout

9. Evaluation

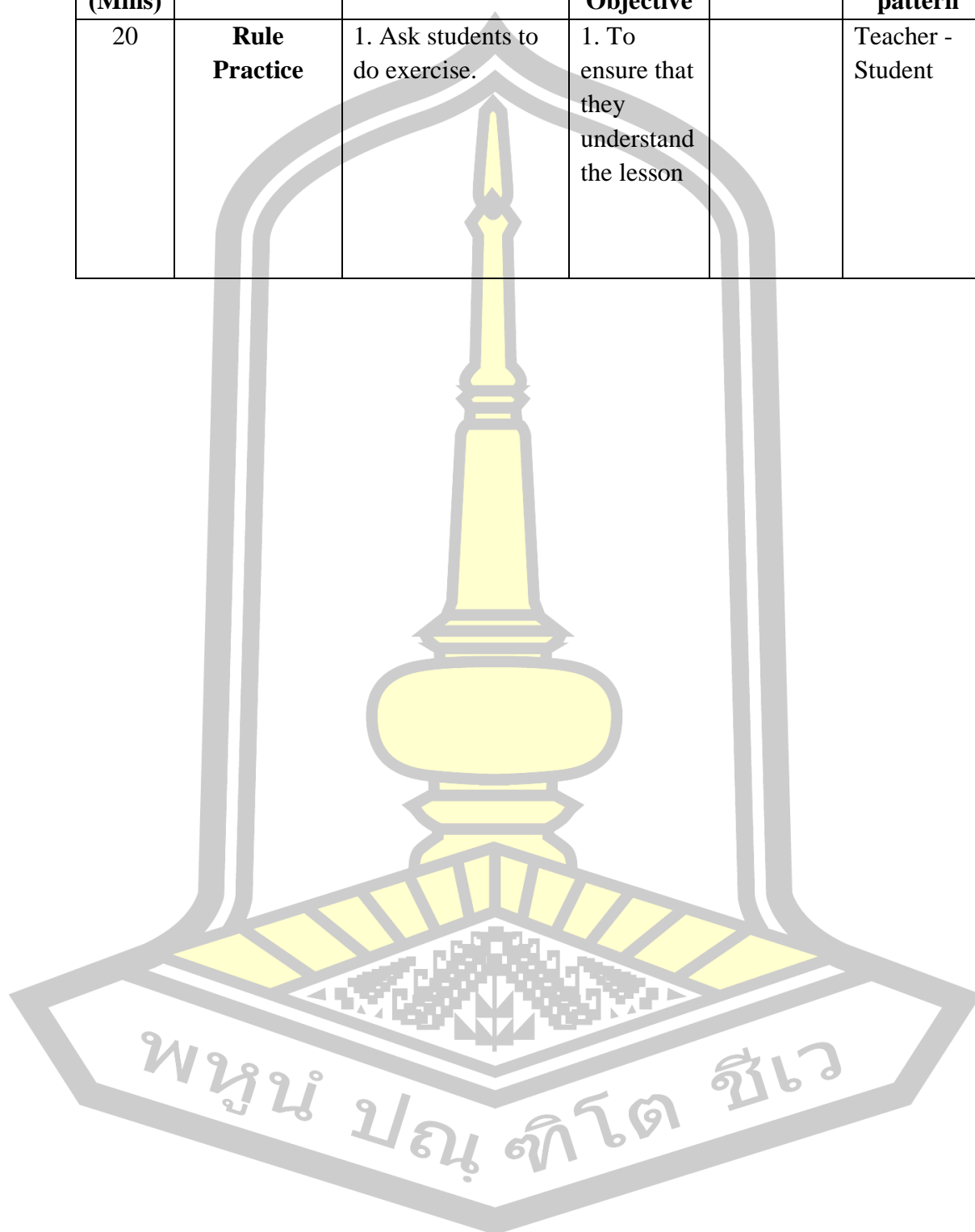
1. Gap-filling exercise



10. Teaching procedures

Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
10	Lead-in	<ol style="list-style-type: none"> 1. Write on the board the sentences which contain the target logical connectors – due to / in order to. 2. Ask students to translate the sentences into Thai. 3. Highlight the logical connectors – due to / in order to – and tell students the lesson objective. 	<ol style="list-style-type: none"> 1. To introduce the lesson 2. To prepare students for the next activities 		Teacher - Student
30	Rule Presentation	<ol style="list-style-type: none"> 1. Give students a logical connector handout. 2. Let students read the handout for five minutes. 3. Explain and summarize the rule to students 4. Ask questions to check if students understand the rule. 	<ol style="list-style-type: none"> 1. To teach students the target logical connectors – due to / in order to 	1. Logical connector handout set 1	Teacher - Student

Time (Mins)	Activity	Procedures	Aims / Objective	Material	Interaction pattern
20	Rule Practice	1. Ask students to do exercise.	1. To ensure that they understand the lesson		Teacher - Student



Logical Connector Handout (Set 1)

Due to = เนื่องจาก เพราะ

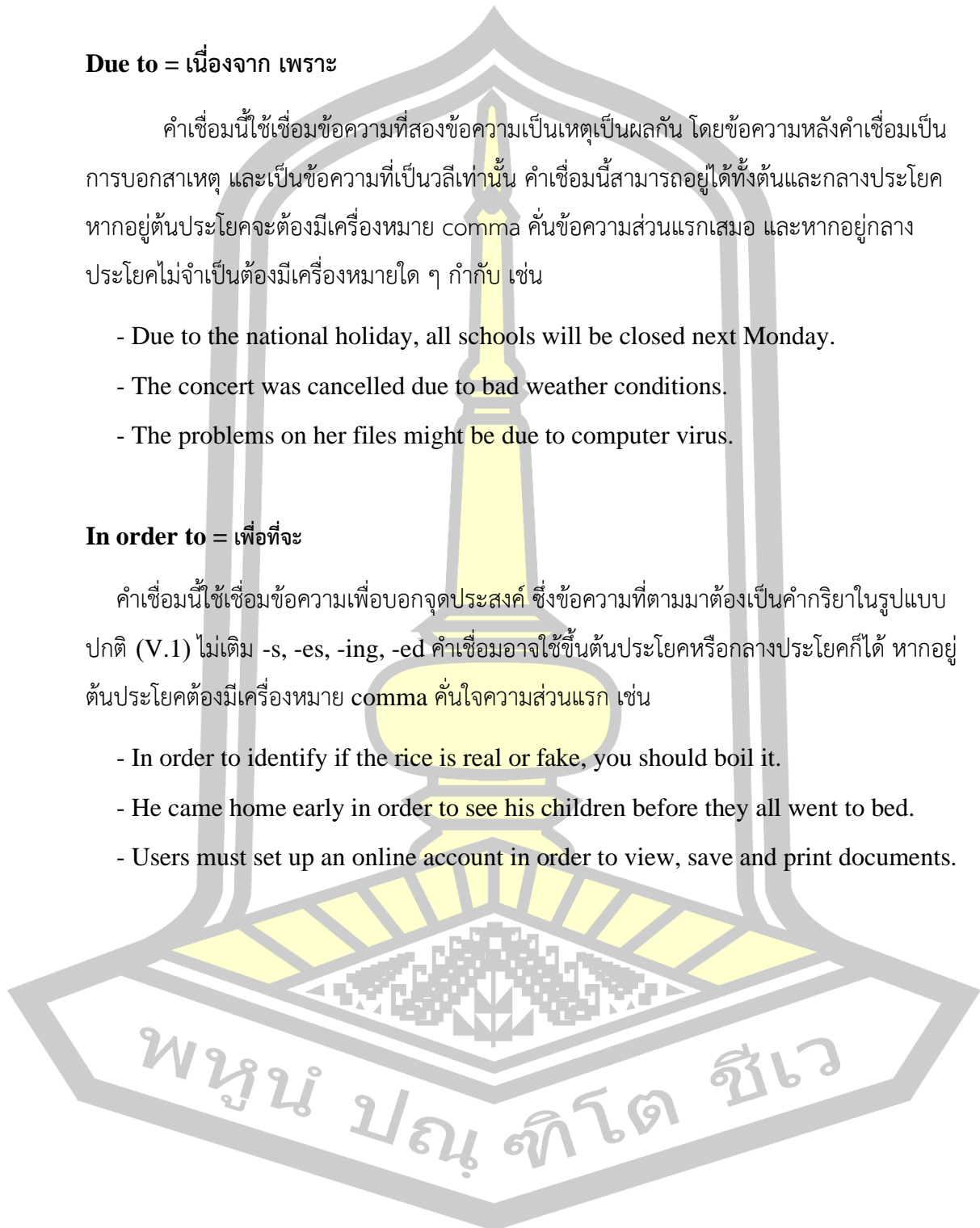
คำเชื่อมนี้ใช้เชื่อมข้อความที่สองข้อความที่เป็นเหตุเป็นผลกัน โดยข้อความหลังคำเชื่อมเป็นการบอกสาเหตุ และเป็นข้อความที่เป็นวลีเท่านั้น คำเชื่อมนี้สามารถอยู่ได้ทั้งต้นและกลางประโยค หากอยู่ต้นประโยคจะต้องมีเครื่องหมาย comma คั่นข้อความส่วนแรกเสมอ และหากอยู่กลางประโยคไม่จำเป็นต้องมีเครื่องหมายใด ๆ กำกับ เช่น

- Due to the national holiday, all schools will be closed next Monday.
- The concert was cancelled due to bad weather conditions.
- The problems on her files might be due to computer virus.

In order to = เพื่อที่จะ

คำเชื่อมนี้ใช้เชื่อมข้อความเพื่อบอกจุดประสงค์ ซึ่งข้อความที่ตามมาต้องเป็นคำกริยาในรูปแบบปกติ (V.1) ไม่เติม -s, -es, -ing, -ed คำเชื่อมอาจใช้ขึ้นต้นประโยคหรือกลางประโยคก็ได้ หากอยู่ต้นประโยคต้องมีเครื่องหมาย comma คั่นใจความส่วนแรก เช่น

- In order to identify if the rice is real or fake, you should boil it.
- He came home early in order to see his children before they all went to bed.
- Users must set up an online account in order to view, save and print documents.

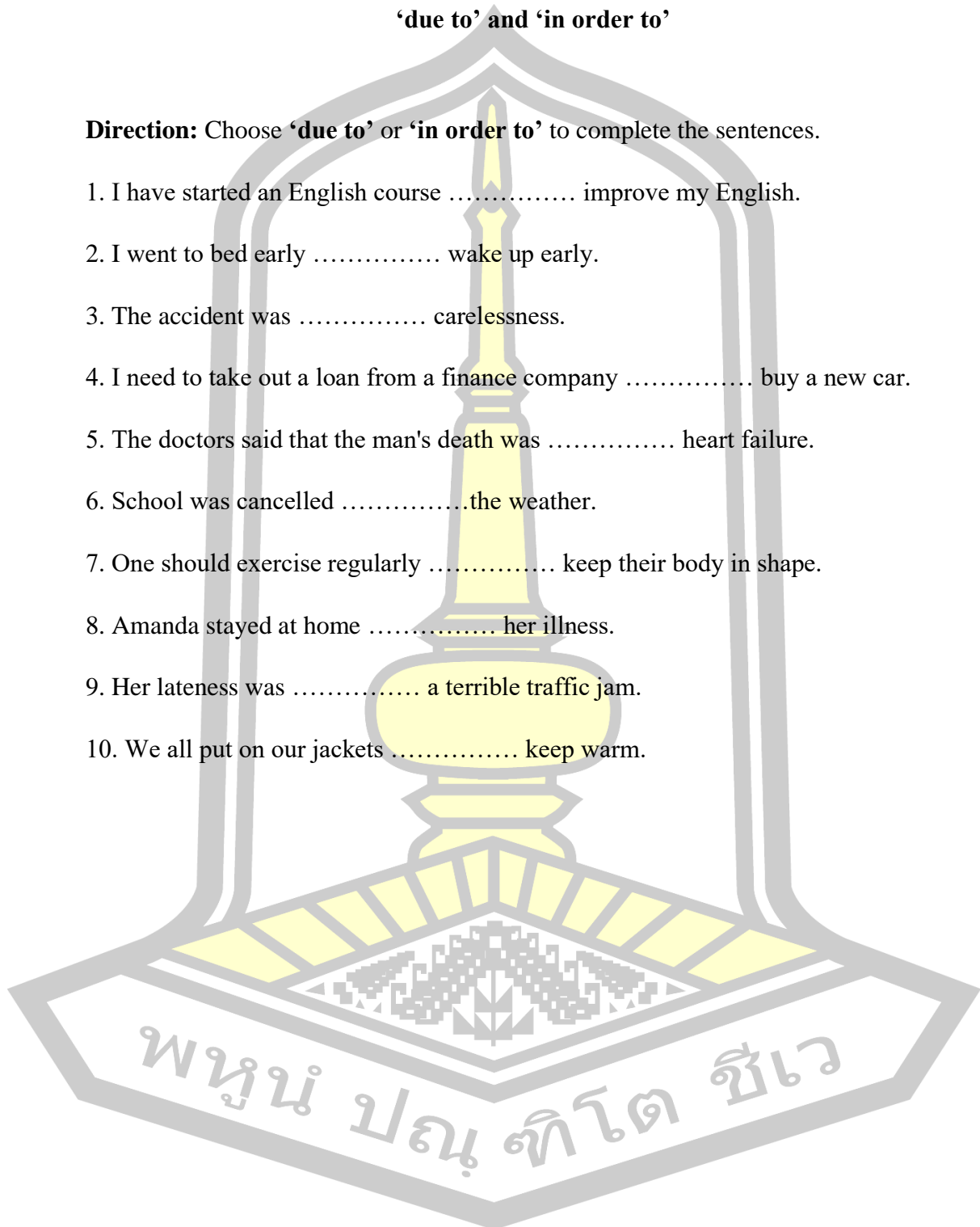


Practice Exercise I

'due to' and 'in order to'

Direction: Choose 'due to' or 'in order to' to complete the sentences.

1. I have started an English course improve my English.
2. I went to bed early wake up early.
3. The accident was carelessness.
4. I need to take out a loan from a finance company buy a new car.
5. The doctors said that the man's death was heart failure.
6. School was cancelledthe weather.
7. One should exercise regularly keep their body in shape.
8. Amanda stayed at home her illness.
9. Her lateness was a terrible traffic jam.
10. We all put on our jackets keep warm.

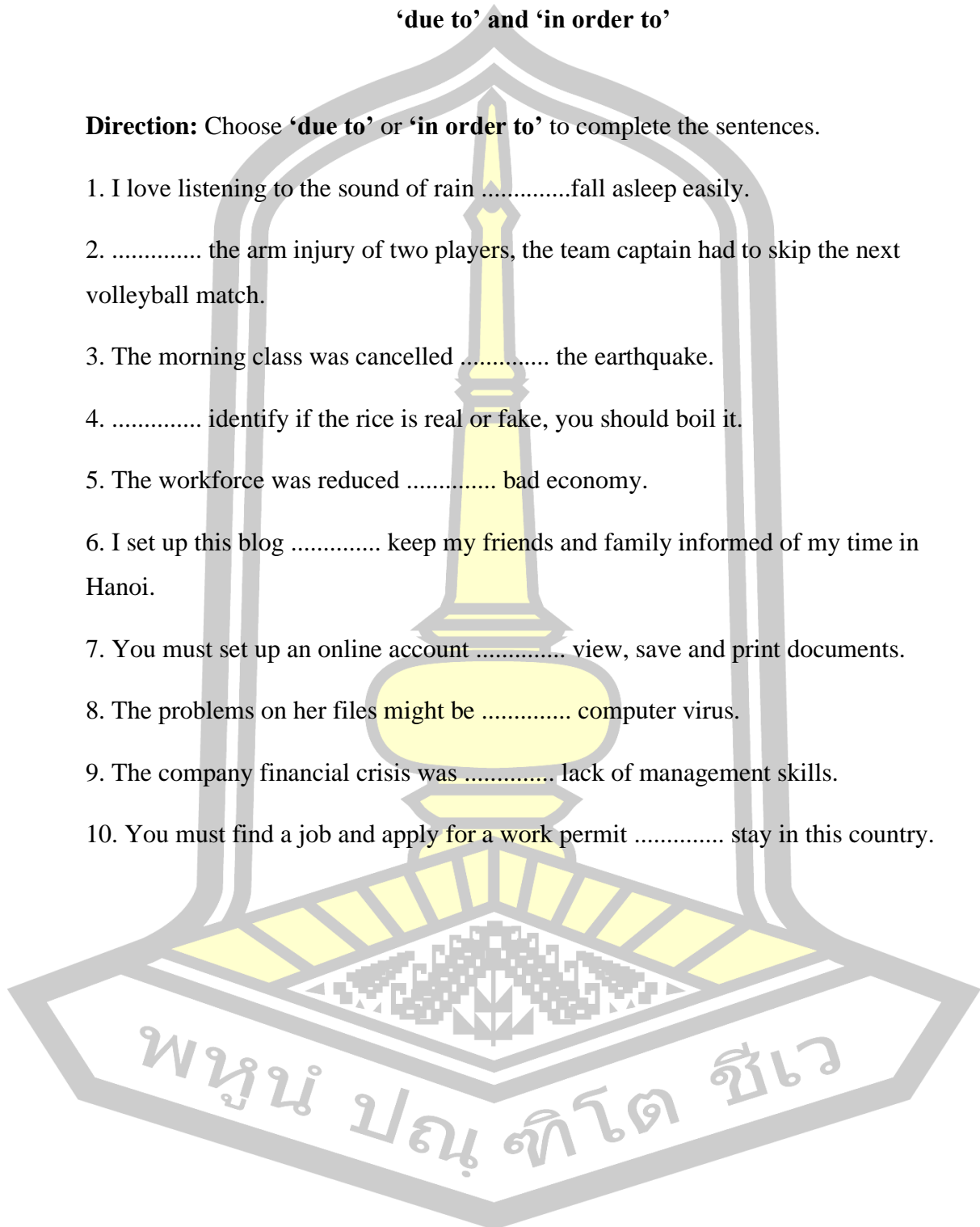


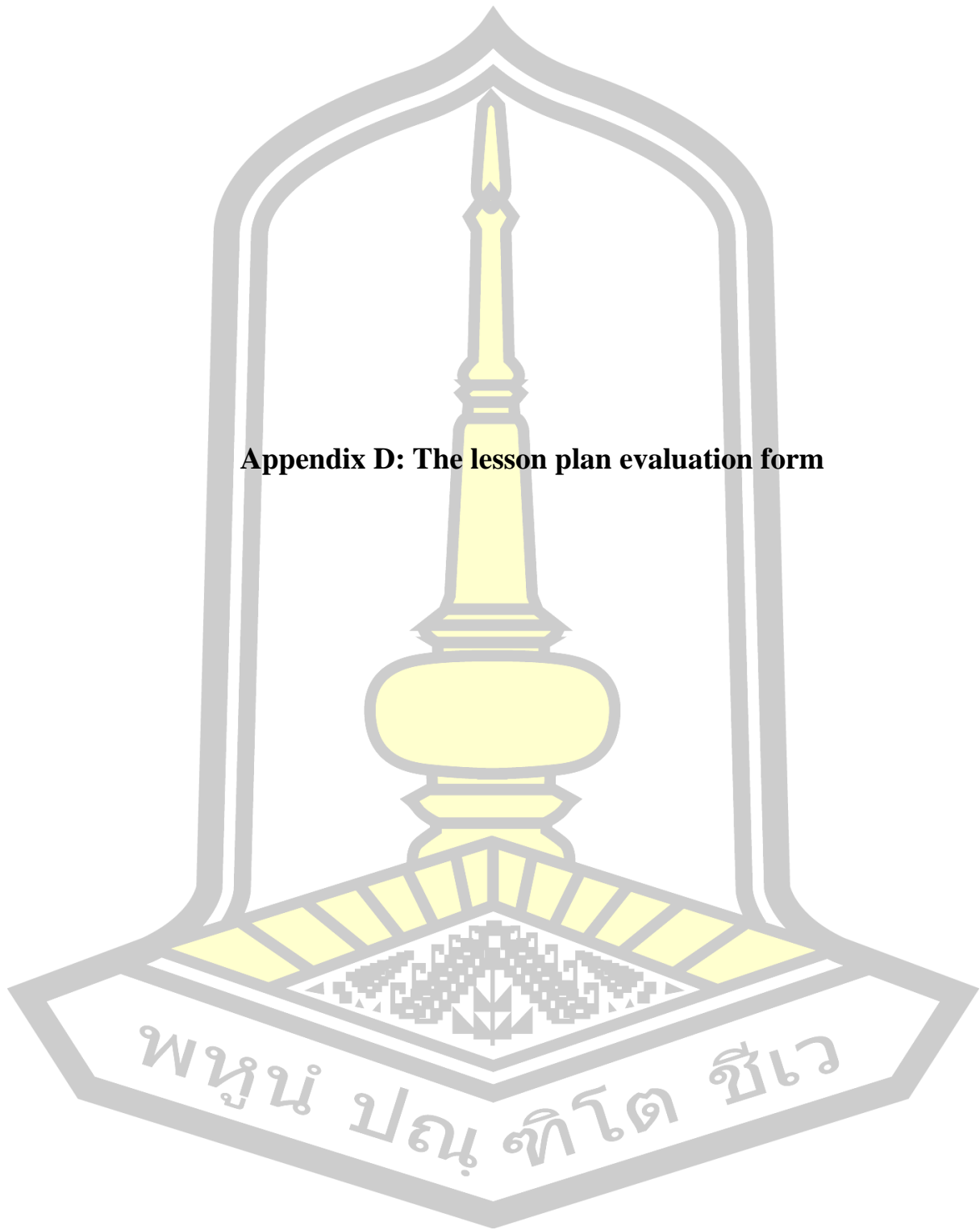
Practice Exercise II

'due to' and 'in order to'

Direction: Choose 'due to' or 'in order to' to complete the sentences.

1. I love listening to the sound of rainfall asleep easily.
2. the arm injury of two players, the team captain had to skip the next volleyball match.
3. The morning class was cancelled the earthquake.
4. identify if the rice is real or fake, you should boil it.
5. The workforce was reduced bad economy.
6. I set up this blog keep my friends and family informed of my time in Hanoi.
7. You must set up an online account view, save and print documents.
8. The problems on her files might be computer virus.
9. The company financial crisis was lack of management skills.
10. You must find a job and apply for a work permit stay in this country.





Appendix D: The lesson plan evaluation form

Lesson Plan Evaluation Form

The following questions are regarding your opinions on learning with the lesson plan for the integrated inductive approach of GCR task and DDL. Using the scale below, please mark “x” in the box that most closely resembles your perspectives.

5: excellent 4: very good 3: good 2: acceptable 1: to be improved

No.	Statement	Levels of Agreement				
		5	4	3	2	1
1	The lesson plan has appropriate structure.					
2	National standards are clearly specified and aligned with state standards.					
3	The lesson plan is cohesive: standard, lessons, and assessments well-aligned.					
4	The content of the lesson is aligned with objective of the study.					
5	The lesson plan has appropriate sequence.					
6	The activities of the lesson are aligned with objective of the study.					
7	The lesson plan incorporates a variety of teaching and learning activities.					
8	The lesson plan is largely student-focused with students taking an active role in learning.					
9	Materials and media are used appropriately to activities and objectives.					
10	Materials and media are used appropriately to learners and content.					
11	The lesson has assessment and evaluation methods that match learning objectives.					

Suggestion

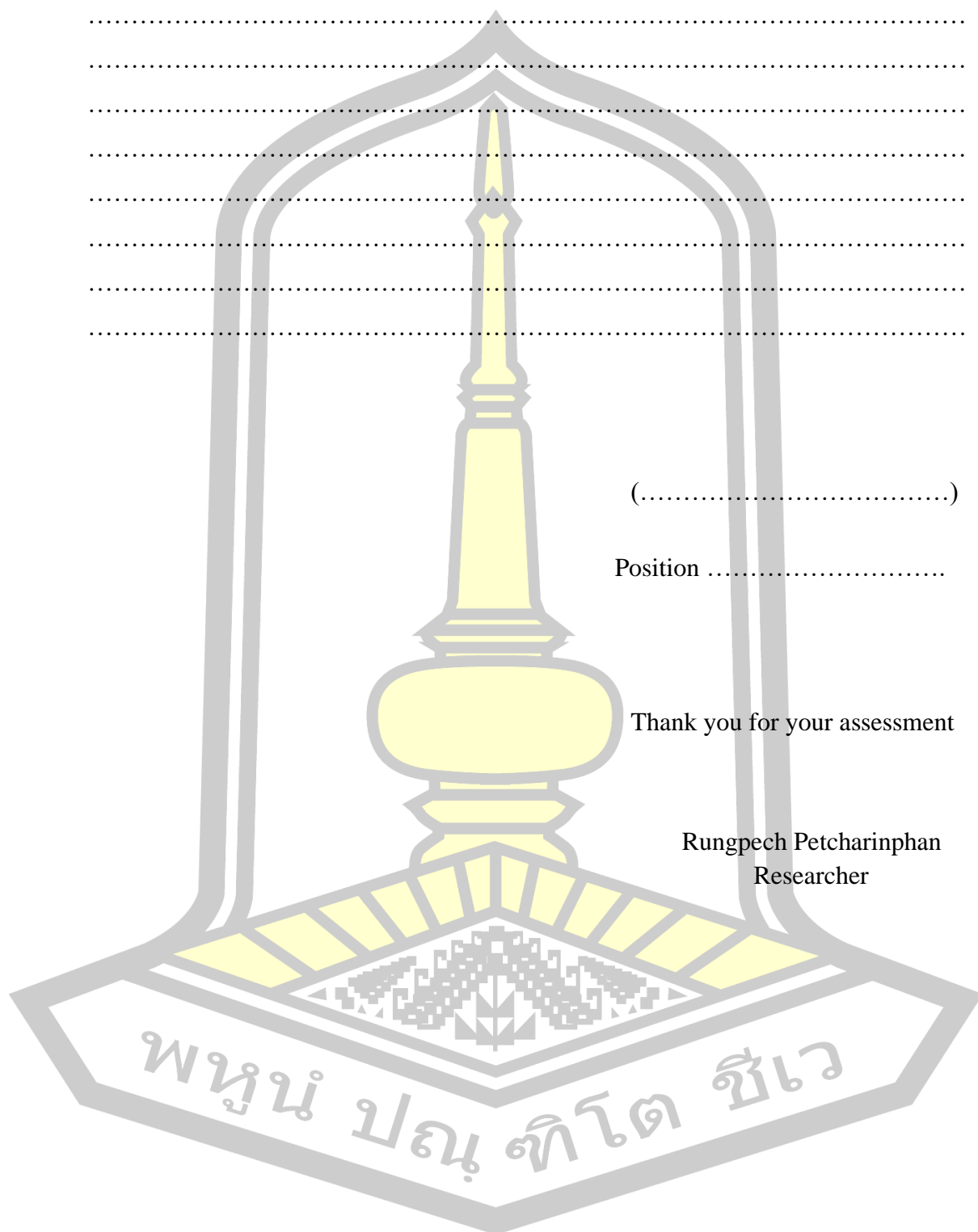
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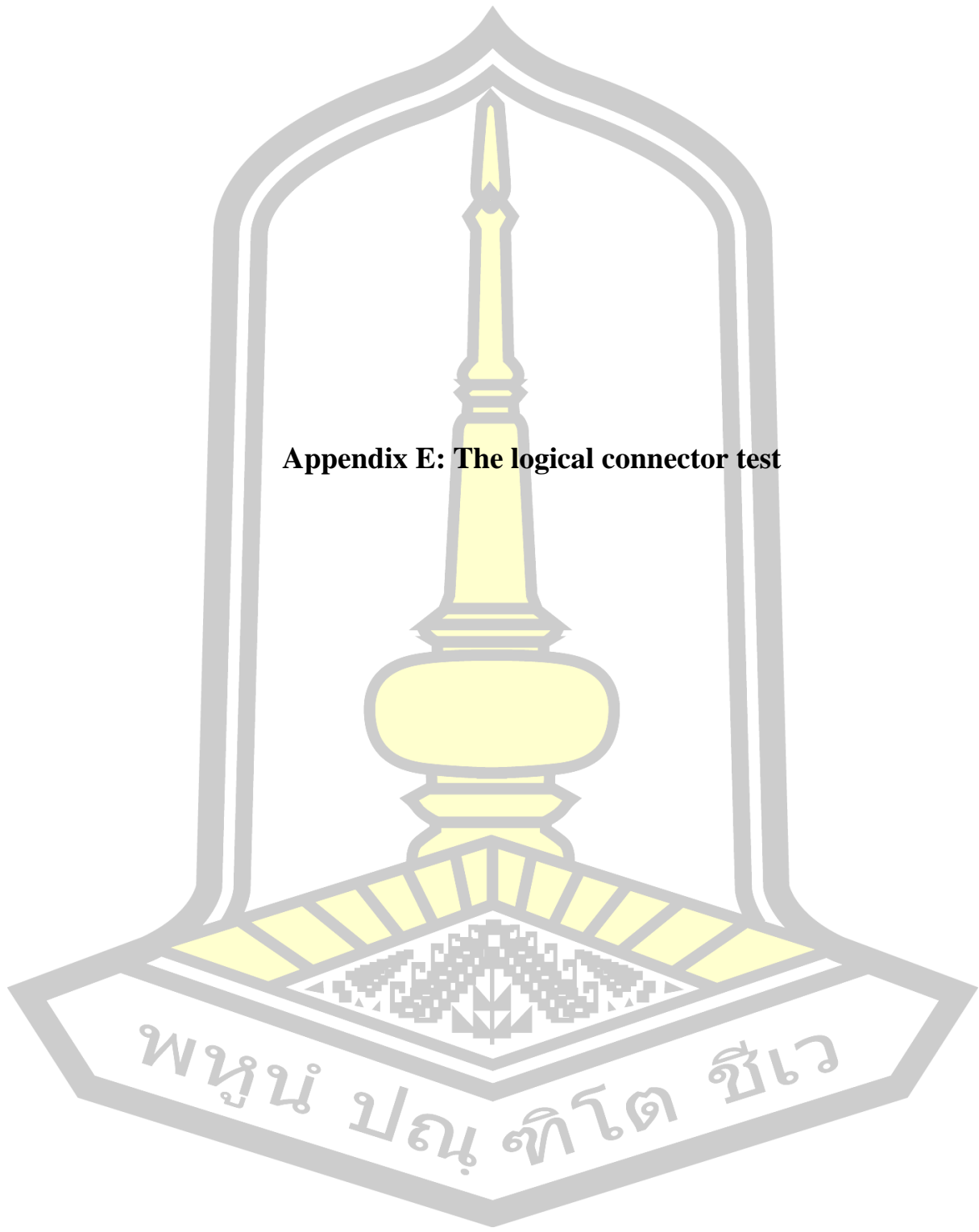
(.....)

Position

Thank you for your assessment

Rungpech Petcharinphan
Researcher





Appendix E: The logical connector test

Name: Class: No.

Logical Connector Test

Instruction: There are two parts in the test. Read the directions before doing the test.

Part I: Receptive Section (Form and Meaning)

Direction: 1. Read the sentences.
2. Check the spelling of each logical connector. Then mark in the box.
3. Check if a logical connector is used to join ideas correctly based on its meaning.

Example: I go to school, **buth** he goes to work.

	Spelling	Meaning
Correct		/
Incorrect	/	

1. He must be about 60, **whereas** his wife is about the same age as him.

	Spelling	Meaning
Correct		
Incorrect		

2. The flight was canceled **due to** bad weather.

	Spelling	Meaning
Correct		
Incorrect		

3. This is not because tax rates are being raised; **on the contrary**, the prices of products are also being increased.

	Spelling	Meaning
Correct		
Incorrect		

4. As **weil** computer problems, the checks will be late.

	Spelling	Meaning
Correct		
Incorrect		

5. **In addition to** illness, homelessness is only a key issue.

	Spelling	Meaning
Correct		
Incorrect		

6. I still enjoyed the week **despit** the good weather.

	Spelling	Meaning
Correct		
Incorrect		

7. He came home late **in order to** see the kids before they went to bed.

	Spelling	Meaning
Correct		
Incorrect		

8. Profits have declined **as a results of** the recent drop in sales.

	Spelling	Meaning
Correct		
Incorrect		

9. The bus was delayed **doo to** heavy snow.

	Spelling	Meaning
Correct		
Incorrect		

10. Things became very awkward between us afterwards and, **as a results**, I had to quit my job.

	Spelling	Meaning
Correct		
Incorrect		

11. **In addition to** his apartment in Manhattan, he has a villa in Italy and a castle in Scotland.

	Spelling	Meaning
Correct		
Incorrect		

12. She actually enjoys fighting, **wherease** I prefer a quiet life.

	Spelling	Meaning
Correct		
Incorrect		

13. He may fail **as a result of** natural disasters, but no one can blame him for that.

	Spelling	Meaning
Correct		
Incorrect		

14. "I thought you said the film was exciting?" "**On the contrary**, I nearly fell asleep half way through it!"

	Spelling	Meaning
Correct		
Incorrect		

15. America and Europe have fallen out over farm trade; **as a result**, the General Agreement on Tariffs and Trade (GATT) has broken down.

	Spelling	Meaning
Correct		
Incorrect		

16. He could not eat a big lunch **despite** having eaten an enormous breakfast.

	Spelling	Meaning
Correct		
Incorrect		

17. **In contrary to** television, radio may seem a simple matter.

	Spelling	Meaning
Correct		
Incorrect		

18. I agreed to her suggestion **in order to** upset her.

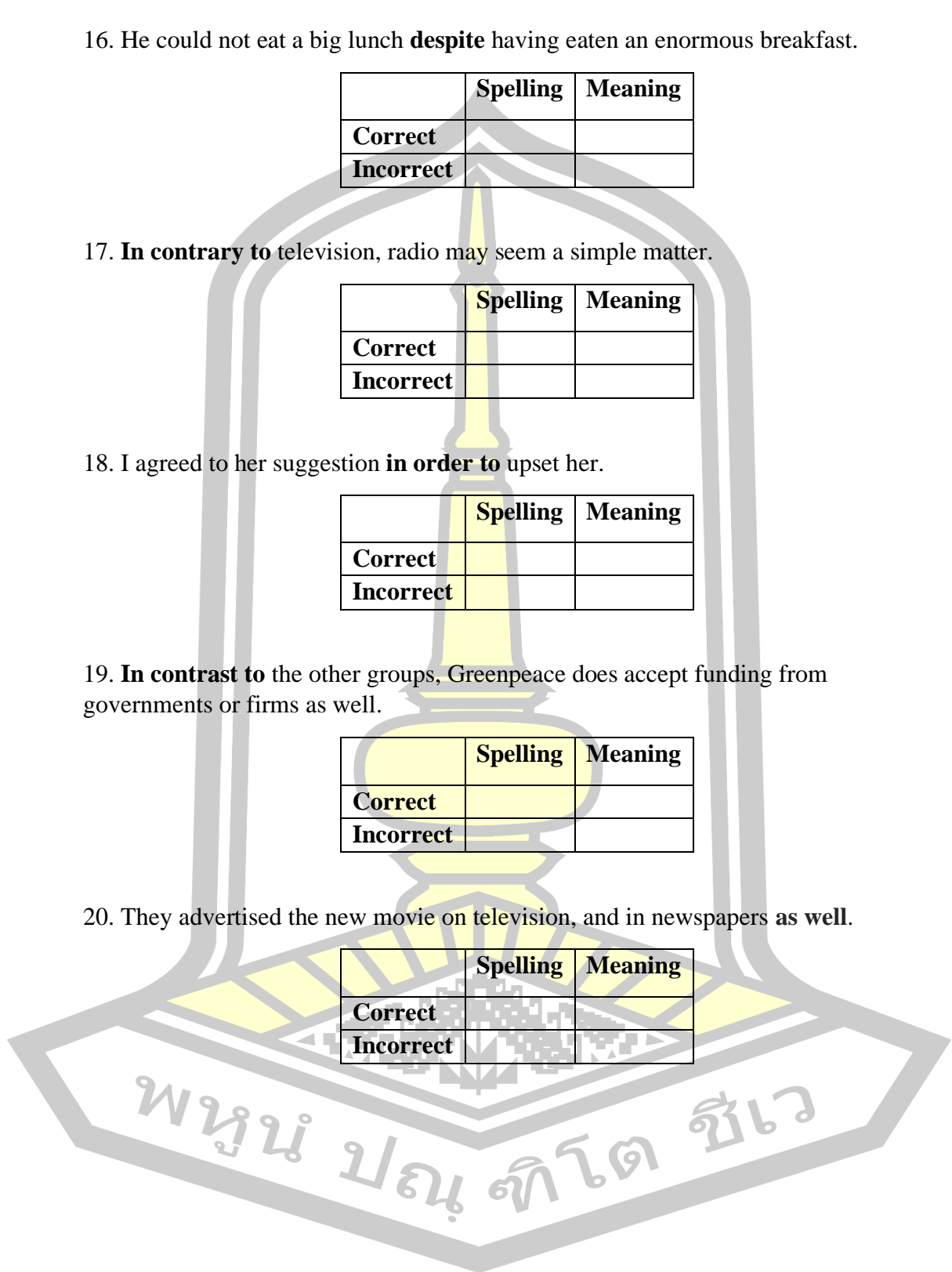
	Spelling	Meaning
Correct		
Incorrect		

19. **In contrast to** the other groups, Greenpeace does accept funding from governments or firms as well.

	Spelling	Meaning
Correct		
Incorrect		

20. They advertised the new movie on television, and in newspapers **as well**.

	Spelling	Meaning
Correct		
Incorrect		



Part II: Productive Section (Use)

Direction: Write the sentences using the provided logical connectors to join ideas correctly.

No.	Logical Connectors	Sentences
E.G.	however	I mustn't have any more chocolate; however , I feel like it so much.
1.	due to	
2.	in order to	
3.	as a result	
4.	as a result of	
5.	in contrast to	
6.	on the contrary	
7.	despite	
8.	whereas	
9.	In addition to	
10.	as well	



**Appendix F: The Item-Objective Congruence Index of
the logical connector test**

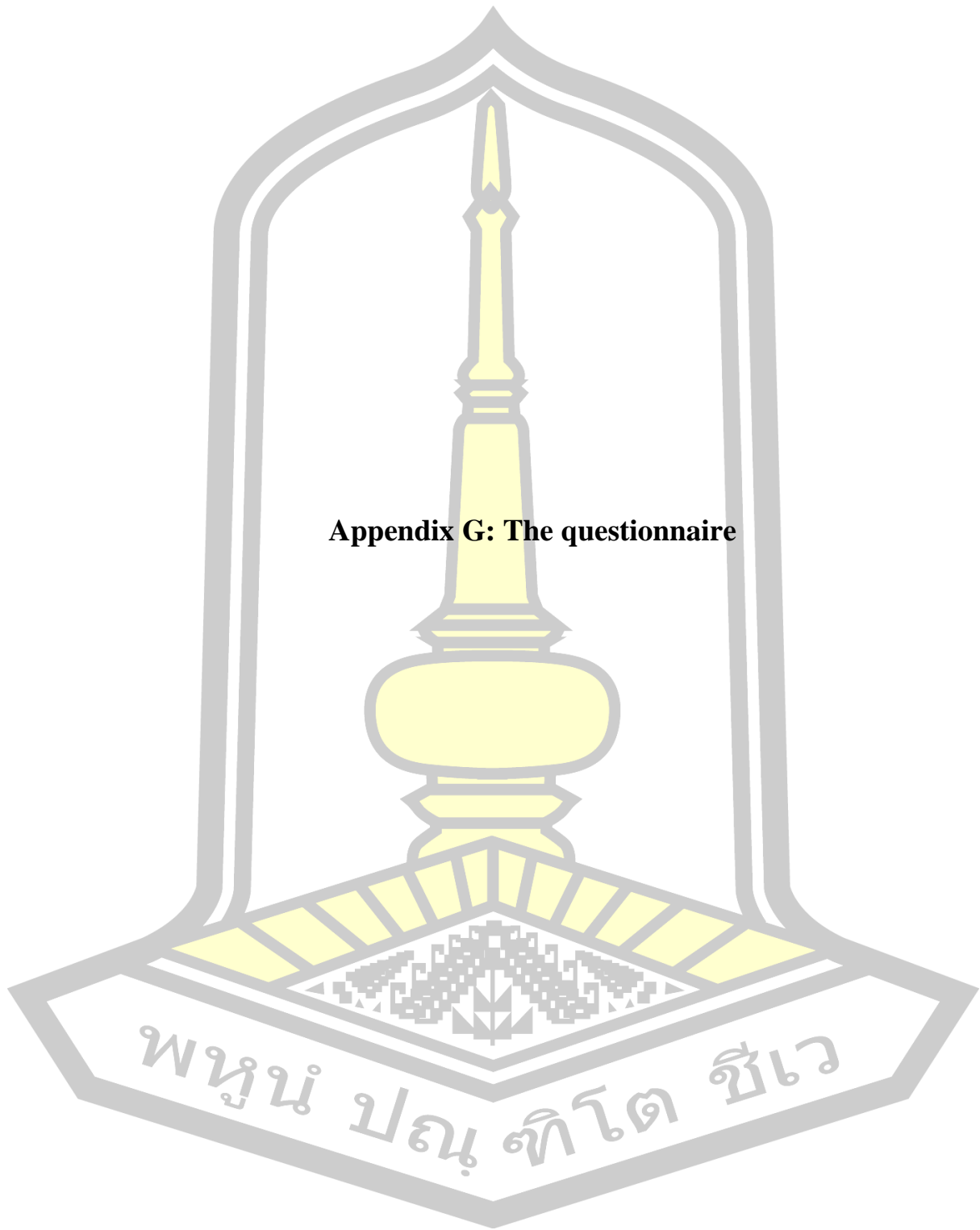
**The Item-Objective Congruence Index of
the Logical Connector Test**

1. Receptive Section

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Reserved
2	1	1	1	1	Reserved
3	1	1	0	0.67	Reserved
4	1	1	1	1	Reserved
5	1	0	1	0.67	Reserved
6	1	1	1	1	Reserved
7	1	1	1	1	Reserved
8	1	1	1	1	Reserved
9	0	1	1	0.67	Reserved
10	1	1	1	1	Reserved
11	1	1	1	1	Reserved
12	1	1	1	1	Reserved
13	1	1	1	1	Reserved
14	1	0	1	0.67	Reserved
15	1	1	0	0.67	Reserved
16	1	1	1	1	Reserved
17	1	1	1	1	Reserved
18	1	1	0	0.67	Reserved
19	1	1	1	1	Reserved
20	0	1	1	0.67	Reserved

2. Productive Section

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Reserved
2	1	1	1	1	Reserved
3	1	1	1	1	Reserved
4	1	1	1	1	Reserved
5	1	1	1	1	Reserved
6	1	1	1	1	Reserved
7	1	1	1	1	Reserved
8	1	1	1	1	Reserved
9	1	1	1	1	Reserved
10	1	1	1	1	Reserved



Appendix G: The questionnaire

Questionnaire about Learning Logical Connectors with the Integrated Inductive Approach

Section I: Background information

Gender: Male _____ Female _____ Age: _____

Section II: Reactions to the Integrated Inductive Approach

The following questions are regarding your opinions on learning with the integrated inductive approach of GCR task and DDL. Using the scale below, please mark “x” in the box that most closely resembles your perspectives.

1: the least 2: less 3: moderate 4: more 5: the most

No.	Statement	1	2	3	4	5
1.	The pre-lesson session is helpful to learn with the integrated inductive approach.					
2.	The steps of the task are easy to follow.					
3.	The teacher’s facilitation is useful for doing the task.					
4.	The interaction among group members is helpful for task achievement.					
5.	The task-presentation feedbacks help me to construct my own rules.					
6.	The concordance lines as a material in the lesson are useful examples for logical connector learning.					
7.	The contexts where the logical connectors appear in the concordance lines help me to identify form, meaning, and use of the logical connectors.					
8.	Learning logical connector through the integrated inductive approach makes the lesson more interesting and challenging.					
9.	The integrated inductive approach allows me to speak English more during the task processes.					
10.	The integrated inductive approach allows me to participate in the lesson more than the previous grammar class.					
11.	Discovering and constructing the logical connector rules through the integrated inductive approach have increased understanding and awareness in logical connectors.					
12.	I feel more confident in using logical connectors after learning with the integrated inductive approach.					
13.	I prefer learning grammar with the integrated inductive approach to the traditional teaching.					
14.	If I had studied with this approach earlier, my logical connector knowledge would have been better.					
15.	I want to study other grammar rules with this approach in the future.					

Suggestion:.....
.....

แบบสอบถามความคิดเห็นเกี่ยวกับการเรียนคำเชื่อมความโดยใช้รูปแบบการสอนแบบบูรณาการ
ระหว่างภาระงานแบบตระหนักรู้ไวยากรณ์และการสอนแบบขับเคลื่อนข้อมูล

แบบสอบถามฉบับนี้มีจุดประสงค์เพื่อสอบถามความคิดเห็นจากการเรียนคำเชื่อมความโดยใช้รูปแบบ
การสอนแบบบูรณาการระหว่างภาระงานแบบตระหนักรู้ไวยากรณ์และการสอนแบบขับเคลื่อนข้อมูล

ส่วนที่ 1: ข้อมูลส่วนตัว

เพศ: ชาย _____ หญิง _____ อายุ: _____

ส่วนที่ 2: ความคิดเห็นเกี่ยวกับรูปแบบการสอนแบบบูรณาการระหว่างภาระงานแบบตระหนักรู้
ไวยากรณ์และการสอนแบบขับเคลื่อนข้อมูล โปรดทำเครื่องหมายกากบาทลงในช่องที่ตรงกับความ
คิดเห็นของท่าน

1: ไม่เห็นด้วยอย่างยิ่ง 2: ไม่เห็นด้วย 3: เห็นด้วยบางส่วน 4: เห็นด้วย 5: เห็นด้วยอย่างยิ่ง

ข้อ	รายการพิจารณา	1	2	3	4	5
1.	การแนะนำบทเรียนและรูปแบบวิธีการเรียนก่อนเริ่มเรียนเป็นประโยชน์ต่อ การเรียนโดยใช้รูปแบบภาระงานการสอนแบบบูรณาการ					
2.	ขั้นตอนในการทำภาระงานไม่ซับซ้อน สามารถเข้าใจและทำตามได้ง่าย					
3.	คำแนะนำและการช่วยเหลือของครูระหว่างทำภาระงานช่วยให้การทำ ภาระงานง่ายขึ้น					
4.	การพูดคุยกันระหว่างสมาชิกในกลุ่มมีส่วนช่วยให้การทำภาระงานสำเร็จ ง่ายขึ้น					
5.	ผลสะท้อนที่ได้จากการนำเสนอภาระงานของเพื่อนมีส่วนช่วยให้ฉันสรุปกฎ ของตัวเองได้					
6.	การใช้ข้อมูลจากคลังภาษา (concordance lines) เป็นสื่อในการเรียนการ สอน ช่วยให้เห็นตัวอย่างของการใช้คำเชื่อมในบริบทได้ดียิ่งขึ้น					
7.	บริบทของคำเชื่อมปรากฏใน concordance lines ช่วยให้ฉันสังเกตการ สะกดคำ ความหมาย และรูปแบบการใช้คำเชื่อมได้ดียิ่งขึ้น					
8.	การเรียนคำเชื่อมด้วยรูปแบบการสอนแบบบูรณาการทำให้บทเรียนน่าสนใจ ในและท้าทายยิ่งขึ้น					
9.	การเรียนคำเชื่อมด้วยรูปแบบการสอนแบบบูรณาการช่วยให้ฉันได้ฝึกพูด ภาษาอังกฤษขณะที่ทำภาระงานไปพร้อม ๆ กับการเรียนไวยากรณ์					

ข้อ	รายการพิจารณา	1	2	3	4	5
11.	การค้นหาและการสรุปกฎของคำเชื่อมความผ่านการเรียนด้วยรูปแบบการสอนแบบบูรณาการช่วยเพิ่มความเข้าใจและความตระหนักรู้ในการใช้คำเชื่อมความได้ดีขึ้น					
12.	ฉันรู้สึกมั่นใจในการใช้คำเชื่อมความมากขึ้นหลังจากเรียนด้วยรูปแบบการสอนแบบบูรณาการ					
13.	ฉันชอบเรียนไวยากรณ์ด้วยรูปแบบการสอนแบบบูรณาการมากกว่ารูปแบบการเรียนแบบดั้งเดิม					
14.	ถ้าฉันได้เรียนด้วยรูปแบบการสอนแบบบูรณาการนี้มาก่อน ความรู้ด้านการใช้คำเชื่อมของฉันคงดีกว่านี้					
15.	ฉันอยากเรียนไวยากรณ์เรื่องอื่น ๆ ด้วยรูปแบบการสอนแบบบูรณาการนี้ อีก					

ข้อเสนอแนะเพิ่มเติม:

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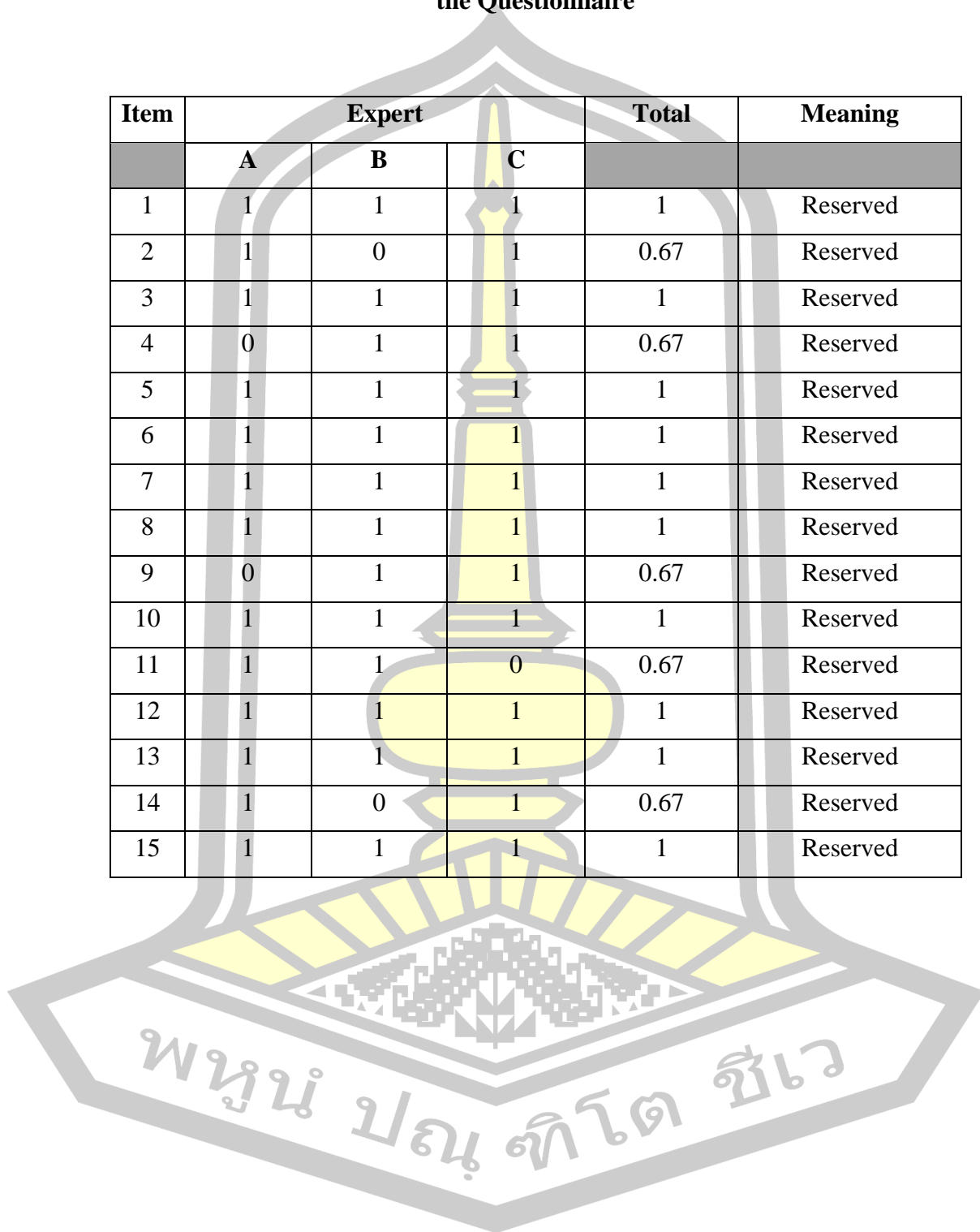


**Appendix H: The Item-Objective Congruence Index
of the questionnaire**

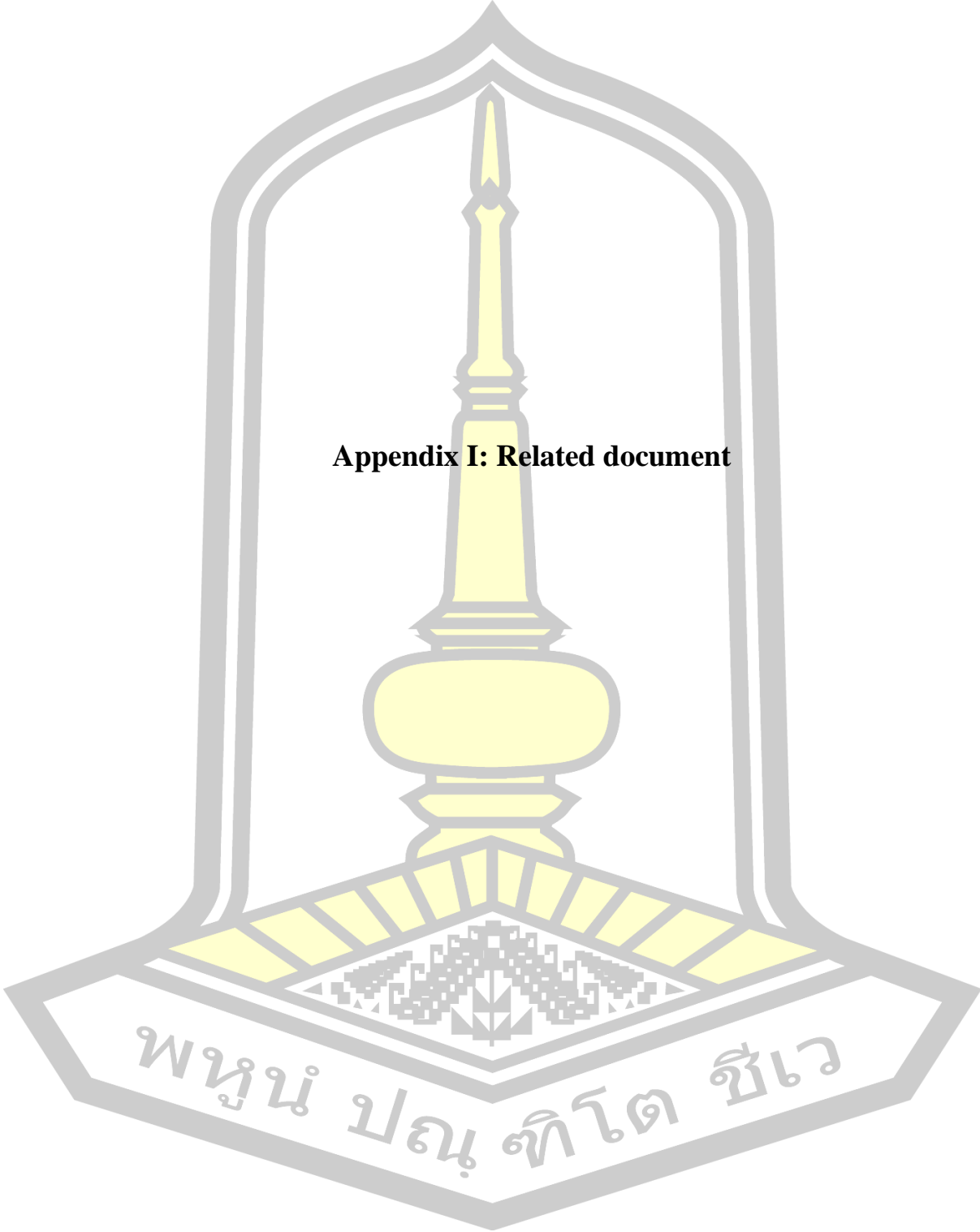


**The Item-Objective Congruence Index of
the Questionnaire**

Item	Expert			Total	Meaning
	A	B	C		
1	1	1	1	1	Reserved
2	1	0	1	0.67	Reserved
3	1	1	1	1	Reserved
4	0	1	1	0.67	Reserved
5	1	1	1	1	Reserved
6	1	1	1	1	Reserved
7	1	1	1	1	Reserved
8	1	1	1	1	Reserved
9	0	1	1	0.67	Reserved
10	1	1	1	1	Reserved
11	1	1	0	0.67	Reserved
12	1	1	1	1	Reserved
13	1	1	1	1	Reserved
14	1	0	1	0.67	Reserved
15	1	1	1	1	Reserved



Appendix I: Related document





บันทึกข้อความ

โรงเรียนสารคามพิทยาคม

ลงวันที่ 108

วันที่ 13 ม.ค. 63

เวลา 10.00 น.

ส่วนราชการ โรงเรียนสารคามพิทยาคม อำเภอเมือง จังหวัดมหาสารคาม

ที่ วันที่ 23 มกราคม 2563

เรื่อง ขออนุญาตในการเก็บข้อมูลวิจัย

เรียน ผู้อำนวยการโรงเรียนสารคามพิทยาคม

ข้าพเจ้า นายรุ่งเพชร เพชรชรินทร์ ตำแหน่ง ครูผู้ช่วย โรงเรียนสารคามพิทยาคม เป็นนิสิตหลักสูตร การศึกษามหาบัณฑิต สาขาวิชาการสอนภาษาอังกฤษ คณะมนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัย มหาสารคาม อยู่ในระหว่างการทำนงานวิจัยวิทยานิพนธ์เรื่อง “ผลการใช้รูปแบบการสอนแบบบูรณาการ ระหว่างภาระงานแบบตระหนักรู้ไวยากรณ์และการสอนแบบขับเคลื่อนข้อมูลเพื่อพัฒนาความรู้ด้านการใช้ คำเชื่อมของผู้เรียนชาวไทย” โดยมี ผู้ช่วยศาสตราจารย์ ดร. อินธิสาร ไชยสุข เป็นอาจารย์ที่ปรึกษา

ในการวิจัยครั้งนี้ ข้าพเจ้ามีความจำเป็นต้องหาคุณภาพเครื่องมือวิจัย โดยได้ขอความอนุเคราะห์ บุคลากรในกลุ่มสาระการเรียนรู้ภาษาต่างประเทศ โรงเรียนสารคามพิทยาคม จำนวน 3 ท่าน เพื่อเป็น ผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย ได้แก่

1. นางอนงค์ สิทธิวิบูลย์พัฒน์ ครูชำนาญการพิเศษ วุฒิการศึกษาปริญญาโท (กศ.ม. ภาษาอังกฤษ)

ผู้เชี่ยวชาญด้านการสอนภาษาอังกฤษ

2. นางสาววันทนา โคตรภูเวียง ครูชำนาญการพิเศษ วุฒิการศึกษาปริญญาโท (กศ.ม. ภาษาอังกฤษ)

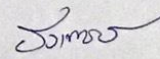
ผู้เชี่ยวชาญด้านการสอนภาษาอังกฤษ


3. Mr. Gary James Wareing ครูชาวต่างชาติ

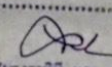
และข้าพเจ้าขออนุญาตจัดการเรียนการสอนตามแผนการจัดการเรียนรู้ จำนวน 5 แผน (10 ชั่วโมง) ตั้งแต่วันที่ 27 มกราคม 2563 ถึงวันที่ 28 กุมภาพันธ์ 2563 และเก็บข้อมูลด้วยแบบทดสอบและแบบสอบถาม กับนักเรียนชั้นมัธยมศึกษาปีที่ 6/15 และ 6/16 ในภาคเรียนที่ 2/2562 ในลำดับต่อไป

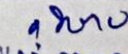
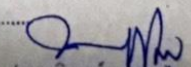
จึงเรียนมาเพื่อขอความอนุเคราะห์และโปรดอนุญาตให้ข้าพเจ้าได้ทำการดำเนินการวิจัยดังกล่าว เพื่อประโยชน์ทางวิชาการต่อไป

จึงเรียนมาเพื่อโปรดพิจารณา


(นายรุ่งเพชร เพชรชรินทร์)

-เรียน ผู้อำนวยการโรงเรียน
-เพื่อโปรดพิจารณา


เรียน ผู้อำนวยการโรงเรียน	ตำแหน่ง ครูผู้ช่วย
- 13/1/63 รุ่งเพชร เพชรชรินทร์	
	
(นางสาวคิปี ทองอาสา)	
รองผู้อำนวยการโรงเรียนสารคามพิทยาคม	

<input checked="" type="checkbox"/> ทราบ	
<input checked="" type="checkbox"/> เห็นชอบ	นาง. อนุชิตา
<input checked="" type="checkbox"/> อนุญาต	
<input type="checkbox"/> อนุมัติ	
	
(นายนิพนธ์ ยศดา)	
ผู้อำนวยการโรงเรียนสารคามพิทยาคม	

BIOGRAPHY

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POSITION Teacher

PLACE OF WORK Sarakhampittayakhom School

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2012 Senior High School in Chiangyuenpittayakhom School
2017 Bachelor of Education (B.Ed) in English, Mahasarakham University
2018 Bachelor of Arts (B.A.) in English, Sukhothai Thammathirat Open University
2020 Master of Education (M.Ed.) in English Language Teaching, Mahasarakham University

พหุบัณฑิต ชีวะ