THE EFFECT OF TOPIC FAMILIARITY ON CRITICAL THINKING SKILLS OF THAI SECONDARY STUDENTS AT DIFFERENT ENGLISH WRITING ABILITY LEVELS

BY

MISS SUPAWADEE JAIJON

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENT FOR THE DEGREE OF
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IN ENGLISH LANGUAGE STUDIES
DEPARTMENT OF ENGLISH
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ENTITLED

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ABSTRACT

Critical thinking is one of the 21st century skills and has become a main goal in education. It is often referred to as argumentative skills since one must also be a critical thinker in order to form a sound argument. Many research studies explored students' critical thinking ability through their argumentative essays and found that topic familiarity plays a role in writing performance, especially at the university level. However, only few studies have explored how topic familiarity affects the argumentative skills of secondary students with different English writing ability levels in EFL context. To fill this gap, this study aims to investigate the effects of topic familiarity toward the written argumentative skill of Thai secondary students with different English writing abilities through two aspects: the quality or total scores of arguments and the complexity of argumentation. 37 Thai secondary students were categorized into low, moderate and high levels in accordance with their writing ability. They were assigned to write four argumentative essays responding to familiar and unfamiliar topics. The essays were graded in accordance with Stapleton & Wu's Analytic Scoring Rubric (2015) before t-test was applied. The findings revealed that the total scores of the essays on the familiar topics formed by the students at all levels were not significantly higher than those on the unfamiliar topics. However, their

essays on the familiar topics showed more complexity with higher argumentative elements. The findings indicated that the familiar topics encourage the application of more complex arguments but do not always contribute to higher quality of the arguments.

Keywords: Critical thinking, Argumentative skills, Topic familiarity, Toulmin Model

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Miss Supawadee Jaijon

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CHAPTER 1
INTRODUCTION

This chapter firstly discusses the definition of critical thinking and its connection to argumentative skills before presenting the evaluation of critical thinking ability through argumentative writing as the background to contextualize the topic. This chapter later reveals the impacts of language proficiency and topic familiarity on students writing performance in section 1.1. It also emphasizes the gap that previous studies tend to focus on the effects of language proficiency and topic familiarity on language production with slight attention to the content production and critical thinking ability in section 1.2. After that, this chapter proposes the research question and hypotheses in section 1.3 before presenting the objectives of the study in exploring the effects of topic familiarity on students' critical thinking ability at different language proficiency levels in section 1.4. Later, this chapter presents the significance of the study in section 1.5. Finally, the structure of this study is described in section 1.6**.**

1.1. Background

Critical thinking is one of the 21st century skills that students should acquire and it becomes the main goal in education (Anderson & Krathwohl, 2001). Critical thinking is important and necessary to be cultivated in classrooms including language classes as Halpern stated that students encounter and receive information in every class and each subject has its own matters and problems that challenge students to discuss and think about them carefully before believing it (Halpern, 1997). In language classes, a famous teaching approach is content-based instruction which believes that students can acquire four skills better through content (Grabe & Stroller, 1997). Therefore, EFL classrooms also provide a lot of opportunities to cultivate students' critical thinking skills since they learn language through contents which could be materials to develop students' critical thinking ability (Khatib et al., 2012; Stefanova et al., 2017). In Thai context, The Basic Education Core Curriculum B.E.

2551 (A.D. 2008) published by the Ministry of Education of Thailand stated that students since in secondary level should be able to express their opinions critically with appropriate justification as "*speak and write to describe their feelings and opinions about various matters, activities, experiences and news/incidents, as well as to provide appropriate justifications (2008, p.256)"* It indicated that one of the main qualities of Grade9 and Grade12 graduates as the ideal graduates from secondary and high school level is the ability to form a sound argument which is students feeling or opinions about various topics that supported by strong evidence as the justification. Accordingly, it could be said that the goal of second language learners in learning in a language class is not only the second language competence but also the critical thinking ability.

Nonetheless, critical thinking is hard to define as it is a complexed process that involves multiple thinking skills. Ennis (1985) defined that critical thinking is the reflective thinking and reasonable thinking to determine what is to believe or behave. To consider what is to believe, there are many thinking skills that involve in this process. Facione (1990) concluded that critical thinking involves multiple cognitive aspects. The cognitive skills consist of core skills and sub-skills. The six core skills categorized by Facione which also overlapped with the skills stated by other experts are *interpreting*, *analyzing*, *evaluating*, *inferencing*, *explaining* and *self-regulating* (Ennis, 1985; Facione, 1990; Paul, 1992; Paul & Elder, 2006). Critical thinking is often referred to as argumentative skills since in forming a sound argument or evaluating an argument, one must have a good reasoning and critical thinking (Cottrell, 2005). In forming an argument, it requires critical thinking skills such as selecting strong evidence, logical order constructing, and selecting effective language to present the argument. In evaluating the opposite stance or counter-argument to show that the writer acknowledges the opposite side and can protect their stance, learners need to observe and evaluate how an argument is constructed through the set of thinking abilities such as identifying reasons and conclusions, analyzing argumentation, evaluating the evidence and conclusion, and identifying flaws. Accordingly, critical thinking ability plays a major role in students' performance in forming an argument as critical thinking skills contribute to their argumentative skills

and hence the argument can also be the indicator of students' critical thinking ability (Cottrell, 2005).

As critical thinking is one of the important skills that students should be taught in a language class, it should also be assessed, not only the language proficiency. One way to assess the students' critical thinking ability is to evaluate it through their argument since the validity of the argument can represent the students' critical thinking ability. In forming an argument, writing is considered a more effective mode in evaluating students' critical thinking skills as it provides more opportunities for students in expressing their critical thoughts than oral mode that students have less time to think and respond (Paul & Elder, 2006; Wade, 1995). The type of writing that allows students to form an argument is called argumentative writing.

The argumentative writing or sometimes referred to as persuasive writing is necessary for academic studies (Jeffrey, 2016). It was also required in the standardized tests such as TOEFL, IELTS, and GRE which are the tests that students have to take for studying aboard. Argumentative writing is believed to be the most difficult genre as it requires critical thinking skills that come with multiple high-order thinking abilities in forming an argument (Cottrell, 2005; Preiss et al., 2013). In writing an argument, students need to present their stance by researching the topics to gather supporting information, carefully evaluate it, and select reliable evidence to support their claim. They should also identify the possible counter-argument and protect their stance to make their argument sounds stronger and more persuasive for the readers (Cottrell, 2005). The previous studies confirmed that critical thinking has a significant correlation with students' performance in argumentative writing (Jin & Fan, 2011; Yang & Wu, 2016; Mu, 2016). It means that the higher the critical thinking ability is, the better quality of the argument in argumentative writing should be.

One of the common factors that affect students' writing performance is the familiarity of writing conventions. The students should write better when they know the pattern and main elements of the targeted writing genre they encounter. There is empirical evidence from previous studies that the students' performance in argumentative essays was improved after they were taught the writing conventions of argumentative essays. Bacha adopted the Toulmin Model with the teaching cycle to

teach argumentative writing to Arabic students in Lebanon. The results suggested that the students' argumentative structure was improved and the participants were able to transfer the argumentative skills to new topics (Bacha, 2010). Qin conducted a research in the Turkish EFL context aiming to investigate the effectiveness of the Toulmin model in teaching argumentative writing in the EFL classroom. Sixteen Turkish EFL university students had been taught to write argumentative essays accord to the modified Toulmin model for 10 weeks. The findings indicated that the students' argumentative writings were improved. They were able to write more complexly with the application of important elements like counterargument and rebuttal (Qin, 2013).

Apart from the familiarity of writing conventions, previous studies reviewed that the main factors that affect EFL learners' display of their critical thinking are language proficiency and topic familiarity. A study conducted by Rear (2017) revealed that Japanese students 'critical thinking ability showed more when they debated in Japanese rather than in English. Similar to the findings from a research conducted by Gao (2015), the findings pointed out that Chinese students in English majors showed their critical thoughts in oral and writing tests more in Chinese language. Luk and Lin (2015) also conducted a study in Hong Kong context to investigate how senior secondary students with low-English proficiency presented their critical talk in Cantonese and English. The findings followed the previous studies that students expressed their critical thinking more in their native language while in English, some contents had been removed and the lexico-grammar structures were limited. These research proved that language proficiency affected the expression of students' critical thinking as they tended to show more critical thoughts when they use they native language which they have higher proficiency comparing to the second language.

Apart from language proficiency, Stepleton (2001) suggested that topic familiarity also plays a role in the quality of critical thinking. However, the previous studies tended to emphasize on the effect of topic familiarity on language production. In Yang and Kim's (2018) study, 123 Chinese college students were separated in to two group and one group was asked to write an argumentative essay on a familiar topic while the other write an argumentative essay on less familiar topic. The finding reveals that the students on the first group performed better in language production.

Similar to the research from Yuli and Halimi (2020), Eleventh-grade senior high school students in Indonesia were asked to write two argumentative essays on the topic that they had a personal experience with while the other topic involves the issue that they did not have experienced. The result show that their language production is performed better with the topic they are familiar with.

1.2. Statement of the problem

This study focuses on Thai students in secondary level since The Basic Education Core Curriculum B.E. 2551 (A.D. 2008) published by the Ministry of Education of Thailand stated that students in lower secondary level should be able to express their opinions critically with appropriate justification both in speaking and writing modes. It is expected that the ideal graduates from secondary and high school level is able to form a sound argument which is the students' feelings or opinions about various topics that supported by strong evidence as the justification. However, previous research in Thai context tended to focus on the argumentation of undergrads and pay less attention on secondary school students (Seensangworn & Chaya, 2017; Udomyamokkul, 2004).This is gap that this research interested to explore.

In exploring Thai students' argumentation skill, there could be explored in either speaking mode or writing mode. However, this study prefers to investigate in the students' writing mode as this mode is considered more effective in presenting and reinforcing critical thinking than the oral mode since it provides more time for students to respond to the issue and hence reflects students' critical thoughts better (Paul & Elder, 2006; Wade, 1995). To explore the students' argumentative skill through their argumentative writings, it should consider the factors that could impact on their writings' performance. The previous studies revealed that the students' writing performance in argumentative writings could be affected by some factors mainly the language proficiency and familiarity of topics. The previous research suggested that students tended to express more critical thinking skills with the language that they are more fluent (Gao, 2015; Luk and Lin, 2015; Rear, 2017,). Nonetheless, the previous research mainly compared the students' critical thoughts in their native language and second language with less attention on how the students

with different levels of English proficiency express their critical thinking in their second language to form an argument. The previous studies also focused on the topic familiarity and language production with less attention on how the different familiarities of topics affect the content or the students' critical thinking ability (Stepleton, 2001; Yang & Kim, 2018; Yuli &Halimi , 2020). To fill these gaps, this study aims to explore how Thai secondary school students with different language proficiencies conduct argumentative essays in their second language with the topic that they are familiar and less familiar with. Since this study explores the students' critical ability merely in written mode, they were classified in accordance with their English writing ability levels without considering other modes.

1.3. Research question and hypothesis

The researcher proposed one research question and one hypothesis as follows:

Research question1: Does a familiar topic encourage higher scores of arguments formed by students regardless of their writing ability?

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability.

Alternative Hypothesis (H1): The scores of arguments on a familiar topic are higher than those on an unfamiliar topic, regardless of students' writing ability.

Research question2: What are the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels?

1.4. Objectives of the study

There are two objectives of the study:

(1) To explore the impacts of topic familiarity on the quality or the soundness of the arguments of students with low, moderate, and high English writing abilities.

(2) To investigate the effects of the topic familiarity on the complexity of argumentation of students with low, moderate, and high English writing abilities through the application of argumentative elements.

1.5. Significance of the study

While the previous studies focus on the role of native language and second language toward the display of students' critical thinking, this research provides insights into the cognitive process of how the participants who are Thai secondary school students with different English writing abilities form an argument in their second language. This study also compares the students' critical thoughts when they deal with familiar and less familiar topics. The results from this study should be beneficial for a better understanding of how students at different English writing skills present their critical thoughts toward different topic familiarity. It is hoped that the results would also be useful for developing effective pedagogy and assessment to help students with different levels of language ability in the future.

Apart from the result, the tools applied in this study should also be useful for future research. Qin and Karabacak's modified Toulmin model provides the guideline of how an argument should be constructed which can be beneficial for writers, instructors, or researchers who need a model in organizing an argument. The Toulmin model was originally developed in western conventions but the modified version was adapted to be clearer and easier to follow especially for EFL learners (Nakkaew & Adunyarittigun, 2019; Qin&Karabacak, 2010). Nevertheless, the ability in using various modified Toulmin elements does not guarantee the quality of the argument as each claim can be supported by invalid evidence. Therefore, Stepleton and Wu's Analytic Scoring Rubric for Argumentative Writing (2015) which is the research instrument in this study should also be useful for writers, instructors or researchers in evaluating the quality of each claim and overall quality of the argument.

1.6 The structure of this study

In this chapter, the background of this study is discussed. The statement of the problem is also presented to highlight the gaps that this study aims to fill. After that, the research questions and hypotheses along with the objectives of the study are proposed. Finally, the significance of the study is pointed out.

In chapter two, the literature related to this study is reviewed in four sections: critical thinking, Toulmin model and argumentative writing, language proficiency and critical thinking, and topic familiarity and writing performance.

Chapter three presents the research methodology for this study. This chapter begins with the demographic information of the participants, research instruments, research design and procedure, and data analysis process.

In chapter four, the results from the data analysis of the argumentative essays written by the participants in each English writing ability level is presented and compared.

In chapter five, the discussion of the results is presented. The conclusion, recommendations for future research and limitations of study are also described.

CHAPTER 2
LITERATURE REVIEW

This chapter begins with definitions and the brief history of critical thinking in education in section 2.1. It also discusses the similarity of critical thinking and argumentative skills before presenting the role of critical thinking in second language classes and highlighting writing skills as the effective output for assessing critical thinking ability. Then, in section 2.2, Qin and Karabacak's modified Toulmin (2010) is introduced as an effective framework in forming an argument which was further adopted by Stapleton and Wu to create the Scoring Rubric for Argumentative Writing (2015) as a tool for evaluating an argument to reflect critical thinking ability. After that, the impact of language barrier on students' writing performance in previous studies is pointed out in section 2.3 before discussing about the effect of topic familiarity on writing performance in section 2.4.

2.1 Critical thinking

Critical thinking is one of the 21st century skills that student should be taught (Stefanova, Bobkina & Pérez, 2017). Nevertheless, the concept of critical thinking is hard to define as it involves wide ranges of thinking abilities. This section aims to discuss the definitions of critical thinking and provides the brief history of critical thinking in educational field before presenting the clearer concept of critical thinking as argumentative skills. This part also presents how critical thinking skills are embodied in language classrooms and points out why writing skills is an effective mode in assessing students' critical thinking ability.

The root of critical thinking is considered 2500 years ago when Socrates proposed that people should not rely on the authorities and should not be lured by the rhetoric without careful consideration of the content. This notion also leads to the famous 'Socratic questioning' which is the method in asking people deep questions to reflect their beliefs and justify to protect their stances by responding to the questions (as cited in Paul et al., 1997). Socratic questioning is recognized as the root of critical

thinking as it encourages people to reflect their thoughts and think more carefully and deeply to protect their claims which are the main features of critical thinking.

Critical thinking is recognized widely and at some point differently in three fields; philosophy, psychology, and education (Sternberg, 1986). Nonetheless, critical thinking has been embodied in many scholars' works in the field of education mostly implicitly until the 20th Century, the importance of critical thinking had been highlighted and the attempt to understand the nature critical thinking process had been done more explicitly. William Graham Sumner had published a powerful work Folkways revealing the tendency of human mind that they tended to think *sociocentrically* (as cited in Paul et al., 1997, p.10) and schools also play a role in cultivating the social consciousness and shaping people to think in the same pattern. He also pointed out the importance of critical thinking in education and daily life. From his work, it highlighted the need to teach students to be critical thinkers but the definition of critical thinking was still not stated explicitly until Johh Dewey's work. Dewey who is considered *the modern-day founder of the critical-thinking movement* (Sternberg, 1986, p.3) provided the explicit definition of critical thinking as reflective thinking under the careful consideration of belief or what is said to be knowledge before accepting it (Dewey, 1910).

Following Dewey's definition, Bloom (1956) proposed that critical thinking is a reflective thought but emphasized more on its function as problem-solving skills. In his famous taxonomy which is the classification of learners' skills as the educational learning objectives, he emphasized that students should not only be taught to acquire the basic level of skills such as comprehension, but should also acquire other skills which classified to be higher-order thinking skills. The taxonomy consists of six hierarchical level of thinking skills from the lowest level to the highest level respectively: *knowledge*, *comprehension*, *application*, *analysis* , *synthesis*, and *evaluation*. The lower-order levels are believed to be the base of the higher levels which means the higher-order thinking skills are more complexed and requires more thinking ability. It is also believed that the highest three levels represented critical thinking (Kennedy et al., 1991; Bloom et al., 1956). Later, the taxonomy was adopted and revised by Anderson and Krathwohl (2001). They had revised Bloom's taxonomy mainly in two aspects: the terminology and its structure. Regarding the terminology,

they changed nouns to verbs as remember (knowledge), understand (comprehension), apply (application), analyze (analysis), evaluate (evaluation), and create (synthesis). Anderson and Krathwohl stated that thinking is an active process but the former terminology given by Bloom used the nominal terms that indicated the outcomes of each level. Hence, the change of the terminology into active verb would emphasize the process of thinking more than the original version. Apart from the change of terminology, Anderson and Krathwohl also swapped the hierarchical positions of evaluate (evaluation) and create (synthesis). In the original version, evaluation was positioned on the top as the most complex thinking skills. However, in the revised taxonomy, create or in the original version as synthesis was placed the highest rank as the most complex skills with evaluation underneath. The writers explained that in creating something new, one must evaluate the exist information to see the weaknesses that inspire the creator to create something better or something newer. They also emphasized that creation requires a certain degree of evaluative skills while evaluative skills does not require creation which means creation is more complex than evaluation. Regarding to the critical thinking skill in the revised Bloom' taxonomy, Anderson and Krathwohl acknowledged that critical thinking is one of the main goal in education but was not placed in the taxonomy table because it involves several thinking skills in the table and touch the categories differently depending on the issue or activity. Hence, critical thinking should be considered *the prime substitutes* (Anderson & Krathwohl, 2001, p.270) for each thinking skill in the framework.

Nonetheless, Ennis (1985) pointed out that the concept of critical thinking in Bloom's taxonomy is still vague. He stated that critical thinking involves a range of thinking skills but could be defined broadly as the reflective thinking and reasonable thinking to determine what is to believe or behave. In deciding what is to believe or do requires a variety of thinking skills which were categorized more explicitly in Facione's (1990) work. Facione concluded that critical thinking involves the cognitive skills aspect and the dispositional aspect. The cognitive skills consist of core skills and sub-skills. The six core skills categorized by Facione which also overlapped with the skills stated by other experts are *interpretation* with some sub-skills such as clarifying meaning and categorizing information, *analyzing* with sub-skills such as detecting claims and data and analyzing the argument, *evaluating* involving the sub-

skills of assessing the credibility of the argument through the evaluation of claim and evidence, *inferencing* along with the sub-skills such as querying evidence and drawing conclusion, *explaining* with sub-skills as presenting an argument and justifying, and *self-regulating* with the ability in reflecting one own reasoning and self-correcting (Ennis, 1985, Facione, 1990, Paul, 1992, Paul & Elder, 2006). Apart from the cognitive skills that are constitutive to critical thinking, it also requires some particular dispositions that involves being open-minded (Ennis, 1985; Facione 1990; Paul, 1992), being fair-minded (Paul,1992), willingness in seeking reasons and perusing more evidence (Ennis, 1985; Facione, 1990; Paul,1992), and having empathy and understanding other people' stances (Paul, 1992).

From the definitions of critical thinking provided by the experts, the main features of critical thinking are the ability in *reflecting one's thoughts* (Paul et al., 1997; Dewey, 1910; Ennis, 1985; Facione, 1990) with careful consideration to *analyze* (Bloom, 1956; Ennis, 1985; Anderson & Krathwohl, 2001; Facione, 1990) and *evaluate* (Bloom, 1956; Anderson & Krathwohl, 2001; Facione, 1990) and seek evidence to justify or deny the beliefs or claims before accepting them (Ennis, 1985; Facione, 1990). According to these features, critical thinking is often referred as argumentative skills (Cottrell, 2005) and this is the definition of critical thinking adopted in this study. Sukardi and Agustrianti stated that argumentation skills can be seen through the argument quality which is how it is constructed and if it serves persuasive purpose (2017). An argument is a set of reasons providing to support or oppose one's idea with the aim of convincing others to agree with the speaker or the author. Kuhn and Crowell also defined some minimal standard of the competence in argumentation or argumentative skills that it does not only involve the presentation of one's stance with strong evidence but also *" identifying and weighing positive and negative attributes of contrasting positions on the issue, drawing on relevant evidence to inform the judgments involved*" (Kuhn & Crowell , 2011, p.546). To clarify how to achieve the goal in persuading others more clearly, the argument should be formed with three strong elements: *claim* referring to a clear statement stating the stance of the writer or the speaker and is supported by strong evidence, *counterargument* referring to the recognition of opposite stance that could make the claim becomes invalid with supporting evidence that show why the opposite stance could be true to

show that the writer has recognized the opposite point of view before protecting his/her claim with *rebuttal*, the response to the opposite stance that the claim is still true. This will weaken the opposite view and strengthen the claim (Qin & Karabacak, 2010). These elements are also adopted in Stepleton and Wu's the Analytic Scoring Rubric for Argumentative Writing (2015) in section 2.2.3 which is the research instrument in this study. These three elements also need to serve persuasive purpose so it requires the argument builders to be critical thinkers who can apply the critical thinking process to carefully reflect their belief or their stance to consider if it is true and what can be the evidence supports. They also need to analyze and evaluate the evidence if it is strong enough to support their claim. They should also think about the possible objections or counterarguments to point out the weak points or invalidity of the opposite stance to protect their own stance. Accordingly, it could be said that the argumentative skills requires the same set of thinking abilities as critical thinking skills. Therefore, the ability in forming an argument or argumentative skills could be an indicator of one's critical thinking ability.

2.1.1 Critical thinking in classroom

Critical thinking skills or argumentative skills are important in classrooms including language classes. Halpern (1997) emphasized the importance of the integration of critical thinking in classrooms as she stated that students encounter and consume information in every class and each subject has its own issues and problems that challenge students to consider carefully. According to the content-based instruction approach that believes that students can acquire four skills through content (Grabe & Stroller, 1997), EFL classroom provides a lot of opportunities to develop students' critical thinking as the language is taught through some contents which could be materials to enhance critical thinking skills (Khatib et al., 2012; Stefanova et al., 2017). Accordingly, it could be said that the ideal qualities of second language learners are not only the second language competence but also the critical thinking ability.

As critical thinking is a goal that students should acquire in language classes, the assessment of students' performance should also include critical thinking

skills apart from language proficiencies. To assess the students' critical ability, writing task is more effective than oral discussion. Writing mode is considered more effective in expressing and reinforcing critical thinking than the oral mode because oral discussion is not self-reflexive enough (Paul & Elder, 2006; Wade, 1995). Wade stated that the oral discussion is spontaneous which means the students do not have much time to consider their thought or reflex their thought carefully before expressing and the participation in oral discussion may be limited due to the number of the speakers and their shyness in participation. Accordingly, writing is selected as the platform to observe the participants' critical thinking skills in this study.

As this study aims to investigate the students' critical thinking ability, by asking the participants to write argumentative essays to detect the argumentative elements used and rate the quality or the soundness of their arguments, the results should reflect the complexity of the students' critical thinking skills through the number of argumentative elements and represent their critical thinking ability through the quality of the arguments.

2.2 Toulmin model and argumentative writing

This section presents the Toulmin model developed by Stephen Toulmin as an effective model presenting the important elements in forming a strong argument and the modified version adapted by Qin and Karabacak (2010) with its advantages comparing to the original one. After that, Stapleton and Wu's Analytic Scoring Rubric for Argumentative Writing (ASRAW) (2015) which was developed from the modified Toulmin model is introduced as an effective tool in assessing the participants' arguments in this study.

2.2.1 Toulmin model

Toulmin model, developed by an English philosopher Stephen Toulmin, is a structure of an effective argument. Toulmin model consists of six elements which are claim, data, warrant, backing, rebuttal, and qualifiers. Toulmin (2003) believed that the three basic elements in forming a sound argument are claim (thesis or statement), data (evidence, supporting details), warrant (logic or underlying

assumption that bridge claim and data). The secondary elements that are considered optional but make the argument stronger are backing (the statement that supports warrant), rebuttals (exceptions), and qualifiers (modal qualifiers that express the strength of the claim such as probably, presumably) (see figure 2.1).

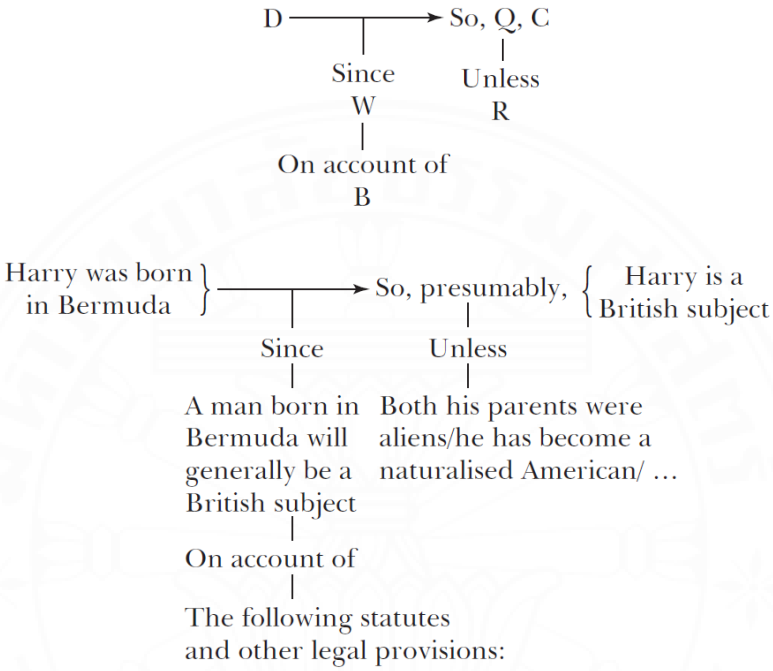

Figure 2.1 *Toulmin's model and examples (2003, p.91)*

From the model and examples of each element provided by Toulmin (2003), the claim (C) is that *Harry is a British subject*. To support this thesis, the evidence or data (D) provided is that *Harry was born in Burmuda.* The warrant (W) or logic underline this data that makes it works in supporting the claim is that *A man born in Bermuda will generally be a British subject*. The backing (B) that supports the warrant is *The following statutes and other legal provision*. However, there are some exceptions or conditions that could make this statement false which is called rebuttals(R) such as *Both his parents were aliens* then the laws would not work on them that the claim would be invalid. Therefore, from the data that *Harry was born in Burmuda,* it could be stated that he is *probably (*Q) (if this statement does not fall on the rebuttal) *a British subject.*

Although this model is famous as an effective model in forming a strong argument, it was criticized that it only focuses on presenting one's stance without regarding the counterargument and the response to protect one's stance from the opposite view (Nussbaum & Kardash, 2005; Wolfe & Britt, 2009). Nussbaum and Kardash (2005) mentioned that the argument could be more persuasive or reliable if the counterarguments or opposite views are mentioned and response back to show that our stance is still true or valid. Therefore, this model was later adapted and modified by Qin and Karabacak (2010).

2.2.2 The modified Toulmin model

The modified version was developed and presented in the L2 context by Qin and Karabacak (2010). The modified model consists of claim (thesis or statement), data (evidence, supporting details), counterargument claim (the opposite stance), counterargument data (evidence supporting counterargument claim), rebuttal claim (response to the counterargument claim), and rebuttal data (evidence supporting rebuttal claim) (see Table 2.1).

Table 2.1

Qin & Karabacak's definitions and examples of six Toulmin elements (2010,p.449)

Element	**Definition with illustrative examples**
Claim	**Definition:** An assertion in response to a contentious topic or problem **Example:** *Foreign language learning is not essential for internationalization.*
Data	**Definition:** Evidence to support a claim. It can take various forms, such as facts, statistics, anecdotes, research studies, expert opinions, definitions, analogies, and logical explanations. **Examples:** *1. An old Chinese lady with no knowledge of English active in international art exchange because of her great skill in paper-cutting. (anecdote)* *2. Countries such as Germany, France, Italy and Japan, though much more internationalized than China, do not place as much emphasis on English learning as China. (fact)*

Table 2.1

Qin & Karabacak's definitions and examples of six Toulmin elements (2010,p.449)

(Cont.)

Element	**Definition with illustrative examples**
Counterargument data	**Definition:** Evidence to support a counterargument claim **Examples:** *1. Under a 1990 law, all Spanish schoolchildren are now taught a foreign language (98% choose English) from the age of 8 and in some regions start at 6. (fact)* *2. In the Madrid region there are 26 bilingual schools and colleges in which courses—with the exception of Spanish literature and* *mathematics—are taught in English; by 2007 there will be 110. (fact)*
Rebuttal claim	**Definition:** Statements in which the writer responds to a counter-argument by pointing out the possible weakness in the claim, data, or warrant, such as logical fallacies, insufficient support, invalid assumptions, and immoral values (Ramage & Bean, 1999) **Example:** *The French government, one of the important European countries, is trying all the means to resist the spread of English and preserve their own language.*
Rebuttal data	**Definition:** Evidence to support a rebuttal claim **Examples:** *1. The French have spent billions on promoting their language in French-speaking territories in African and the Pacific. (fact)* *2. The French government has imposed sanctions on officials or agencies using Americanisms or English phrases where a French equivalent exists. (fact)*

The modified Toulmin model was considered to have multiple advantages. First of all, this modified version does not fall on the myside bias as the original one which means that it does not only emphasize how to make one's argument valid, but also recognizes the possible counterarguments and their reasons or data that make the opposite views possibly valid and respond back to show that our stance is still true or point out the invalidity of the opposite stance (Nussbaum & Kardash, 2005; Qin & Karabacak, 2010; Wolfe & Britt, 2009). The previous studies revealed that most of the EFL learners tended to focus on claims and data in forming an argument and

neglected counterarguments and rebuttals (Abdollahzadeh et al., 2017; Qin & Karabacak, 2010; Stepleton & Wu, 2015; Yilmaz, 2019; Zhang, 2018). Therefore, this model should help the students to pay more attention to counterarguments and how to respond to the opposite points of view.

Another advantage of the modified Toulmin model is that its structure is clear and easy to follow (Nakkaew & Adunyarittigun, 2019; Qin & Karabacak, 2010). In this model, its structure is less complicated comparing to the original version as there are three main claims which are claims (the writer's stance), counterargument claim (the opponent's point of view), and rebuttal claim (the response to the opposite stance), and each claim is followed by supporting data. The model is also logically organized which is easy for the beginners to follow. There is empirical evidence from previous studies that the model is effective in teaching argumentative writing in the EFL context. Qin (2013) conducted a research in the Turkish EFL context aiming to investigate the effectiveness of the Toulmin model in teaching argumentative writing in the EFL classroom. Sixteen Turkish EFL university students had been taught to write argumentative essays in accordant with the modified Toulmin model for 10 weeks. They were asked to participate in class debate and rewrite their argumentative essays they had written before the treatment. The findings indicated that the students' argumentative writing performance was improved as they were able to write more complexly with the application of important elements such as counterargument claims and rebuttal claims. Similar to a study in 2013, the researchers applied Qin and Karabacak' modified Toulmin model in their research to investigate if the genre-awareness could be achieved through three different teaching approaches: explicit instruction, implicit instruction and no instruction. The participants were second-year English major students in EFL classroom in Iran and had never experienced formal argumentative writing instruction before. The students were asked to compose two argumentative essays on two different topics. The data which was the pre-essays and post-essays from the three groups were analyzed. The finding revealed that students in experimental group who received explicit instruction show the greatest improvement (Khodabandeh et al., 2013).

From the review of the previous studies, this model helps the students form more complexed and sound argument by encouraging the students to recognize

of possible opposite viewpoints through the counterargument claim element and guide the students to response back which is the process of defending their stance through the rebuttal claim element. The previous studies proved that the students' arguments become more complexed and stronger when they are able to follow the secondary elements from the modified model (Khodabandeh et al., 2013; Qin, 2013). On the other hand, to evaluate the argumentative skills or critical thinking ability of students, the complexity of the use of the argumentative elements could also reflect their argumentative skills which means that this model can be used to analyze the students critical thinking ability by detecting the types of Toulmin elements used which indicates the complexity of the students' arguments and their critical thinking skills. However, this model alone may suggest the complexity of the students' thinking skills but does not guarantee the quality and validity of each element and the argument.

2.2.3 The Analytic Scoring Rubric for Argumentative Writing (ASRAW)

Although the Toulmin model has been modified to suit L2 context (Qin & Karabacak,2010), it is criticized that the surface structure or the use of Toulmin elements do not justify the quality of the argument (Abdollahzadeh et al., 2017; Nakkaew & Adunyarittigun, 2019; Stepleton & Wu, 2015). Qin and Karabacak (2010) who also acknowledged this limitation had developed a holistic scoring rubric for evaluating the overall quality of the argument. Nevertheless, as the rubric can be applied to evaluate the argument's quality only in the overall picture, it fails to assess the soundness of each claim which means the total score that is graded according to the rubric could be skeptical. It could also be difficult for the raters to grade from the holistic description. Stapleton and Wu acknowledged this difficulty and developed the Analytic Scoring Rubric for Argumentative Writing (ASRAW) (2015) to evaluate the quality of the argument by grading the quality of each claim (claims, argument claims, rebuttal claims) and the quantity of relevant data or evidence to validate the soundness of argument (see Table 2.2).

Table 2.2

Stapleton & Wu's Analytic Scoring Rubric for Argumentative Writing (2015, p.20)

1.Claim(s) (5%)	Score: 5 States point(s) of view			Score: 0 Does not state point(s) of view	
2. Data (25%)	Score: 25 a. Provides multiple reasons for the claim(s), and b. All reasons are sound/acceptable and free of irrelevancies	Score: 20 a. Provides multiple reasons for the claim(s), and b. Most reasons are sound/acceptable and free of irrelevancies, but one or two are weak	Score: 15 a. Provides one to two reasons for the claim(s), and b. Some reasons are sound/acceptable, but some are weak or irrelevant	Score: 10 a. Provides only one reason for the claim(s), or b. The reason provided is weak or irrelevant	Score: 0 a. No reasons are provided for the claim(s); or b. None of the reasons are relevant to/support the claim(s)
3. Counterargument Claim(s)/Alternative Point(s) of View(10%)	Score: 10 Provides counterargument claim(s)/alternative view(s)			Score: 0 Does not provide counterargument claim(s)/alternative view(s)	
4. Counterargument Data/Supporting Reasons for Alternative Point(s) of View(25%)	Score: 25 a. Provides multiple reasons for the counterargument claim(s) /alternative view(s), and b. All counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies	Score: 20 a. Provides multiple reasons for the counterargument claim(s)/alternative view(s), and b. Most counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies, but one or two are weak	Score: 15 a. Provides one to two reasons for the counterargument claim(s) /alternative view(s), and b. Some counterarguments/reasons for the alternative view(s) are sound/acceptable, but some are weak or irrelevant	Score: 10 a. Provides only one reason for the counterargument claim(s)/alternative view(s), or b. The counterargument/reason for the alternative view is weak or irrelevant	Score: 0 a. No reasons are provided for the counterargument claim(s)/alternative view(s); or b. None of the reasons are relevant to/support the counterargument claim(s)/alternative view(s)
5. Rebuttal Claim(s) (10%)	Score: 10 Provides rebuttal claim(s)			Score: 0 Does not provide rebuttal claim(s)	
6. Rebuttal Data[a] (25%)	Score: 25 a. Refutes/points out the weaknesses of all the counterarguments, and b. All rebuttals are sound/acceptable c. The reasoning quality of all the rebuttals are stronger than that of the counterarguments	Score: 20 a. Refutes/points out the weaknesses of all the counterarguments, and b. Most rebuttals are sound/acceptable, but one or two are weak c. The reasoning quality of most rebuttals are stronger than that of the counterarguments, while one or two are equal to that of the counterarguments	Score: 15 a. Refutes/points out the weaknesses of all the counterarguments, and b. Some rebuttals are sound/acceptable, but some are weak c. The reasoning quality of some rebuttals are stronger than that of the counterarguments, while some are weaker than that of the counterarguments	Score: 10 a. Refutes/points out the weaknesses of some counterarguments, or b. Few of the rebuttals are sound/acceptable; most of them are weak, or c. The reasoning quality of most rebuttals are weaker than that of the counterarguments	Score: 0 a. No rebuttals are provided; or b. None of the rebuttals can refute the counterarguments

Note. [a] An implicit requirement of rebuttal data is subsumed under the requirements of row 4 "Counterargument Data" , that is, each piece of rebuttal data should be aligned with each piece of counterargument data in terms of both quantity and logic.

In applying this rubric to rate an argument, the raters should begin with identifying claims and data supporting each claim. Then, the raters can rate each claim along with its supported data in accordant with the description provided in the rubric before calculating the total score. For example, if the student states a claim explicitly and supports this claim with one reason, he should obtain 15 points from stating the claim clearly which makes him get five scores as the criteria in ***1.Claim (s)*** (see Table 2.2) and ten scores from providing one reason for the claim in accordant with the description in ***2. Data*** (see Table 2.2). Then, other claims detected either counterargument claims or rebuttal claims along with its supporting evidence should be evaluated accordingly before counting the total scores.

Since this rubric provides elaborate description for assessing an argument, it was also adopted by other researchers as a tool for data analysis. Abdollahzadeh, Farsani, and Beikmohammadi (2017) applied this rubric to explore the argumentative writing behavior of Iranian graduate learners by investigating

correlation between the frequency of Toulmin elements, the argumentative essays' overall quality, and the soundness of the argument. 150 Iranian graduate learners of English were asked to write an argumentative essay on a social issue at least 400 words. The findings indicated that the variety of Toulmin elements application showed a positive correlation with the overall quality of argumentative essays. The overall quality also had a positive correlation with the soundness of the argument. Accordingly, this rubric was chosen as a research instrument in evaluating the participants' argumentative essays in this study.

2.3 Language proficiency and critical thinking

This section presents the impact of language proficiency on L2 learners' critical thinking skills through the investigation of their writing performance in L1 and L2 in previous studies and points out the gap that no studies have explored the effect of L2 proficiency levels on students' critical thinking ability

Some researchers believe that critical thinking is not universal skills (Fox, 1997, Egege & Kutieleh, 2004). Fox presented the interview of a university professor who had highly experiences working with international students. The professor mentioned that the style of writing of nonnative students was mostly descriptive and lack of critical thought (Fox, 1997). There were various explanations on the absence of critical thinking in non-Western students. One explanation was that critical thinking was the heritage of Greek philosophic tradition (Egege & Kutieleh, 2004). Lloyd (1996) as cited by Egege and Kutieleh (2004) explained that the famous philosophers such as Socrates, Plato, and Aristotle employed critical thinking skills in forming their argument, justifying their argument, and also defeating with other philosophical theories. The Greek traditional way of thinking is quite argumentative with linear logic which Lloyd claimed that it was different from Asian traditional way of thinking such as Chinese tradition that depended on non-linear reasoning and analogy. Western reasoning is not only different from Asian traditional way of thinking but also possesses a sense of superiority as Lloyd used the term *good reasoning* (Egege & Kutieleh, 2004, p.80).

Nonetheless, some studies revealed that the reason why critical thinking seems to be absent from EFL leaners when they use their second language is not the culture but mainly the language barrier. A study conducted by Rear (2017) showed that Japanese students showed more critical thinking skills through the debate in their native language rather than in English. Gao (2015) also conducted a similar research investigating critical thinking ability of Chinese students in their L1 and L2. The findings revealed that the participants showed their critical thoughts in oral and writing exams more in their native language. Luk and Lin (2015) conducted a research in Hong Kong to explore how senior secondary students with low English proficiency level expressed their critical talk in Cantonese and English. Similar to Gao's study, the findings revealed that the students showed their critical thinking skills more when they spoke in Cantonese while in English, some contents had been cut out and the lexico-grammar structures were limited as they are more comfortable with their native language.

Nevertheless, the previous studies mainly compare students' critical thinking or argumentative skills in their native and second languages. No previous studies have explored the effect of L2 leaners' language proficiency levels on their critical thinking skills. This is the gap this research aims to fill.

2.4 Topic familiarity and writing performance

This section describes the effect of topic familiarity on writing performance by reviewing the impact of topic familiarity and language production in previous studies. Then, it highlights the gap that no previous studies have investigated the effect of topic familiarity with content production.

Not only the language barrier that affects L2 learners' critical thinking ability, but the topic familiarity is also believed to affect the students' writing performance. Yang and Kim (2018) defined that the familiar topics mean the topics that involve common matters or every day issues the writers can relate with at a point of time or current situations while the less familiar topics refer to the topics that require them to write about the issues to the group they are less familiar with. Stepleton (2001)

believed that students are likely to show more critical thinking ability when they write about the topics they can relate more.

Nonetheless, the previous studies tend to emphasize on the effect of the topic familiarity with the language production more than the content. Yang and Kim (2018) conducted a study investigating the impact of topic familiarity on lexical complexity, syntactic complexity, accuracy, and fluency in second language of 123 Chinese college students. The participants were separated into two groups. One group was required to write about the familiar topic responding to the issue about college students which the participants were expected to be able to engage with while the other group was asked to write about less familiar topic responding to the problem of people in underdeveloped areas which they should be less familiar with. The finding revealed that students who were required to write about the more familiar topic showed higher lexical complexity in their essays while the performance in accuracy, fluency, and syntactic complexity did not seem to be affected by the topic familiarity. On the other hand, the research conducted by Salimi and Fatollahnejad (2012) investigating the effect of strategic planning and topic familiarity on Iranian Intermediate learners' written performance revealed that the familiarity of topic did not have significant effect on learners' language production in terms of complexity, accuracy, and fluency. In 2020, Yuli and Halimi conducted a research that emphasized the positive effect of topic familiarity and language production. Eleventh-grade senior high school students in Indonesia were assigned to write two essays responding to a familiar topic which the students had experienced while the other one had not. The findings showed that the familiar topic related to personal experience significantly affects the student's vocabulary production positively. Interestingly, the result revealed that the students organized their ideas more logically with the not-yet experience topic. The researcher explained that the students tended to include many details on the familiar topic that they had personal experiences and paid less attention to the idea organization. Moreover, the result from the questionnaires investigating the students' perceptions on the given topics showed that the students had positive perception of the writing task with the topic that they had experienced. The participants explained that it was easier for them to express their ideas and to select the right words. From this study, it showed that the familiarity of topics does not

affect only the language production but also the expression of ideas and logical thoughts.

The effect of the topic familiarity on critical thinking got attention in Stapleton's research (2001) and Indah's study (2017). Stapleton investigated the impact of content familiarity on students' critical thinking ability. 45 Japanese undergrads were asked to compose argumentative essays on the topic regarding rice importation in Japan which is considered a familiar topic since it is the issue that was widely discuss in Japan at that time. Another topic was the gun control in America which in a way represent an un familiar topic as the issue takes place outside the participants'' country. The findings revealed that familiar topics encourage more critical thinking of the student participants. The contents on the familiar topic were rich with higher numbers and more variety of claims and supporting data. They also applied many types of references including websites, agricultural operative, national and local governments, newspaper, and NGOs on the familiar topic whilst only NGOs and newspaper were employed as the references in the unfamiliar topic. However, the counterarguments and refutation of the opposite stance were found more on the unfamiliar topic. The fallacies were also found more on the familiar topics and all of them related to personal emotion involvement. On the contrary, the fallacies on the unfamiliar topic appeared less and none of them related to emotional appeals. The fallacies on the familiar topics tended to be more of conventional types which are oversimplification and irrelevancies. Stapleton concluded that overall, familiar topics boost more application of claim, data and references. The familiar topics also encourage the variety of data and evidence which make the arguments become stronger. However, the unfamiliar topics tended to enhance more counter arguments and fewer fallacies. The positive impact of the familiar topics on critical thinking was also confirmed in Indah's study (2017). The study explored the relationship of critical thinking, writing performance and topic familiarity of Indonesian students at an Islamic university. The participants wrote essays on a student initiated topic as a familiar topic and a teacher generated topic as an unfamiliar topic. The findings indicated that the familiar topic which was initiated by the participants support more application of critical thinking skills. The participants could elaborate more ideas and got higher total scores on their argumentative essays.

Unfortunately, most previous research mainly focuses on the impact of topic familiarity and language use. Only few studies emphasize the effect of the familiarity of topics on the content production and critical thoughts and focus on the students at the university level. None of the previous studies investigated the influence of topic familiarity toward secondary students' argumentative skills in EFL context. This is the main gap that this research aims to fill.

2.5 Conclusion

This chapter provided the definition and the brief history of critical thinking in educational field. From the review of its definitions, it could be concluded critical thinking skills and argumentative skills are identical as it touches the same set of thinking skills such as reflecting, analyzing and evaluating. After that, it presented the integration of critical thinking skills in language classrooms through the content-based approach. It also pointed out that students' critical thinking could be shown more in writing task comparing to oral discussion which encouraged the researcher to select writing mode in collecting data in order to assess the students' critical thinking ability. This chapter also presented Toulmin model both the original version and Qin and Karabacak's modified version (2010) that have more advantages. Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) which was developed from the effective modified Toulmin was later presented as the effective tool in assessing students' argumentative essays and hence selected as the research instrument in analyzing the data in this study. This chapter later discussed the effects of language proficiency on students' writing performance through the review of previous studies that mainly focused on the impact of native and second languages rather than the second language proficiency levels which is the main gap that this research aims to investigate. Finally, this chapter presented the impact of topic familiarity on the students' writing production through the review of previous studies that mostly pay attention to the effect of the familiarity of topics on language production instead the content. This study then also aims to fill this gap by investigating the effect of topic

familiarity and the critical skills through exploring the content production. The research methodology will be introduced in Chapter 3 and the results and discussion will be presented in Chapter4 and 5.

CHAPTER 3
RESEARCH METHODOLOGY

This study aims to investigate critical thinking ability of students with different English writing ability through the evaluation of their arguments. Students' argumentative essays are analyzed with the implementation of Stepleton and Wu's Analytic Scoring Rubric for Argumentative Writing (2015) (See Appendix B) which was developed from Qin and Karabacak's modified Toulmin elements (2010) (See Appendix A). This rubric was chosen as the tool in analyzing data since it reveals important elements in forming an argument and also provides description of how each claim along with data should be rated to grade the quality of the argument. The application of this tool is aimed to provide the answer to the research questions and to verify the hypotheses which are as follows:

Research question1: Does a familiar topic encourage higher scores of arguments formed by students regardless of their writing ability?

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability.

Alternative Hypothesis (H1): The scores of arguments on a familiar topic are higher than those on an unfamiliar topic, regardless of students' writing ability.

Research question2: What are the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels?

Responding to the research questions and the hypotheses, this chapter presents research methodology in five aspects. First, it presents the research design in section 3.1. Then, the demographic information of the participants and how the participants were categorized according to English writing ability are shown in section 3.2. In section 3.3, the explicit instruction on argumentative writing is explained in details. After that, data collection and analysis are proposed in section 3.4. Lastly, the conclusion is presented in section 3.5.

3.1 Research Design

In order to answer the research questions and to verity the hypotheses, a pre-experimental design, the one-group pre-test-post-test design, was employed. To investigate the complexity of the students' arguments responding to familiar and unfamiliar topics and explore if the familiar topic encourage higher quality arguments, the topic familiarity is considered the main independent variable in this research.

As students also received intensive treatment on the argumentative writing convention to guide them how to form an argumentative essay, they were asked to compose the essays responding to familiar and unfamiliar topics before and after instruction. However, this study was designed slightly different from the convention of one-group pre-test-post-test design that aims to investigate the change of the results on post-test after receiving the intervention comparing to the pre-test. In the present research, the independent variable is topic familiarity. Accordingly, the essays on familiar and unfamiliar topics were analyzed and compared. This is in order to check if students' writing performance differs when encountering topics with different degree of familiarity.

Then, the results before instruction or the pre-test results were compared with those after the intensive instruction or the post-test results to see the consistency of the results. If the results show some consistency, that is the scores of the arguments on the familiar topic are higher both before and after the instruction, it could be concluded that the familiar topic has a strong impact on the quality of the arguments. However, if the results from the pre-tests and post-testes were not consistent, it could be explained that there might be other variables that have stronger influences on the students' argumentative skill such as the knowledge about the writing convention.

Then, the essays were further analysed. The quality of the essays was graded in accordance with the Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015). The analysis of the overall arguments' quality should represent the quality of reasoning and logical thoughts of the writers when responding to familiar and unfamiliar topics. To verify the hypotheses, t-test was applied to examine if there is a significant difference on the scores of the arguments responding to familiar and unfamiliar topics.

Regarding the second research question concerning the complexity of the arguments, the data were coded in accordance with the modified Toulmin elements before the frequencies of the modified Toulmin elements presented in students' essays were analysed. From this process, the findings should indicate the tendency of how students with different writing abilities applied the argumentative elements to convince the readers. The complexity of the arguments then should represent the complexity of the participants' thinking skills.

3.2 Participants

The participants of this study included thirty-seven secondary students who were studying in Grade 9 in a private bilingual school in a rural area in Thailand. These ninth-grade students were selected as the participants of this research because studying at this level, they are expected to firmly attain critical thinking ability. However, this target still receives slight attention from previous investigations. The Basic Education Core Curriculum B.E. 2551 (A.D. 2008) published by the Ministry of Education of Thailand states that students at lower secondary level should be able to express their opinions critically with appropriate justification as "*speak and write to describe their feelings and opinions about various matters, activities, experiences and news/incidents, as well as to provide appropriate justifications*"(2008, p.256). It indicated that one of the main qualities of graduates from the 9th grade (the secondary level) and the 12th grade (the high school level) is the ability in forming a sound argument which reflects the students' feelings or opinions about various topics supported by strong evidence as the way of justification. Nonetheless, the previous research suggested that Thai students still struggle with argumentative writing due to the lack of explicit instruction (Kitvilairat and Modehiran, 2018). Unfortunately, no studies have paid attention on how they struggle and if there are any differences of how students with different language proficiencies form the arguments with respect to different types of topics. This study then targets the 9th grade students with different English writing ability levels aiming to provide insight information regarding how they apply critical thinking ability in forming an argument. Since this study explores solely the students' argumentative skill in written mode, they were grouped by their

English writing abilities. If they were classified based on their English proficiency in four skills, it is possible that some of them may be rated as high proficiency students because of their proficiency in other modes, but less on writing skills. While some of them may possess higher writing ability but less proficiency on other modes which made them were rated as less proficiency students. Accordingly, the participants' English proficiencies were categorized into three levels: low, moderate and high in accordance with their English writing ability according to the writing part in Cambridge Key English Test (KET).

3.2.1 Level of English writing ability based on performances in the writing part of KET test

Cambridge Key English Test (KET) is the examination provided by Cambridge Assessment English. It aims to test students at pre-intermediate English proficiency level corresponding to Level A2 of the Common European Framework of Reference (CEFR). Since the Ministry of Education of Thailand stated that the targeted English proficiency level of Thai students in Grade 9 is A2 level (English Language Institute (OBEC), p.2), KET test was adopted in categorizing students' writing ability as it corresponds to the expected language proficiency of the participants. The scores from the writing parts of the KET test were later converted to CEFR levels in order to rank the students' writing ability levels. The Common European Framework of Reference (CEFR) is one of the international standards used to reflect students' English ability. It categorizes learners' English proficiency into six levels from A1 (beginners) to C2 (native level). Since the students in grade9 were expected to achieve the level A2, the participants whose KET writing scores reach this level were categorizing as moderate writing ability. The students whose fall on A1 or lower level were ranked as low writing ability. The participants whose scores achieve B1 or higher CEFR level were grouped as high writing ability.

The assessment of writing scale for the writing part in KET Test was presented on the official website of Cambridge Assessment English accordingly,

Table 3.1

The assessment of writing scale (Cambridge Assessment English)

Assessment of Writing scale

Band	Content	Organisation	Language
5	All content is relevant to the task. Target reader is fully informed.	Text is connected and coherent, using basic linking words and a limited number of cohesive devices.	Uses everyday vocabulary generally appropriately, while occasionally overusing certain lexis. Uses simple grammatical forms with a good degree of control. While errors are noticeable, meaning can still be determined.
4	*Performance shares features of Bands 3 and 5.*		
3	Minor irrelevances and/or omissions may be present. Target reader is on the whole informed.	Text is connected using basic, high-frequency linking words.	Uses basic vocabulary reasonably appropriately. Uses simple grammatical forms with some degree of control. Errors may impede meaning at times.
2	*Performance shares features of Bands 1 and 3.*		
1	Irrelevances and misinterpretation of task may be present. Target reader is minimally informed.	Production unlikely to be connected, though punctuation and simple connectors (i.e. 'and') may on occasion be used.	Produces basic vocabulary of isolated words and phrases. Produces few simple grammatical forms with only limited control.
0	Content is totally irrelevant. Target reader is not informed.	*Performance below Band 1.*	

The writing assessment scale as shown in Table 3.1 was applied by the researcher in rating the participants' writing tests. According to the scale, there are three criteria including content, organization, and language. In the current study, each criterion scores 0-5, without half marks were assigned. KET's writing test consists of two tasks with possible highest scores of 15 marks for each part. The total score of the writing test is 30 marks.

According to "*A guide to converting practice test scores to Cambridge English Scale scores*" published on Cambridge Assessment English official website, the scores in the writing section can be converted to CEFR level as follows:

Table 3.2

The equation of KET's writing test score to CEFR levels (Cambridge Assessment English, p2)

Practice test score	Cambridge English Scale score	CEFR level
26	140	Level B1
18	120	Level A2
12	100	Level A1
8	82*	–

*minimum score reported for A2 Key

Table 3.2 presents the equation of KET's writing test scores to CEFR level. As KET test especially aims to test students' English proficiency at A2 level, students need to achieve at least 18 marks in their writing tests to pass it. The ability is categorized into A1 level if their scores are between 12-17 marks. In case students' writings are rated at least 26 marks, their ability is categorized into B1 level.

In the present study, in order to distinguish the student participants in accordance with their English writing ability, CEFR levels were equated to high, moderate, and low levels. Those participants whose writing ability is at A2 level were categorized into the moderate level. This is because students in Grade9 are expected to achieve A2 as the standard for their English proficiency (English Language Institute (OBEC), p.2). Following the standard, if their ability is below A2 level, they were categorized into the low level while those participants who reached B1 level, they were categorized into the high level. The complete equation is summarized as shown in Table 3.3.

Table 3.3

Students' English writing ability levels in accordance with CEFR level

CEFR level	Writing proficiency level
B1	high
A2	moderate
A1or lower	low

3.3 Explicit instruction on argumentative writing

As it was confirmed in Bacha's (2010) and Qin's (2013) studies that one of the essential factors that affect the students writing performance is the knowledge of the writing convention on a targeted genre. In the current study, the student participants were also received an intensive instruction on the argumentative writing which was aimed to provide guidance to argument forming. As the participants had limited time in attending the course, the instruction was designed intensively with necessary teaching process and strategies to help them gain sufficient knowledge on argumentative essay writing. Although the course took 3 periods 50 minutes each, it was considered enough for the students to have some ideas on how to form convincing arguments since the main independent varieble of this study is not the instruction. The teaching steps were designed based on the instruction process and strategies that were proved effective in enhancing students' writing performance on the previous research (Bacha, 2010; Qin, 2013). The details of teaching steps on each period were included in the lesson plans in Appendix C. The teaching process was concluded as follows:

On period1, the students were introduced to the Toulmin elements through a daily life topic such as 'How to persuade your parents to buy you a new laptop' (adapted from the original topic suggested by Qin (2013, p.23), 'How to persuade your parents to buy you a new car'). They were also provided with a worksheet that allowed them to write the meaning of each element from their understanding and write short examples of each modified Toulmin element based on the given daily life topic. The students were able to see the overall picture and the concept of the important elements that make an argument strong.

On period2, the students were provided with two short reading passages presenting two controversial issues and were required to identify the elements in the passages (Qin, 2013). The students were also provided two worksheets that allow them to write the extracted sentences in each passage that represents each modified Toulmin element. They were later asked to discuss their answers with the class. The researcher also asked the students to consider the idea organization of two passages and compare the patterns. The researcher then introduced the three basic idea

organizations in forming an argument: starting with the opposite stance and end with the writer's stance, starting with the writer's stance and end with the other side's argument, and dealing with each counterargument separately in single paragraphs.

On period3, the students were introduced to the Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) to help them analyze the quality and soundness of each claim from the previous exercise. They were also required to grade the quality of the reading passages individually before discussing about the quality of each passage in class with other participants and the researcher.

3.4 Data collection and analysis

In designing the data collection process, the participants were assigned to write four argumentative essays responding to a familiar topic with two guiding questions and a less familiar topic with two guiding questions. However, the previous studies had pointed out that one of the common factors that affect the students writing performance in a specific genre is the familiarity of writing conventions (Bacha,2010; Qin, 2013). Accordingly, the students were also taught with the writing conventions of argumentative essays. Qin and Karabacak's modified Toulmin model (2010) was employed as the model in the treatment process so the students would receive the same knowledge of essential elements in composing argumentative essays. They were assigned to write two argumentative essays responding to a familiar topic and a less familiar one before the treatment and write other two essays responding to the familiar topic and the less familiar topic but different guiding questions after the treatment.

In terms of the topic familiarity, Yuli and Halimi (2020) defined that familiar topics refer to the topics that the writers have personal experiences with while the less familiar topics refer to the topics that they do not have experiences with. In this study, the topic that represents the familiar topic selected by the researcher is 'studying' since the participants were the students while the topic that represent less degree of familiarity is 'working' as they have not experienced the status as the workers yet.

Regarding the familiar topic about "studying", the question generated from this topic that students were required to write before the treatment is "Do you agree

with the statement, ‘Studying at school is better than studying online’?” This question definitely represents high degree of familiarity as the participants had experienced studying at school normally and studying online in the time of the COVID-19 pandemic in Thailand in 2020-2021. The other question representing the familiar topic that the participants were assigned to write after the treatment is “Do you agree with the statement, ‘Studying in Math-Science program is better than English-Chinese program’?” This question was assumed to be familiar among the participants as 20 students are studying in English-Chinese program and the other 17 students are in Math-Science program. They also experienced the time that they had to decide which program they should apply for when they were in grade7.

For the unfamiliar topic, the question derived from the topic of ‘working’ and the participants were asked to respond before the treatment is “Do you agree with the statement, ‘Being a full-time employee is better than being a freelancer’?” As the students still do not have any experiences in working either as a full-time employee or a freelancer, this question represents low degree of familiarity. Another question that the participants were required to write after the treatment is “Do you agree with the statement, ‘Being a business owner is better than being an employee’?” Since the participants have experienced neither being a business owner nor an employee, this question represents less familiarity.

At the initial phrase of data collection, the participants were asked for their consent to participate in this research for 7 periods, 50 minutes for each period, in their spare time after the regular classes. The three phases of data collection are as follows:

During periods one and two, the participants were asked to write two essays responding to the question representing a familiar topic, “Do you agree with the statement, ‘Studying at school is better than studying online’?” and the question “Do you agree with the statement, ‘Being a full-time employee is better than being a freelancer’?” which represents an unfamiliar topic. They were informed to write at least 100 words which was the minimal word count in their mid-term and final examinations at school. They also had to write within 40 minutes for each essay. The participants were not allowed to use any translation devices but they were allowed to ask about the definition of the keywords in the questions such as the meaning of a

full-time employee or a freelancer, and the researcher would inform them only the basic meaning without discussing any pros and cons of the subjects to maintain the originality of the participants' arguments.

During periods three to five, the participants received the intensive instruction of the argumentative writing conventions with the modified Toulmin model. Although this study aims to investigate the effect of the topic familiarity on students' argumentative skill, it is undeniable that the knowledge in writing conventions of specific genres can also affect the students' writing performance (Bacha,2010; Qin, 2013). Accordingly, the students should be taught with the writing convention of argumentative essays. As the treatment could be another factor, the students' writing performance responding to the topics with different levels of familiarity before and after the treatment would be compared. The intensive instruction took three periods, 50 minutes for each period.

During periods six and seven, the participants were assigned to write two argumentative essays responding to the question representing a familiar topic, "Do you agree with this statement, 'Studying in Math-Science program is better than English-Chinese program'?" and the question representing an umfamiliar topic, "Do you agree with this statement, 'Being a business owner is better than being an employee'?". The minimal word count was 100 words. The participants had 40 minutes to finish each essay.

To answer the research questions and test the hypotheses, the data were analyzed in two steps. Responding to the first research question and the hypotheses on the effect of topic familiarity toward the scores or quality of the arguments, the data were coded the argumentative elements and graded based on the description on Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) which is the research instrument of this study. The scores of the essays on familiar and unfamiliar topics were compared in each phrase, before instruction and after instruction. After that, the results of the pre-tests and post-tests were compared to see the consistency. For example, if the essays on familiar topics received higher scores both before and after instruction, the results would reject the null hypothesis and confirm the alternative hypothesis. Regarding the second research question on the complexity of the arguments formed by students when encountering familiar and unfamiliar topics,

the essay of each student was analyzed the pattern based on the types of the modified Toulmin used. After that, the tendency of how students in each group form their arguments responding to familiar and unfamiliar topics based on the argumentative elements employed were presented. The details of each data analysis process were presented as follows:

3.4.1 Data analysis on the quality of arguments

This section presents the application of The Analytic Scoring Rubric for Argumentative Writing (Stapleton&Wu, 2015) which is the instrument tool in coding the modified Toulmin elements in the students' essays and analyzing the quality of the elements through scoring the arguments in accordance with the description in the rubric. The quality of the argument should point out the reasoning and logical thinking abilities of students.

The first research question in this study is *"Is a familiar topic encourages higher scores of arguments formed by students regardless of their writing ability?"*

The null hypothesis (H0) is *"There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability".*

The alternative hypothesis (H1) is *"The scores of arguments on a familiar topic are higher than those on an unfamiliar topic, regardless of students' writing ability".*

On this process, the objective is to explore if the scores of the essays on the familiar topic is significantly higher than those on the unfamiliar topic. To reach this goal, the data were analyzed in three phrases as follows:

On the first phrase, the data were coded the argumentative elements in accordance with the six modified Toulmin elements which as proposed on the Analytic Scoring Rubric for Argumentative Writing (Stapleton&Wu, 2015). The six elements consist of claim (thesis or statement), data (evidence, supporting details), counterargument claim (the opposite stance), counterargument data (evidence supporting counterargument claim), rebuttal claim (response to the counterargument claim), and rebuttal data (evidence supporting rebuttal claim). An example from a participant's essay was presented to show how the data was analyzed through the modified Toulmin model accordingly,

I disagree with the statement, studying in Math-Science program is better than English-Chinese program. [In my opinion, I think English-Chinese program is better than Math-Science program] ***(Claim)*** *[because if you studying in Math-science program in the future it will fixed you work such as if you learn to be a doctor when you finished studying you must be a doctor and you can't do any work but if you studying English-Chinese program you will have freedom to do another work]* ***(data1)*** *and [you can speak with people from another country you will have friends!]* ***(data2)*** *If you learn English-Chinese program you will have a chance more than Math-Science program. [But many people in Thailand think studying in Math-Science program is better than English-Chinese program]* ***(counterargument claim)*** *because [they think it will have a good work.]* ***(counterargument data1)***

As shown in the excerpt, in accordance with the definition of the modified elements along with examples provided by Qin and Karabacak (2010) as discussed in chapter 2, there is one *claim*, "*In my opinion, I think English-Chinese program is better than Math-Science program"* which was stated directly as the stance of the writer and was supported by two *data*. The first *data* concerns the flexibility in choosing works as "*because if you studying in Math-science program in the future it will fixed you work such as if you learn to be a doctor when you finished studying you must be a doctor and you can't do any work but if you studying English-Chinese program you will have freedom to do another work".* The second *data* regards the benefit of the ability in speaking foreign languages as *"you can speak with people from another country you will have friends!"* There is one *counterargument claim*, "*But many people in Thailand think studying in Math-Science program is better than English-Chinese program*" functioning as the opposite stance and one *counterargument data, "they think it will have a good work."* backing up why the counterargument claim could be true. From this process, the modified Toulmin elements used in this example essay were detected and were later graded on the second phrase.

On the second phrase, Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) was applied to evaluate the quality of each claim along

with data in accordance with the description in the rubric. The total scores of the arguments were later calculated to measure the quality of each argument (see Table 3.1).

Table 3.4

Stapleton & Wu's Analytic Scoring Rubric for Argumentative Writing (2015, p.20)

1.Claim(s) (5%)	Score: 5			Score: 0	
	States point(s) of view			Does not state point(s) of view	
2. Data (25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the claim(s), and b. All reasons are sound/acceptable and free of irrelevancies	a. Provides multiple reasons for the claim(s), and b. Most reasons are sound/acceptable and free of irrelevancies, but one or two are weak	a. Provides one to two reasons for the claim(s), and b. Some reasons are sound/acceptable, but some are weak or irrelevant	a. Provides only one reason for the claim(s), or b. The reason provided is weak or irrelevant	a. No reasons are provided for the claim(s); or b. None of the reasons are relevant to/support the claim(s)
3. Counterargument Claim(s)/Alternative Point(s) of View(10%)	Score: 10			Score: 0	
	Provides counterargument claim(s)/alternative view(s)			Does not provide counterargument claim(s)/alternative view(s)	
4. Counterargument Data/Supporting Reasons for Alternative Point(s) of View(25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the counterargument claim(s) /alternative view(s), and b. All counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies	a. Provides multiple reasons for the counterargument claim(s)/alternative view(s), and b. Most counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies, but one or two are weak	a. Provides one to two reasons for the counterargument claim(s) /alternative view(s), and b. Some counterarguments/reasons for the alternative view(s) are sound/acceptable, but some are weak or irrelevant	a. Provides only one reason for the counterargument claim(s)/alternative view(s), or b. The counterargument/reason for the alternative view is weak or irrelevant	a. No reasons are provided for the counterargument claim(s)/alternative view(s); or b. None of the reasons are relevant to/support the counterargument claim(s)/alternative view(s)
5. Rebuttal Claim(s) (10%)	Score: 10			Score: 0	
	Provides rebuttal claim(s)			Does not provide rebuttal claim(s)	
6. Rebuttal Data[a] (25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Refutes/points out the weaknesses of all the counterarguments, and b. All rebuttals are sound/acceptable c. The reasoning quality of all the rebuttals are stronger than that of the counterarguments	a. Refutes/points out the weaknesses of all the counterarguments, and b. Most rebuttals are sound/acceptable, but one or two are weak c. The reasoning quality of most rebuttals are stronger than that of the counterarguments, while one or two are equal to that of the counterarguments	a. Refutes/points out the weaknesses of all the counterarguments, and b. Some rebuttals are sound/acceptable, but some are weak c. The reasoning quality of some rebuttals are stronger than that of the counterarguments, while some are weaker than that of the counterarguments	a. Refutes/points out the weaknesses of some counterarguments, or b. Few of the rebuttals are sound/acceptable; most of them are weak, or c. The reasoning quality of most rebuttals are weaker than that of the counterarguments	a. No rebuttals are provided; or b. None of the rebuttals can refute the counterarguments

Note. [a] An implicit requirement of rebuttal data is subsumed under the requirements of row 4 "Counterargument Data", that is, each piece of rebuttal data should be aligned with each piece of counterargument data in terms of both quantity and logic.

Regarding the marking scales and description on the scoring rubric, three types of claims (*claim, counterargument claim, rebuttal claim*) take fewer percentages than three data (*data, counterargument data, rebuttal data*). This could be explained that the strength of the argument mainly depends on the soundness of data. The expected numbers of the claims and data were also different. Each type of claims is expected to appear less frequently than data since claims are stances toward a controversial issue and mostly there are limited sides to take (whether agree or disagree). On the other hand, each type of data has more marking scales and higher percentages because the numbers and strength of data can affect the persuasiveness of

the argument. Accordingly, the descriptions for rating data focus do not only on numbers of data but also acceptability and relevance to the claim.

Although the scoring rubric provides marking scales and descriptions for each element, the grading process is still subjective in some aspect. The evaluator must decide on which scale the data is acceptable and relevance. Accordingly, the data were rated by the researcher first. Some arguments that represent the similar patterns of argumentation were later sent to other three experts. The three raters are lecturers in three famous Thai universities and have experienced in teaching English in the university level more than 5 years. The three raters were asked to consider the rated data which were scored by the researcher and decided if they agreed with the given scores. If any rater disagreed on the given scores, she needed to provide reasons and rated as they considered more sensible. There was only one data that one rater disagreed with the rated scores. However, the other two raters agree with how the data was analysed by the researcher. Accordingly, the data was rated in accordance with the agreement of the majority.

In the third phrase, the data on the familiar topic and the unfamiliar topic before and after instruction of each group were calculated to find mean scores. In order to examine if there is any significant difference in the scores of the essays on a familiar topic and an unfamiliar topic, t-test was applied using SPSS Statistics program. The findings from the essay written before the instruction were later compared with those from the essays written by students after instruction of each writing ability group to check any influence of the writing instructions.

3.4.2 Data analysis on the complexity of the arguments

This section presents the analysis of the arguments' complexity through the argumentative elements students at each writing ability levels used when encountering familiar and unfamiliar topics. This findings from this step aims to answer the second research question.

The second research question is *"What are the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels?"*

The previous section presented the analysis of the students' written argumentative skill through the quality of arguments which represents their reasoning and logical thinking abilities. Apart from that, the complexity of the arguments or the

ability in applying multiples thinking skills to form an argument is another aspect that indicates the students' critical thinking ability. Accordingly, the qualitative approach was applied in this step to analyze how students form their arguments when encountering familiar and unfamiliar topics through the application of argumentative elements. The framework of analysis on this process is the modified Toulmin elements (Qin & Karabacak ,2010) (see Appendix A) which was also adopted in Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015). Since the data have already been coded in section 3.4.1, the coded elements were analyzed to explore the patterns of what elements were used by each student in forming arguments on the familiar and unfamiliar topics. The tendency of how students at each writing ability level employed which elements in forming their arguments should indicate the complexity of argumentation when responding to topics with different degrees of familiarity.

3.5 Conclusion

This chapter begins with the introduction of the research design before presenting the demographic information of participants who were in Grade 9 in a bilingual school in a rural area of Thailand. The criterion from the writing part in KET test in categorizing students into three levels due to their English writing ability was also described. After that, the explicit instruction design was presented. The chapter later reaches the data collection and data analysis section. In order to collect data, the participants were asked to write four argumentative essays with two topics that represent different degrees of familiarity. Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) was also identified as the research instrument in analyzing data to answer the research questions and test two hypotheses. The results and discussion are presented in Chapters 4 and 5.

CHAPTER 4
RESULTS

This chapter presents the results of the study regarding the total scores of the argumentative essays in response to the first research question and two hypotheses. It also presents the findings on the tendency of the types and numbers of the modified Toulmin elements used to respond to the second research question. The research questions and the hypotheses are summarized as follows:

Research question1: Does a familiar topic encourage higher scores of arguments formed by students regardless of their writing ability?

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability.

Alternative Hypothesis (H1): The scores of arguments on a familiar topic are higher than those on an unfamiliar topic, regardless of students' writing ability.

Research question2: What are the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels?

This study aims to explore the effects the topics with different degrees of familiarity on the students' critical thinking skills which can be seen through two aspects: 1) the students' reasoning and logical thinking abilities through the total scores of the arguments rated in accordance with the Stepleton and Wu's Analytic Scoring Rubric for Argumentative Writing (2015) (See Appendix B), and 2) the complexity of their thinking skills presented through the types and numbers of the modified Toulmin elements used in their argumentative essays.

Regarding the students' reasoning and logical thinking abilities, the first research question and the hypotheses were proposed responding to the findings from previous studies which indicate that students tended to form stronger arguments when encountering the topics they were more familiar with. In order to account for the first research question and test the hypotheses, the total scores of the essays responding to familiar and unfamiliar topics are presented in Section 4.1. A comparison of the essays' total scores on the familiar and unfamiliar topics composed by students with

high, moderate, and low English writing ability before and after instruction is shown in Sections 4.1.1, 4.1.2 and 4.1.3, respectively.

The second research question aims to investigate the complexity of the students' argumentation when encountering familiar and unfamiliar topics. In response to the research question, the types and numbers of the argumentative elements used in the students' essays which present the complexity of the participants' argumentation are displayed in Section 4.2. A qualitative analysis on the tendency of how students with high, moderate, and low English writing ability formed arguments is provided in Sections 4.2.1, 4.2.2 and 4.2.3, respectively. Lastly, the conclusion of the findings is presented in Section 4.3.

4.1 Total scores

Previous studies suggested that students were likely to show more critical thinking skills when encountering more familiar topics (Indah, 2017; Stapleton, 2001). The first research question then concerns if a familiar topic encourages higher scores of arguments formed by students regardless of their writing ability. The null hypothesis (H0) was proposed that there is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability. The alternative hypothesis (H1) assumes that the scores of arguments on a familiar topic are higher than those on an unfamiliar topic. To examine these hypotheses, the total scores of the argumentative papers which indicate the quality of the arguments and writers' reasoning and logical thinking abilities were analyzed. In order to investigate whether the total scores on the familiar topic are significantly higher than those on the unfamiliar topic, the paired samples t-test was applied to compare the mean scores of essays on each topic in SPSS program. Since the alternative hypothesis of this study is a directional hypothesis that aims to determine the relationship in one direction, it is considered one-tailed hypothesis. One-tailed hypothesis testing is normally run with the alpha level or the significance level of .05 (5%). The observed level of significance (Sig 1-tailed), also known as the probability value (p-value), would determine if the null hypothesis is rejected. If the received p-value is less than .05, there is statistically significance. It means that the scores of the

essays on the familiar topic are significantly higher than those on the unfamiliar topic. The outcome would reject the null hypothesis and provide a support to the alternative hypothesis. In contrast, a p-value higher than the threshold of .05 is not significantly different. The outcome would fail to reject the null hypothesis. It means that the scores of the arguments on the familiar topic are not significantly different with those on the unfamiliar one (Pillemer, 1991; Ramachandran & Tsokos, 2021; Ross & Willson, 2018). However, the SPSS program only reports Sig 2-tailed or two-tailed p-value. It would be divided by two in order to achieve Sig-1-tailed or p-value of the one-tailed test. Accordingly, the two-tailed p-value was also presented on each table as the outcome from the statistical software along with the one-tailed p-value. The word p-value in the interpretation of the results would stand for merely the p-value of one-tailed test as it is the targeted value for the analysis.

Regarding the type of hypothesis, one-tailed hypothesis testing only determines the relationship in one direction of interest without concerning the possibility of a relationship in another direction. It shows that one mean is either significantly higher or lower than the other mean but not both. Since the alternative is set up that the mean scores of arguments on the familiar topic are greater than those on the unfamiliar topic, it is the upper-tailed test. It would only make sense in running one-tailed test in this direction if the scores on the familiar topic appear higher. If it happens that scores on the unfamiliar topic are greater in some cases, the new statistical hypothesis would be proposed to observe a new possibility as the scores of arguments on an unfamiliar topic are significantly higher than those on a familiar topic. With this new statistical hypothesis, it would still make sense to apply upper-tailed hypothesis testing and might also provide new results that challenge the findings from previous studies.

The descriptive statistics for the total scores of the argumentative papers on familiar and unfamiliar topics written by high, moderate, and low writing ability students are presented in Sections 4.1.1, 4.1.2, and 4.1.3 respectively. Since the students at all levels received intensive instruction, some might argue that the teaching on argumentative writing style and important elements also affects the students' behavior in forming an argument. It is worth exploring, then, if the knowledge of writing convention has a greater influence than the familiarity of the

topic on the quality of the students' argument. If either familiar or unfamiliar topics encourage higher quality both before and after the instruction, it would emphasize the effect of that topic familiarity towards the students' argumentative skill. Accordingly, the results before and after instructions are separately presented and compared in each section.

4.1.1 High English writing ability levels

To explore if a familiar topic facilitates higher scores or higher quality of arguments composed by high English writing ability students, the total scores of the essays on familiar and unfamiliar topics were analyzed. As the knowledge of the writing convention might affect the students' performance, two essays on different topic familiarity before instruction and the other two after instruction were compared. The grouping of the four essays is as follows:

- **Before instruction (Table 4.1)**

Question1: "Do you agree with the statement, 'Studying at school is better than studying online'?" (familiar topic: studying)

Question3: "Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?" (unfamiliar topic: working)

- **After instruction (Table 4.2)**

Question2: "Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?" (familiar topic: studying)

Question4: "Do you agree with the statement, 'Being a business owner is better than being an employee'?" (unfamiliar topic: working)

The statistical analysis for the total scores of the argumentative papers on topics with different familiarity composed before and after the instruction are presented in Table 4.1
and Table 4.2 respectively.

4.1.1.1 Before instruction

The statistical results on the mean scores of the essays responding to familiar and unfamiliar topics written by high English writing ability participants before obtaining the argumentative writing convention is shown in
Table 4.1.

Table 4.1

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with high English writing ability level before instruction (N=12)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	28.75	11.89	20	60	.17	11	.87	.44
Unfamiliar Topic	29.58	13.05	15	60				

Table 4.1 explores the influence of topic familiarity on the quality of the arguments before receiving the instruction to test the hypothesis. The research hypothesis assumes that the total score on the essays responding a familiar topic is higher than that on the unfamiliar topic. However, the results revealed the opposite. The mean score of the argumentative essays on the unfamiliar topic (29.58) composed by the high writing ability students is higher than that on the familiar topic (28.75). Accordingly, the new statistical hypotheses were proposed to test the significant difference on the unexpected results as follows:

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by high writing ability students before instruction.

Alternative Hypothesis (H1): The scores of arguments on an unfamiliar topic formed by high writing ability students before instruction are higher than those on a familiar topic.

The upper-tailed test was applied to verify the new hypotheses. The results from Table 4.1 indicated that there was no significant different on the scores of essays on two topics, $t(11) = .17$, $p = .44$, despite the score on the unfamiliar topic ($M=29.58$, $S.D.=13.05$) seem to be higher than that on the familiar topic ($M=28.75$, S.D. 11.89). Since the p-value is greater than the significance level of .05, the null hypothesis was not rejected. Regarding the research hypothesis, the different

degrees of topic familiarity do not affect the total scores of the argumentative papers written before obtaining the instruction.

4.1.1.2 After instruction

The results before instruction revealed that the total scores of the argumentative essays on familiar and unfamiliar topics were not significantly different. To investigate if those results are in line with the findings after instruction, the statistics for the average scores of the arguments on both topics after the students received in writing convention knowledge are presented in Table 4.2.

Table 4.2

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with high English writing ability level after instruction (N=12)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	42.08	17.25	0	65	.93	11	.37	.19
Unfamiliar Topic	38.33	14.67	15	60				

Table 4.2 shows the results after the instruction was offered to the students. As indicated in the table, the results pointed out that there was not a significant difference of the total score of the essays on the familiar topic (M = 42.08, SD = 17.25) and that on the unfamiliar topic essays (M = 38.33, SD = 14.67), t(11) = .93, p=.19. As it is apparent that the p-value surpasses the alpha level of .05, there is not enough evidence to reject the null hypothesis. It means that the familiar topic did not encourage higher scores or higher quality of the essays even after receiving the writing convention knowledge. Even though the majority of the high proficiency students formed stronger arguments on the familiar topic with the higher mean score of 42.08 comparing to the mean score of 38.33 from essays on the unfamiliar topic, a student received 0 score on the familiar topic. It is because the student only provided pros and cons of both Math-Science program and English-Chinese program without taking side. As an argumentative argument requires the writer to take a stance and the

argument is graded from the acceptability and relevance of other elements in supporting the writer's side, this student's essay was rated 0.

In conclusion, to answer the first research question and verify the hypotheses, the familiar topic does not bring about higher quality arguments. Even though the high writing ability students obtained higher scores on the unfamiliar topic before instruction, the statistical analysis also revealed that the scores are not significantly greater. The consistent findings gained before and after the instruction fail to the reject the null hypothesis and hence the alternative research hypothesis is thus not supported.

4.1.2 Moderate English writing ability levels

As the moderate writing ability level students were also offered the intensive instruction on the argumentative writing conventions, the knowledge of the argumentative writing style plausibly affect the results of this study. Thus, the total scores of the argumentative essays on familiar and unfamiliar topics composed before and after the treatment were analyzed to see if there is consistency of the results. The four argumentative papers are classified in accordance with the time of instruction as follows:

- **Before instruction (Table 4.3)**

Question1: "Do you agree with the statement, 'Studying at school is better than studying online'?" (familiar topic: studying)

Question3: "Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?" (unfamiliar topic: working)

- **After instruction (Table 4.4)**

Question2: "Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?" (familiar topic: studying)

Question4: "Do you agree with the statement, 'Being a business owner is better than being an employee'?" (unfamiliar topic: working)

The results obtained before instruction and after instruction are presented in Sections 4.1.2.1 and 4.1.2.2, respectively.

4.1.2.1 Before instruction

To explore the effect of topic familiarity on the quality of arguments formed by the moderate English writing ability participants before

instruction, the mean scores and p-value of the essays on familiar and unfamiliar topics are presented in Table 4.3.

Table 4.3

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with moderate English writing ability level before instruction (N=14)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	24.29	10.54	0	45	.77	13	.46	.23
Unfamiliar Topic	27.86	16.14	0	65				

Table 4.3 presents the results of paired samples statistics for the mean scores of argumentative essays written by the moderate writing ability participants in response to familiar and unfamiliar topics before instruction. As seen in Table 4.3, the mean score of the essays on the unfamiliar topic (27.86) is greater than the average score on the familiar topic (24.29). The results oppose the research hypothesis which assumes that the scores on the familiar topic are higher than those on the unfamiliar one. Hence, the new statistical hypothesis was applied to test the significant difference of the unpredicted results. The statistical hypothesis was proposed in the following fashion;

Null Hypothesis (H0**)**: There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by moderate writing ability students before instruction.

Alternative Hypothesis (H1): The scores of arguments on an unfamiliar topic formed by moderate writing ability students before instruction are higher than those on a familiar topic.

Based on the paired samples statistics, the total scores of the essays responding to the unfamiliar topic (M = 27.86, SD = 16.14) is not significantly higher than those on the familiar topic (M = 24.29, SD = 10.54), t(13) = .77, p=.23. As the observed p-value exceeds the significance level of .05, it fails to reject the null

hypothesis. It means that the different degrees of topic familiarity do not play a significant role on the quality of the arguments built before the instruction. Interestingly, the minimum score of the essays on both familiar and unfamiliar topics is 0. The participants did not state their claims explicitly and only supported both sides of the arguments. This also happened with the students with high English writing ability. It is possible that this incident is not caused by language proficiency but by the students' limited knowledge of argumentative writing convention.

4.1.2.2 After instruction

In order to investigate if the results after instruction align with those before instruction, the p-value of two essays on familiar and unfamiliar topics composed by the moderate writing ability students after instruction was calculated. The statistical results are displayed in Table 4.4

Table 4.4

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with moderate English writing ability level after instruction (N=14)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	20.71	17.19	0	55	.31	13	.76	.38
Unfamiliar Topic	22.50	17.95	0	65				

Comparing with the results obtained before instruction, the statistical analysis of the mean scores of the arguments on two topics is presented in Table 4.4. As indicated in the table, the average score of the argumentative papers on the unfamiliar topic (22.50) is found greater than that on the familiar topic (20.71). Similar to the results before instruction, it contradicts the assumption of the research hypothesis that a familiar topic contributes to higher scores. However, it is still interesting to explore if the total score of the argumentative papers on the unfamiliar topic is significantly greater. Accordingly, the new statistical hypotheses were proposed:

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by moderate writing ability students after instruction.

Alternative Hypothesis (H1): The scores of arguments on an unfamiliar topic formed by moderate writing ability students after instruction are higher than those on a familiar topic.

The results from Table 4.4 suggests that the different levels of familiarity do not have a significant influence on the quality of the argument, $t(13) = .31$, $p=.38$, even though the score on the unfamiliar topic ($M = 22.50$, $SD = 17.95$) appear higher than that on the familiar one ($M = 20.71$, $SD = 17.19$). The null hypothesis is thus not rejected since the p-value exceeds the significance level of .05. It means that the total scores of the essays on both topics are not significantly different.

It is interesting that the lowest score of 0 was seen in both essays on familiar and unfamiliar topics even after the intensive instruction despite the fact that the essays were written by different participants from pre-instruction phrase. Some students still did not take side after receiving the intensive treatment which means they may not acquire enough knowledge and understanding of the writing convention. It is also possible that the writing convention does not have enough influence on some moderate proficiency students' performance.

In conclusion, the similar results before and after instruction answers the first research question and the research hypotheses regarding the moderate writing ability level group. The familiarity of the topic does not have a significant impact on the students' argumentative skill. It does not improve students' ability in forming a sound argument. The findings are similar to those obtained from the high writing ability level group. They indicate that familiar topics may be assumed to help the students to build more complex argumentative essays but it is not always the case.

4.1.3 Low English writing ability levels

As the low writing ability students also received the intensive instruction, the scores of the argumentative essays on familiar and unfamiliar topics written before and after the instruction are also compared to explore the effect of topic familiarity. The consistency of the results would highlight the effect of topic familiarity on the students' writing performance over other possible factors such as the knowledge of writing convention. The four argumentative essays are grouped in accordance with the time of instruction as follows:

- **Before instruction (Table 4.5)**

Question1: "Do you agree with the statement, 'Studying at school is better than studying online'?" (familiar topic: studying)

Question3: "Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?" (unfamiliar topic: working)

- **After instruction (Table 4.6)**

Question2: "Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?" (familiar topic: studying)

Question4: "Do you agree with the statement, 'Being a business owner is better than being an employee'?" (unfamiliar topic: working)

The results before and after instruction are presented in Sections 4.1.3.1 and 4.1.3.2 respectively.

4.1.3.1 Before instruction

To investigate if the findings before and after instruction are consistent, the mean scores of the essays written before instruction and the statistical results are reported in Table 4.5.

Table 4.5

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with low English writing ability level before instruction (N=11)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	22.27	13.30	0	45	.81	10	.44	.22
Unfamiliar Topic	26.36	15.67	0	55				

To test the research hypothesis if the total scores on the familiar topic are significantly higher than those on the unfamiliar topic regarding the low writing ability group, the results after instruction is presented in Table 4.5. The statistical analysis notably reveals the opposite outcome. It is obvious that the mean score of the arguments on the unfamiliar topic (26.36) is greater than that of the essays on the familiar topic (22.27). It challenges the assumption from previous literature and hence worth investigating if the scores on the unfamiliar topic are significantly higher. The new statistical hypotheses are then suggested accordingly:

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by moderate writing ability students after instruction.

Alternative Hypothesis (H1): The scores of arguments on an unfamiliar topic formed by low writing ability students before instruction are higher than those on a familiar topic.

The results from Table 4.5 points out that the total score on the unfamiliar topic (M = 26.36, SD = 15.67) is not significantly higher than that of the familiar topic essays (M = 22.27, SD = 13.30), t(10) = .81, p=.22. As the received p-value is not lower than the alpha level of .05, there is not enough evidence to reject the null hypothesis. It means that the topic familiarity does not have a significant impact on the quality of the argumentative essays formed by low writing ability students. The finding rejects the alternative research hypothesis as the familiar topic does not facilitate the higher scores or higher quality of arguments. Regarding the

minimum score, similar to the moderate and high writing ability groups, some of the low English writing ability students received 0 score on their essays due to the disappearance of the writers' stance which could be the result of the limited knowledge of the argumentative writing convention.

4.1.3.2 After instruction

To compare with the findings before instruction, the average scores of the essays on familiar and unfamiliar topics written after instruction and the paired samples statistics are shown in Table 4.6. The consistency of the results before and after the teaching should highlight the effect of topic familiarity.

Table 4.6

Paired samples statistics for the total scores of the argumentative essays responding to familiar and unfamiliar topics of the students with low English writing ability level after instruction (N=11)

Degree of familiarity	Mean	S.D.	Min	Max	t	df	Sig. (2-tailed)	Sig. (1-tailed)
Familiar Topic	16.82	16.17	0	40	.14	10	.89	.45
Unfamiliar Topic	15.91	10.91	0	35				

To explore the consistency of the results, the paired samples statistics for the argument scores on familiar and unfamiliar topics after introducing the argumentative writing convention is presented in Table 4.6. As indicated in the table, there was not a significant difference on the total scores of the argumentative essays on the familiar topic (M = 16.82, SD = 16.17) and the unfamiliar topic, (M = 15.91, SD = 10.91), t(10) = .14, p=.45). The results fail to reject the null hypothesis since the p-value is greater than the significance level of .05. It means that the total scores of the essays on the familiar topic are not significantly higher than those on the unfamiliar one.

The consistency of the results before and after instruction answers the first research question and rejects the alternative hypothesis as a familiar topic does not encourage higher quality of arguments formed by the low English

writing ability students. The minimum score of 0 after the instruction is similar to the results of the moderate writing ability students that after the instruction, some students were still unable to follow the argumentative writing convention. It could be caused by many reasons such as poor understanding of the writing convention or this type of essays may not suit some students' ability in terms of language proficiency or critical thinking ability.

In conclusion, Section 4.1 presents the consistent results of the students at all writing ability levels that the total scores of their argumentative papers responding to a familiar topic are not significantly different from those on an unfamiliar topic. It means that a familiar topic does not contribute to higher scores or higher quality of arguments. Accordingly, the results fail to reject the hypothesis and thus the alternative research question is not supported. Surprising, there were some cases on the findings that the average scores on the unfamiliar topic appear higher which challenges the assumption from previous literature. Nevertheless, the new statistical alternative hypothesis was proposed but the results from the paired samples test still revealed that there is no significant difference.

Section 4.1 indicates that the total scores of the argumentative papers formed by students at all levels in response to familiar and unfamiliar topics are not statistically different. However, there is some dissimilar on the complexity of the students' argumentation. The tendency of the students in applying the modified Toulmin elements to composed argumentative essays when encountering topics with different familiarity is presented to answer the second research question in Section 4.2.

4.2 The complexity of arguments

This section presents the findings on the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels to respond to the second research question. The complexity of the students' arguments was analyzed through the numbers and types of the modified Toulmin elements used. The tendency of how students at each English writing ability level applied argumentative elements in forming arguments should indicate the complexity of the students' argumentation

when responding to the topics with different degrees of familiarity. In this part, the qualitative research approach was applied to analyse the findings of students with high, moderate, and low writing ability levels. The analyses are offered in Sections 4.1, 4.2, and 4.3, respectively. Due to the fact that the students received some intensive instructions on the argumentative writing convention which might affect the results, the findings are separately reported before and after instruction to examine how students formed their arguments on familiar and unfamiliar topics before and after they obtained the writing convention knowledge.

4.2.1 High English writing ability levels

In composing a particular type of writing, the knowledge of the writing convention is also important. It guides the writers how a particular essay should be formed and what elements are needed. Moreover, some might assume that the knowledge of the argumentative writing convention may also have an impact on the students' essays even more than the topic familiarity. Therefore, the participants in this study were also equipped with the knowledge of the writing style and essential elements in forming an argumentative writing. The findings before and after the instruction are thus compared to explore if the students' behaviors in applying argumentative elements on topics with different familiarity before and after they obtained the writing convention knowledge are consistent. If the findings show that the majority of the students tend to use higher number of the modified Toulmin elements in a particular topic familiarity both before and after the instruction, it confirms the effect of topic familiarity on the students' writing behavior. However, if the findings show that the use of the argumentative elements obviously change after the instruction, it suggests that the writing convention knowledge may have a major impact on the students' ability in forming argumentative essays on a particular topic familiarity.

To compare the findings before and after instructions, the modified Toulmin elements in two essays on the familiar topic and two essays on the unfamiliar topic composed before and after the treatment were analysed and presented. The classification of the four essays according to the time of instruction is as follows:

- **Before instruction**

Question1: “Do you agree with the statement, ‘Studying at school is better than studying online’?” (familiar topic: studying) **(Figure 4.1)**

Question3: “Do you agree with the statement, ‘Being a full-time employee is better than being a freelancer’?” (unfamiliar topic: working) **(Figure 4.2)**

- **After instruction**

Question2: “Do you agree with the statement, ‘Studying in Math-Science program is better than English-Chinese program’?” (familiar topic: studying) **(Figure 4.3)**

Question4: “Do you agree with the statement, ‘Being a business owner is better than being an employee’?” (unfamiliar topic: working) **(Figure 4.4)**

The findings before and after instruction were presented in Sections 4.2.1.1 and 4.2.1.2 respectively.

4.2.1.1 Before instruction

The findings on the application of the modified Toulmin elements on the essays responding to a familiar topic with the guiding question, *“Do you agree with the statement, ‘Studying at school is better than studying online’?”* were presented in Figure 4.1.

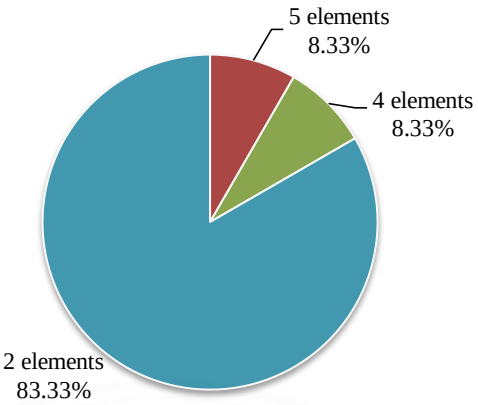

Figure 4.1 *The percentage of the high English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic before instruction (N=12)*

Figure 4.1 shows the percentage of the high English writing ability students in applying the modified Toulmin elements to form argumentative essays responding to a familiar topic to answer the second research question. The types and numbers of the elements are supposed to indicate the complexity of the argumentation. It is apparent in Figure 4.1 that most students, 83.33 percent, applied two basic elements which are *claim* and *data* in forming arguments responding to a familiar topic before they received the intensive instruction. It means that when building an argument on a topic they have experienced with, students of this group were able to state their stance and tended to focus on supporting their stance through *data*. These are the basic steps in forming a convincing argument. Furthermore, the arguments can become stronger when the counterarguments or other points of view are mentioned and argue back (Nussbaum & Kardash, 2005; Qin & Karabacak, 2010; Wolfe & Britt, 2009). *Counterargument claim, counterargument data*, *rebuttal claim, and rebuttal data* then function as the secondary elements which enhance the complexity of the arguments. These elements can strengthen the arguments if they are used effectively. Nevertheless, the findings revealed that they were used by the minority of this group when writing an essay on the familiar topic before instruction. Only 8.33 percent of the students used four elements which are *claim*, *data*, *counterargument data*, and *rebuttal data*. The implicit counterargument claim and

rebuttal claim would not be scored and counted according to the rubric for coding argumentative structural elements in Stapleton & Wu 's study (2015, p. 22). The same percentage of them (8.33 %) adopted five elements which are *claim*, *data*, *counterargument claim*, *counterargument data*, and *rebuttal data*. The student refused some reasons of the opposite stance but did not state *rebuttal claim* explicitly. None of the high writing ability students applied six elements in forming arguments on the familiar topic before the intensive instruction.

The results on the familiar topic showed that students were likely to rely on the basic elements. Regarding the unfamiliar topic, the tendency in applying modified Toulmin elements on the essays with the guiding question, *"Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?"* were presented in Figure 4.2.

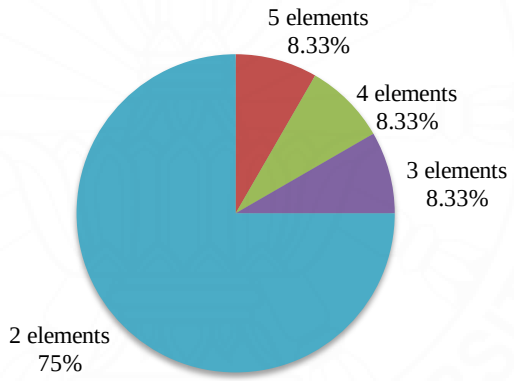

Figure 4.2 *The percentage of the high English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic before instruction (N=12)*

As seen above, 75 percent of the high English writing ability students tended to apply two basic elements *claim* and *data* in forming their arguments on the unfamiliar topic. This is similar to the results on the familiar topic that most students with high English writing ability level were likely to rely on the basic elements in proposing their stances. According to Figure 4.2, the minority of them went further by mentioning opposite stances through counterarguments and responding back through rebuttals. One student employed three elements *claim*, *data*

and *counterargument data* while one used four elements *claim, data, counterargument data* and *rebuttal data*. This student participant employed a rebuttal element to protect his stance. However, the findings suggested that the two students were likely to rely on secondary supporting elements which are *counterargument data* and *rebuttal data* without stating *counterargument claim* and *rebuttal claim* explicitly. Only one student applied five elements which are *claim, data, counterargument claim, counterargument data* and *rebuttal claim*. This student participant provided explicit *counterargument claim* and *rebuttal claim* on his essay which unfortunately lacked evidence to support *rebuttal claim*. Similar to the findings on familiar topic, none of the students applied all modified Toulmin elements in forming their arguments.

The findings from Figure 4.1 and Figure 4.2 similarly showed that before receiving instructions, students with high writing ability were likely to rely on the basic argumentative elements, i.e. *claim* and *data,* in forming their arguments both on familiar and unfamiliar topics. However, some of them were able to apply secondary elements which are counterargument elements and rebuttal elements without being introduced to the modified Toulmin model. The percentage of students who formed more complex arguments through the application of the secondary elements on the unfamiliar topic (24.99%) is higher than those on the familiar topic (8.33%). None of the students used all six key modified Toulmin elements on familiar and unfamiliar topics.

4.2.1.2 After instruction

To explore if the tendency in applying argumentative elements changed after obtaining the writing convention knowledge, the findings on the application of the modified Toulmin elements in response to familiar and unfamiliar topics after instruction are presented in Figures 4.2 and 4.3 respectively. The results on the essays with the guiding question, *"Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?"* representing a familiar topic were reported in Figure 4.3.

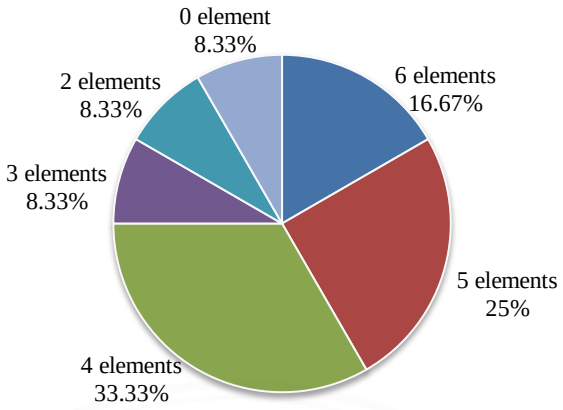

Figure 4.3 *The percentage of the high English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic after instruction (N=12)*

Figure 4.3 revealed that after receiving the writing convention knowledge, the high writing ability students were likely to include more counterargument and rebuttal elements on their essays. Four students (33.33%) tended to employ four elements on their essays. Three of them applied *claim*, *data*, *counterargument data* and *rebuttal data* in forming their arguments. They were able to support the opposite stance and provided reasons to support their own stance through *counterargument data* and *rebuttal data* respectively without stating the claims of each side explicitly. However, one of them pointed out the opposite stance explicitly. The student used *claim*, *data*, *counterargument claim* and *counterargument data* on his essays. Nonetheless, she did not provide the rebuttal elements to protect her stance. The findings on Figure 4.3 also showed that 25 percent of the high writing ability students tended to apply five elements which are *claim*, *data*, *counterargument claim*, *counterargument data*, and *rebuttal data* on their argumentative essays. They formed potentially stronger arguments through the application of secondary elements in stating opposite stance and responding back. However, they did not point out *rebuttal claim* explicitly. Nevertheless, there were 16.67 percent of the students that applied all modified Toulmin elements in composing their argumentative essays. 8.33 percent of the students used three elements which are *claim*, *data* and *counterargument data.* Only one high writing ability student, 8.33 percent, employed

two basic elements: *claim* and *data*. The tendency that the majority of the students were able to apply more modified Toulmin elements especially the counterargument and rebuttal elements is possibly influenced by the intensive instruction. The treatment might raise their awareness in forming more complex elements. However, the results showed that most of the missing element on the students' essays is *rebuttal claim*. *Rebuttal claim* is the statement the writer uses to directly respond to the counterarguments such as *"This argument misses the point…"* or *"I think we can have different sight to handle this case"* as the examples in Stapleton & Wu's study (2015). However, according to the participants' essays, they were likely to provide reasons or advantages showing why their stance was still more acceptable comparing to the *counterargument data* rather than challenging the opposite side directly. For example, one student agreed with the statement that studying in Math-Science program is better than English-Chinese program. He supported with two *data* that *"Math-Science program easy to find a job"* and *"it hard to study by yourself."*(so you should study this program in school). He later pointed out the *counterargument data* that *"Jobs from English program is more chill and easy work"* supporting the implicit counterargument claim that English- Chinese program is better at some point. Instead of directly responding that English- Chinese program may not be better in all cases, the student wrote *"A job that related to Math-Science program is hard work but is more stable than English-Chinese program job."* He even seemed to accept that jobs related to Math-Science program are hard work but responding back by providing another advantage that they are more stable.

Interestingly, one student, 8.33 percent, did not include any modified Toulmin elements on her essay. The student showed her attempt in forming some arguments by showing advantages and disadvantages of each stance which is incompatible with the nature of the argumentative argument that requires the writer to take side and persuade readers. The excerpt from her essay is as follows:

> *I don't think what is better because when you grow up, you will have a job that you like to do in the future. Math-Science is easy to find your work but English-Chinese have interesting jobs to do in the future…*

Since the student did not state her stance, it is considered that no elements were implemented in the essay.

The findings from Figure 4.3 indicated that students were likely to compose more complex argumentative essays when encountering a familiar topic after instruction. Regarding the complexity of arguments on an unfamiliar topic, the results on the essays with the guiding question, *"Do you agree with the statement, 'Being a business owner is better than being an employee'?"* were shown in Figure 4.4.

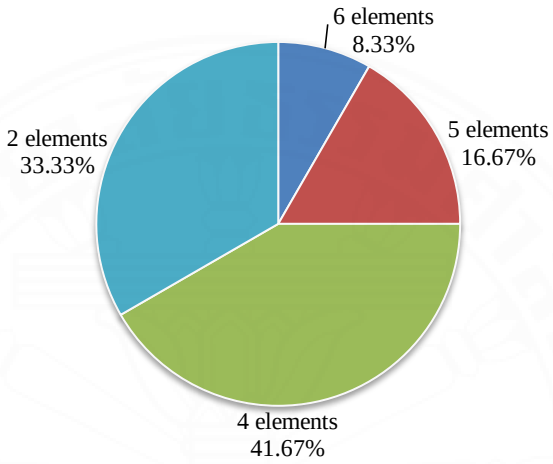

Figure 4.4 *The percentage of the high English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic after instruction (N=12)*

Regarding the use of the modified Toulmin elements when writing about the unfamiliar topic after receiving the instruction, the findings in Figure 4.4 indicated that many high English writing ability students were likely to employ more counterargument and rebuttal elements on their essays. 41.67 percent of the high writing ability participants tended to use four modified Toulmin elements which are *claim*, *data*, *counterargument data* and *rebuttal data* in forming argumentative essays responding to the unfamiliar topic. 16.67 percent of them applied five elements which are *claim*, *data*, *counterargument claim*, *counterargument data* and *rebuttal data* on their arguments. Less percentage of the students (8.33%) included all six elements on their essays. Similar to the findings on the familiar topic, the high writing ability students tended to miss *rebuttal claim*. For example, one student who used five elements claimed that a business owner is better than an employee. She provided two *data* that *"they will get freedom and control by*

themselves" and *"don't worry about salary"*. After that, she pointed out *counterargument claim* that *"For someone they think an employee is better"* supported with two *counterargument data*, *"because they think control work is hard"* and *"stable about salary"*. She later argued back by indicating two rebuttal data, *"but for me business owner will get more income"* and *"Business owner will have more free time and can manage time."*. Those rebuttal data supported the implicit rebuttal claim that being an employee is still more preferable.

However, many students, 33.33 percent, still relied on the basic elements, i.e. *claim* and *data*, in forming their arguments. None of the high writing ability participants composed the arguments without taking a stance as occurred on the familiar topic.

The findings from Figure 4.3 and Figure 4.4 revealed that after instruction, the high writing ability students tended to apply more secondary elements on both topics. Some students were even able to include all six modified Toulmin elements on their essays which did not found in the case of writing before instruction. This might be the influence of the intensive instruction that remind them to be more aware of the counterarguments and the responses to make their arguments potentially become more convincing. Nonetheless, they tended to generate more complex argumentation on the familiar topic due to the higher percentage of the implementation of secondary elements (83.33%) comparing to those on the unfamiliar topic (66.67%). Only few of them included just the basic elements on the familiar topic (8.33%) whilst many of them still relied merely on *claim* and *data* on the unfamiliar topic (33.33%).

The findings before and after instruction seem to be inconsistent. While the students tended to form more complex arguments on the unfamiliar topic before instruction, they were likely to apply more secondary elements on the familiar topic after the treatment. One of the major factors on the change of the students' writing performance is the writing convention knowledge. It can be seen through the results after teaching that the participants employed greater counterargument and rebuttal elements on both topics. Nevertheless, the percentage of students applying only the basic elements obviously decreased on the familiar topic

after instruction. One possible explanation is that before instruction, the high proficiency students may have more details on the familiar topic but lack writing convention knowledge. Thus, the appearance of secondary elements on the familiar topic seemed to be less frequent while the basic elements, *claim* and *data*, were shown more often. However, after receiving the writing convention knowledge, they may know how to organize their ideas and details more. Therefore, their essays on the familiar topic became apparently more complex and potentially stronger.

4.2.2 Moderate English writing ability levels

To investigate how the Moderate English writing ability students applied the modified Toulmin elements to form argumentative essays on familiar and unfamiliar topics, their argumentative papers responding to the topics with different familiarity were analyzed. Although this study aims to focus on the effect of topic familiarity, it is undeniable that the knowledge of the writing convention is a crucial factor that helps students complete the writing task effectively. The students in this study were also taught the argumentative writing model so they would have the guideline and direction in forming their arguments. Some might say that the knowledge on the writing convention may be the main factor influencing the application of argumentative elements on the students' essays, even more than the influence of the topic familiarity. Accordingly, the results on the implementation of the modified Toulmin elements to form arguments on familiar and unfamiliar topics before and after instruction were separately analyzed and presented. If the findings show that the students tended to apply greater argumentative elements both before and after the instruction on either the familiar topic or the unfamiliar topic, it would suggest that topic familiarity possibly plays a role on the students' argumentative skill. If the results from the two phrases are inconsistent, it suggests that the knowledge of writing convention may have a stronger effect. The classification of the four essays according to the time of instruction is as follows:

- **Before instruction**

Question1: "Do you agree with the statement, 'Studying at school is better than studying online'?" (familiar topic: studying) **(Figure 4.5)**

Question3: "Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?" (unfamiliar topic: working) **(Figure 4.6)**

• **After instruction**

Question2: “Do you agree with the statement, ‘Studying in Math-Science program is better than English-Chinese program’?” (familiar topic: studying) **(Figure 4.7)**

Question4: “Do you agree with the statement, ‘Being a business owner is better than being an employee’?” (unfamiliar topic: working) **(Figure 4.8)**

The findings on the implementation of the modified Toulmin elements on the familiar and unfamiliar topics before and after receiving writing convention knowledge were presented in Sections 4.2.2.1 and 4.2.2.2 respectively.

4.2.2.1 Before instruction

This section presents the tendency of the application of the modified Toulmin elements on the essays in response to familiar and unfamiliar topics before instruction in Figures 4.5 and 4.6 respectively. The findings on the familiar topic with the guiding question, *“Do you agree with the statement, ‘Studying at school is better than studying online’?”* is displayed in Figure 4.5.

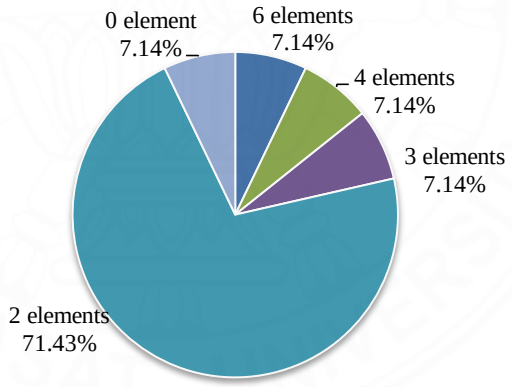

Figure 4.5 *The percentage of the moderate English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic before instruction (N=14)*

As shown in Figure 4.5, most moderate writing ability students, 71.43 percent, tended to apply the basic elements, *claim* and *data*, in forming arguments when encountering a topic they had experienced with. It is predictable since the participants have not been introduced to the key argumentative elements and the argumentative writing convention. Nonetheless, some of them employed the

secondary elements while some even included all six key argumentative elements on their essay. One student, 7.14 percent, applied three elements which are *claim*, *data* and *counterargument data* when building an argument. She was able to present the advantages of the opposite stance but did not state *counterargument claim* explicitly. However, there was one student (7.14%) presenting the opposite stance directly. This student employed four elements which are *claim*, *data*, *counterargument claim* and *counterargument data* but did not provide the response to the counterarguments. Surprisingly, there was one student, around 7.14 percent, used all six modified Toulmin elements on his argumentative essay. This is not the case with the high writing ability students in forming essays on the familiar topic before instruction. The findings on this phenomenon suggested that critical thoughts and language proficiency may not necessarily have a positive correlation. It means that some students may have lower writing ability but their reasoning and logical thinking abilities could be higher. Accordingly, when evaluating students' essays, the content production and the language production should be separately examined. This is supported by the findings that while one student could apply six elements, another student with the same writing ability employed zero argumentative elements on his essay. The student did not state his stance explicitly but presenting pros and cons of both sides. The excerpt from the student's essay is presented as follows:

> *I like studying at school because I see my friend. I am happy see my friend. I lazy when study online… I like studying online because I can get up late and sleep late. I like sleeping and get up late.*

As seen from the excerpt, it was impossible to identify the writer's claim, counterarguments and rebuttals. Thus, it cannot be claimed that any Toulmin elements were used. This is possibly due to the lack of the writing convention knowledge.

There was some similarity of the results on familiar and unfamiliar topics before instruction. The findings on the application of the modified Toulmin elements when encountering the guiding question, *"Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?"* representing an unfamiliar topic were presented in Figure 4.6.

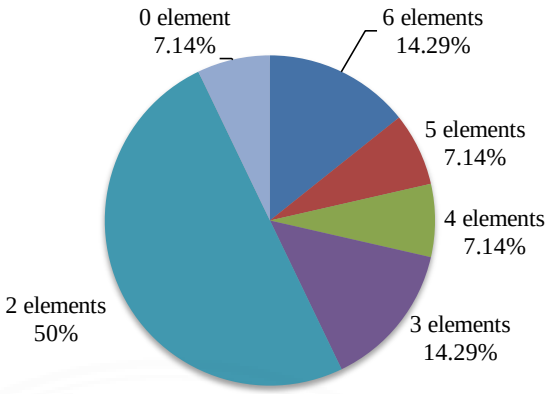

Figure 4.6 *The percentage of the moderate English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic before instruction (N=14)*

According to Figure 4.6, 50 percent of the moderate writing ability students relied on two basic elements which are *claim* and *data* while almost half of them used the secondary elements in forming arguments on the unfamiliar topic. Two students (14.29%) applied three elements which are *claim*, *data* and *counterargument data*. However, the students mentioned the advantages of the opposite stance without stating the counterargument claim explicitly. One student (7.14 %) used four elements which are *claim, data, counterargument claim* and *counterargument data*. This student stated explicit *counterargument claim* and provided the reasons of the opposite side but did not respond back to protect the writer's stance. One moderate writing ability student, 7.14 percent, employed five argumentative elements composing of *claim, counterargument claim, counterargument data, rebuttal claim* and *rebuttal data*. Interestingly, the missing element on this case is *data* which is a basic element. The student stated *claim* without supported evidence and shifted the focus to counterarguments and the response. There were two students, 14.29 percent, included all argumentative elements on the arguments. On the contrary, the improper argument formation was also found on the essays responding to the unfamiliar topic. One student (7.14 %) did not provide any

elements due to the disappearance of the writer's stance. The student responded to the guiding question as the following excerpt:

> *Employee and freelancer two thing have a good side and bad side. Employee is not a free job but freelancer is free job. Freelancer can choose to do any day, any time any where…but if you choose to do employee is stable salary better than freelancer.*

Since the student focused on presenting advantages and disadvantages of each side without the writer's stance, the modified Toulmin elements were undefinable. The variety of the students' writing performance highlights the separation of thinking abilities and language proficiency. Students' language ability may not predict the students' thinking skills.

The findings both on the familiar and unfamiliar topics revealed that the majority of the moderate English writing ability tended to rely on the basic elements when writing argumentative essays. 50 percent of the moderate ability students applied merely *claim* and *data* on the unfamiliar topic while more than half of them (71.43%) used only those two elements on the familiar topic. Similar to the findings of the high writing ability group before instruction, the participants were likely to form more complex arguments on the unfamiliar topic. The percentage of the students using the secondary elements on the unfamiliar topic (42.86%) was higher than those on the familiar topic (21.42%). Interestingly, some moderate writing ability students included six key elements on both topics even before receiving the knowledge of argumentative writing convention. This phenomenon did not happen on the high writing ability level students. However, while some moderate writing ability participants were able to include all elements, some of them did not form arguments properly; they did not take side. Since the nature of arguments requires the writer to take a stance, the application of Toulmin elements is absent by default. This incident yet again pointed out the incompatibility of language ability and thinking ability. Some moderate writing ability students were able to form more complex arguments than the high ability students. Moreover, the complexity of the arguments composed by students with the same writing ability level also varied. Accordingly, the content production and language production should be separately considered.

4.2.2.2 After instruction

To explore the consistency of the results, the findings on the application of the modified Toulmin elements on essays responding to familiar and unfamiliar topics after instruction are presented in this section. The implementation of the argumentative elements in forming arguments on a familiar topic with the guiding question, *"Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?"* is reported in Figure 4.7.

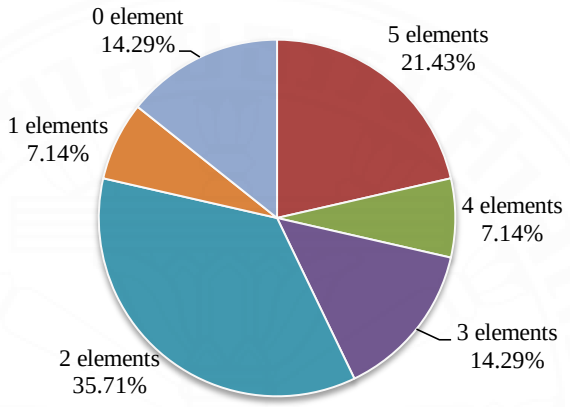

Figure 4.7 *The percentage of the moderate English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic after instruction (N=14)*

As seen in Figure 4.7, after the instruction, most students with the moderate English writing ability level, 35.17 percent, relied on the basic elements which are *claim* and *data* in composing argumentative essays on the familiar topic. Nonetheless, there were many students applying secondary elements on their arguments. 21.43 percent of the students applied five elements which are *claim, data, counterargument claim, counterargument data,* and *rebuttal data*. 14.29 percent of them employed three elements which are *claim, counterargument data* and *rebuttal data* while 7.14 percent of the students used four argumentative elements which are *claim, counterargument claim, counterargument data, rebuttal data*. Regarding the missing secondary elements on those essays, none of the moderate English writing ability participants stated *rebuttal claim* explicitly. The results were similar to those with the high writing ability students when responding to a familiar topic after

instruction. The moderate writing ability students were also likely to miss *rebuttal claim* as they tended to elaborate the advantages of their stances rather than directly respond to counterarguments. For example, one student who applied five elements stated that studying in English-Chinese program is better than Math-Science program. Her stance was backed up with two *data* that *"It helps you find works that when you working, you won't get stressful or get less stressful than Math-Science program."* and *"You can't change work easily if you study in Math-Science program. If you be a doctor, you can't change to other work."* She later pointed out *counterargument claim* that *"Some people think studying in Math-Science is better than English-Chinese program…"* and supported with *counterargument data* that *"…because studying in Math-Science can help you find many works. You can be doctor, nurse, lawyer and can get more money"* Instead of stating directly that her stance is still more acceptable, she provided *rebuttal data* that *"In the present, studying languages you can go far. You know more languages you can go to more country and get better pay."*

Interestingly, none of the moderate writing ability students included six elements after receiving the intensive instruction even though some of them did before instruction. Moreover, there was one student, 7.14 percent, applied only one element on his essay. The student stated his *claim* and focused on presenting his dream job which was considered irrelevant to the topic. He did not provide any reasons why his stance was more convincing. The excerpt from his argumentative essay is presented in the following fashion:

> *I think studying in Math- Science is better than English. But you should to do jobs you like. I want to be a programmer I should study Math-Science program. Programmer is a good work and can get more money. You can work from home or anywhere you want to do work.*

Apart from that, there were some students, 14.29 percent, did not include any elements since their stances were absent. The example from a participant's essay is shown in the following excerpt.

> *No, it's not true that Math-Science program is better than English-Chinese program. All program is better. It up to you what program you like or your job in the future you need to be. In the future if you want to be doctor you should*

study in Math-Science program. If you want to be superstar you should study at English-Chinese program.

One possible cause of this phenomenon is the fact that some students did not have sufficient knowledge about the argumentative writing convention. Although the students were at the same writing ability level with similar experience on the topic and went through the same teaching methods, the performances varied. This was plausibly influenced by other variables that affect students' performance such as the understanding on the writing convention, the interest on the topic, stress, time pressure, and the students' willingness in composing the papers.

Regarding the complexity of the students' arguments when encountering the unfamiliar topic, the findings on the use of the modified Toulmin elements in response to the question, *Do you agree with the statement, 'Being a business owner is better than being an employee'?"* were shown in Figure 4.8.

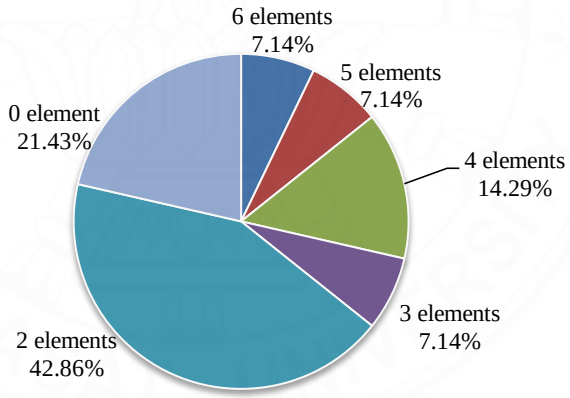

Figure 4.8 *The percentage of the moderate English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic after instruction (N=14)*

The findings in Figure 4.8 indicated that almost half of the students, 42.86 percent, were likely to employ merely *claim* and *data* on their argumentative essays. Surprisingly, 21.43 percent of them formed the arguments by focusing on explaining the keywords and showing pros and cons of both stances

without picking a side. One student presented his argument as presented in the following excerpt:

> *Business owner is you have your business. You don't have a boss. Employee you have a boss. You go to the office to work. I think it is good if you be a business owner. You have more money to pay your family. If you be an employee you will know how employee do the work in the office. If you be the employee you have so many work to do but when do it finish you will have relaxing time.*

Since the writer's stance did not appear, it cannot be claimed that any modified Toulmin elements were applied. Even though the students had been introduced to the modified Toulmin elements when receiving the intensive instructions, the majority of them tended to rely on the basic elements and even inappropriately formed argumentation. Nevertheless, there were some students applying the secondary elements when expressing their opinions about the unfamiliar topic after receiving instruction. There was one student, 7.14 percent, used three elements which are *claim*, *counterargument data* and *rebuttal data*. The findings were similar to those on the familiar topic that the student composed the argument by stating the writer's side without supporting details and moved to counterarguments and rebuttals. There were two students, 14.29 percent, used four elements. One of them applied *claim*, *data*, *counterargument data* and *rebuttal data* while the other employed *claim*, *counterargument claim*, *counterargument data* and *rebuttal data*. 7.14 percent of the moderate writing ability students applied five elements which are *claim*, *data*, *counterargument claim*, *counterargument data* and *rebuttal data* on their essays. Similar to the findings on the familiar topic, the students tended to miss the *rebuttal claim* element. For example, the student who used five elements claimed that being a business owner is better than being an employee. He provided supported *data*, *"business owner have more freedom and have more money"*. However, he pointed out *counterargument claim* as *"There are advantages of employee."* It was supported with *counterargument data*, *"don't too serious think about the future of business"* suggesting that an employee does not get pressure in concerning the business growth. The student then responded with *rebuttal data* that *"but business owner think to future of business to get more money."* supporting the implicit rebuttal claim that there is more preferable advantage of being a business owner. Interestingly, there was

one student (7.14%) employed all elements on the unfamiliar topic which did not occur on the familiar topic.

As seen in Figures 4.7 and 4.8, the moderate English writing ability students tended to rely on the basic elements in forming arguments on both topics after instruction. However, the percentage of the students using solely *claim* and *data* were higher on the unfamiliar topic (42.86%) comparing to the familiar one (35.71%). They were likely to compose more complex elements on the familiar topic owning to more application of counterargument and rebuttal elements. 42.88 percent of the students employed the second elements on the familiar topic while less percentage of them (35.71%) applied those elements on the unfamiliar one. The findings also revealed that after receiving the knowledge of the argumentative writing convention, some students still form argumentative essays improperly especially on the topic they had not experienced with. They did not take side which made the identification of Toulmin elements were impossible. Interestingly, despite all of these findings, some students used all six elements on the unfamiliar topic which did not appear on the familiar topic.

The inconsistency of the results before and after instruction was similar to those of the high writing ability level students. The moderate writing ability students were also likely to build less complex arguments on the familiar topic before instruction. Nonetheless, after teaching, they tended to apply more counterargument and rebuttal elements to form complex arguments when encountering the familiar topic. The number of the students who did not show the writers' stance on the familiar topic was also lower than those on the unfamiliar topic after treatment. It is plausibly due to the effect of insufficient knowledge of the writing convention. The students did not organize their rich ideas on the topic they were familiar with as effectively as after being introduced to the writing patterns and argumentative elements.

4.2.3 Low English writing ability levels

Since the low writing ability participants also received the instruction on the pattern and argumentative elements in composing the argumentative papers, the knowledge of the writing conventions may affect the students' writing performance. The findings of the application of the modified Toulmin elements on the low writing

ability students' essays formed before and after instruction are presented in Section 4.2.3.1 and Section 4.2.3.2 respectively. If the results before instruction are align with those after instruction, it should highlight the effect of topic familiarity. However, if the students' behaviors in building arguments on familiar and unfamiliar topics differ after experiencing intensive instruction, it should be assumed that the knowledge of the argumentative writing convention may have strong impact on the students' performance. The four essays are grouped in the following fashion:

- **Before instruction**

Question1: "Do you agree with the statement, 'Studying at school is better than studying online'?" (familiar topic: studying) **(Figure 4.9)**

Question3: "Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?" (unfamiliar topic: working) **(Figure 4.10)**

- **After instruction**

Question2: "Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?" (familiar topic: studying) **(Figure 4.11)**

Question4: "Do you agree with the statement, 'Being a business owner is better than being an employee'?" (unfamiliar topic: working) **(Figure 4.12)**

The tendency of how the low writing ability participants employed the modified Toulmin elements on their essays written before and after instruction was presented in Section 4.2.3.1 and Section 4.2.3.2 respectively.

4.2.3.1 Before instruction

Investigating how the students' arguments on a familiar topic were developed before instruction, the findings on the implementation of the modified Toulmin elements in response to the guiding question, *"Do you agree with the statement, 'Studying at school is better than studying online'?"* were presented in Figure 4.9.

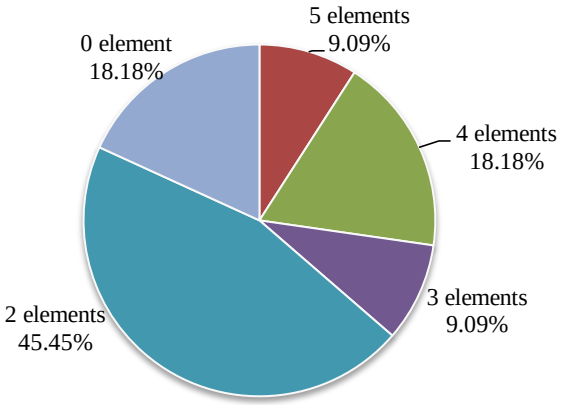

Figure 4.9 *The percentage of the low English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic before instruction (N=11)*

As indicated in Figure 4.9, 45.45 percent of the low writing ability students were likely to build their arguments through the basic elements which are *claim* and *data*. Similar to the results of the high and moderate writing ability students on the familiar topic before instruction, few students, 18.18 percent, did not include any argumentative elements since they did not show their stance on the given topic. One student responded to the guiding question as presented in the following excerpt:

> *Now in school we have to study online because all country now have Covid-19 or Corona Virus. The school tell the student need to stay in home and studying at home. They said we need to protect to Covid-19. But some student said study online is bad because they don't understand but some student said is good because we can eat breakfast in online class.*

As seen in the example from the student's essay, he did not state if he preferred studying online or on-site but providing pros and cons of online learning. Accordingly, the application of the modified Toulmin model cannot be detected by default.

Interestingly, more students at this writing ability level applied secondary elements on the familiar topic before instruction comparing to the high and moderate English writing ability students. Two students, 18.18 percent, employed four elements. One of them used *claim, data, counterargument claim* and *counterargument data.* The other one missed *counterargument claim* but was able to

respond to the counterarguments through the application of *claim*, *data*, *counterargument data* and *rebuttal data*. 9.09 percent of the low writing ability participants employed three elements which are *claim*, *data* and *counterargument claim*. The same percentage of them (9.09%) used five argumentative elements which compose of *claim*, *data*, *counterargument data*, *rebuttal claim* and *rebuttal data*. These findings emphasized the incompatibility of language proficiency and argumentative skills. Some students with low proficiency may face difficulty in expressing their ideas due to the language barrier but it does not mean that they lack critical thinking ability.

Comparing with the results on the experienced topic, the tendency in employing the argumentative elements on the papers with the question regarding the unfamiliar topic, *"Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'* were displayed in Figure 4.10.

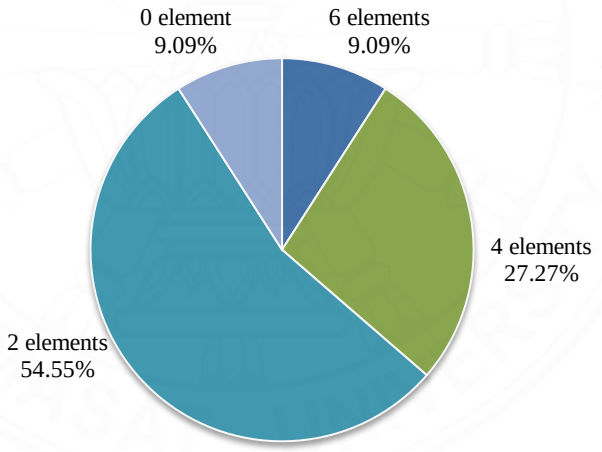

Figure 4.10 *The percentage of the low English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic before instruction (N=11)*

Regarding the findings on the complexity of the students' argumentation on the unfamiliar topic before instruction, Figure 4.10 indicates that 54.55 percent of the students were likely to apply the basic elements, i.e. *claim* and *data*, in forming argumentative essays. The percentage of the students applying the

two basic elements is slightly higher than those on the familiar topic. Comparing to the findings on the familiar topic, less percentage of the low writing ability participants (9.09%) did not state the stance but introducing pros and cons of both sides. The student responded to the topic that *"Freelancer have very good money. Freelancer have time for family and work from home. Full–time employee is also good. They have relax time on Saturday and Sunday…"* and elaborate pros and cons of both status without showing her stance. Accordingly, the application of the modified Toulmin elements was undetectable by default.

Nonetheless, there were some students who included counterargument and rebuttal elements in their essays. Three students, 27.27 percent, employed four elements on their essays. One student used *claim*, *data*, *counterargument claim* and *counterargument data*. Other two students missed *counterargument claim* but included the rebuttal elements. One of them employed *claim*, *data*, *counterargument data* and *rebuttal claim* while the other one applied *claim*, *data*, *counterargument data* and *rebuttal data*. Interestingly, whilst the application of six elements was not found on the familiar topic, there was one student (9.09%) used all six elements on the unfamiliar topic. This incident also occurred on the moderate writing ability group that some students could use six elements on the unfamiliar topic before receiving instruction. Surprisingly, this phenomenon did not appear with the high English writing ability students.

The findings in Figure 4.9 and Figure 4.10 indicate a similar tendency of the low writing ability students in forming arguments on both topics. The students were likely to rely on the basic elements, *claim* and *data*, especially on the unfamiliar topic (54.55%) comparing to those on the familiar topic (45.45%). There were few students generating argumentation improperly with higher percentage on the familiar topic (18.18%) while on the unfamiliar one was 9.09 percent. Thus, the modified Toulmin elements on their essays were undefinable. Furthermore, there was the same percentage of the students (36.36%) who applied secondary elements on both topics but the numbers of elements were slightly different. Accordingly, the complexity of arguments on familiar and unfamiliar topics was not outstandingly different.

4.2.3.2 After instruction

To testify if the results were in line with those before instruction, the findings on the use of the modified Toulmin elements responding to familiar and unfamiliar topics after instruction were presented in Figures 4.11 and 4.12 respectively. This section begins with the results from the essays on a familiar topic with the guiding question, *"Do you agree with the statement, 'Studying in Math-Science program is better than English-Chinese program'?"* as shown in Figure 4.11.

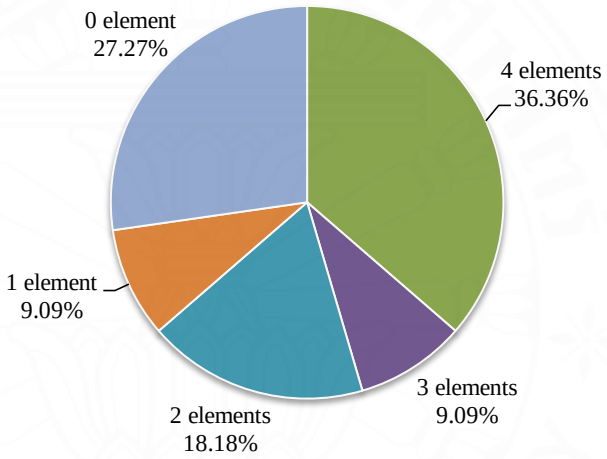

Figure 4.11 *The percentage of the low English writing ability students applying the modified Toulmin elements to form argumentative essays responding to a familiar topic after instruction (N=11)*

Figure 4.11 clearly shows that the percentage of the participants who employed solely the basic elements was less than those before instruction while the tendency of the students who applied more complex elements was greater. Four students, 36.36 percent, used four elements on their essays. Three of them applied *claim*, *data*, *counterargument data* and *rebuttal data*. They pointed out advantages of the opposite side and protected their stance by providing pros without addressing *counterargument claim* and *rebuttal claim* explicitly. The other one used *claim*, *data*, *counterargument claim* and *rebuttal claim* on her essay. She stated explicit claim of the opposite side and directly respond back to the claim without supporting evidence.

9.09 percent of the students employed three elements which are *claim*, *data* and counterargument data. Interestingly, although the percentage of the participants applying secondary elements was higher on the familiar topic after instruction, none of them applied more than four elements on their essays. On the contrary, there was one student used five elements on the familiar topic before receiving instruction. Regarding the application of the basic elements, 18.18 percent of the students relied on merely two basic elements, *claim* and *data*, which were lower than the findings before instruction. One student, 9.09 percent, only stated her stance or *claim* without any supporting reasons to convince the readers. The excerpt from her essay is as follow:

> *I think studying in Math-Science is better than English. If you study Math-Science program you can be many works. You can be engineer, doctor, or work with math and science relate. If you chose English-Chinese program you can be guide, teacher or work with language.*

As seen from the excerpt, she seemed to pay attention on the careers that the graduates from each program could apply without persuading which side was more preferable. This phenomenon is similar to the findings on the moderate English writing ability students in responding to a familiar topic after instruction. Moreover, there were some students, 27.27 percent, providing pros and cons of each program without taking side. One student wrote in respond to the guiding question that *"Math-Science is study harder because jobs is harder. Job like doctor have more money. English-Chinese program is more easy. Jobs is more chill and fun."* The percentage of the students whose argumentative essays were not formed properly without any Toulmin elements detected was higher than those before instruction. In overall, the findings suggested that the low writing ability students tended to formed more complex elements on the familiar topic with greater application of secondary elements after instruction. It could be in the influence of the topic familiarity along with the intensive treatment that encourages the students to express their ideas on the subject they had something to say with wider perspectives. However, to take a closer look if the topic familiarity or the writing convention knowledge has stronger impact, the results on the unfamiliar topic need to be presented.

The findings on how the low writing ability students employed the modified Toulmin elements to compose arguments on the unfamiliar topic with the guiding question, *"Do you agree with the statement, 'Being a full-time employee is better than being a freelancer'?"* were reported in Figure 4.12.

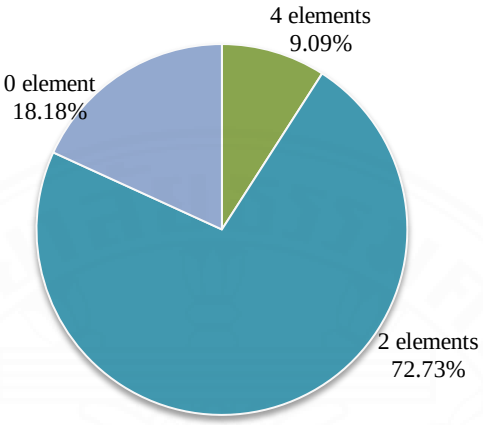

Figure 4.12 *The percentage of the low English writing ability students applying the modified Toulmin elements to form argumentative essays responding to an unfamiliar topic after instruction (N=11)*

As seen in Figure 4.12, the majority of the low English writing ability students, 72.73 percent, tended to apply two basic elements, *claim* and *data*, on the unfamiliar topic after being introduced to the writing convention. Some students, 18.18 percent, still did not state their stance after the intensive instruction. Similar to the findings on the familiar topic, some students were likely to elaborate pros and cons of both stances. For example, one student stated that *"Business owner is better than employee because a business owner can control all employee and all work….but I think employer is better than business owner too because can get many experience from a boss."* Since it is not clear which stance the writer took, the argumentative elements were unidentifiable.

Regarding the application of the secondary elements, only one student (9.09 %) applied four elements which are *claim*, *data*, *counterargument data* and *rebuttal data*. It is surprising that after receiving the argumentative writing convention knowledge, the percentage of the students who applied secondary

elements to form more complex arguments obviously decreased. They relied more on the basic elements. The findings pointed out that the instruction of the writing convention may not strongly influence every student' writing performance. In this case, there are other possible factors that the students formed less complex arguments after obtaining the treatment. Some low writing ability students may need more learning periods on the writing convention. Some of them may consider the secondary elements too complicated and chose to rely on the basic pattern. Another possible explanation is the effect of the given topic. The students may find some difficulty in expressing their ideas possibly due to the unfamiliarity of the topic or the students' interests in the assigned guiding question.

The findings presented in Figure 4.11 and Figure 4.12 point out that the low English writing ability students were likely to generate more complex argumentation on the familiar topic after instruction. On the contrary, the students apparently applied less secondary elements and relied more on the basic elements, *claim* and *data*, on the unfamiliar topic after teaching. The students might face more difficulty in expressing their ideas on the topic they had not experienced with even though they had received the knowledge of writing convention and were introduced to the modified Toulmin model. One possible factor is the given unfamiliar topic. The students may not feel familiar with the topic so they had nothing to say much comparing to the topic they had experienced with. This explanation is supported by Yuli and Halimi's study (2020). Their research revealed that the eleventh-grade Indonesian students preferred composing essays on familiar topics which they had experienced with because they felt that they had something to say more. It was also easier for them to find some words to describe their opinions.

The findings before instruction showed that the low English writing ability students tended to apply solely *claim* and *data* in building arguments on familiar and unfamiliar topics. However, after being introduced to the writing convention, the tendency of students using the secondary elements were higher on the familiar topic while the majority of them still relied on the basic elements on the unfamiliar topic. It indicated that the low writing ability students were likely to form more complex arguments on the familiar topic after instruction. Interestingly, there were even more students who formed the arguments improperly on both topics after

receiving the knowledge of writing convention. It indicated that merely the intensive treatment may not guarantee that all students would perform better. Rather, topic familiarity plays a great role here. This goes in line with Yuli and Halimi's study (2020) which revealed that the eleventh-grade participants preferred composing an essay on the familiar topic because they felt that they were able to find words to elaborate the details easily. Similar to the findings from the current study, the low writing ability participants may found the unfamiliar topic more difficult for them in generating ideas and may face the issue of language barrier when writing about the subject matter they were not familiar with.

4.3 Conclusion

Regarding the first research question on the total scores of arguments and two hypotheses, the null hypothesis was not rejected and hence the alternative hypothesis was not supported according to the statistical analysis. It means that there is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability. However, the findings on the complexity of students' argumentation in respect to the second research question show some difference on the effect of topic familiarity. Before they were introduced to the writing style and modified Toulmin elements, the students with high, moderate, and low writing ability levels tended to rely on the basic structure in argumentation by providing their stances and supported reasons on both familiar unfamiliar topics. For the high and moderate writing ability students, the minority of them were able to compose complex arguments through the application of counterargument and rebuttal elements mostly on the unfamiliar topic. Regarding the low writing ability, the students' writing performance on both topics was not remarkably different. Nevertheless, after being equipped with the writing convention knowledge, the students at all levels have a tendency to form more complex arguments on the familiar topic, especially for the low writing ability students. Only one of the low writing ability participants (9.09%) used counterargument and rebuttal elements on the unfamiliar topic whilst almost half of them (45.45%) employed those elements on the

familiar topic after instruction. The findings suggest that the familiar topics tended to encourage higher complexity of arguments especially after the students were prepared with the writing convention knowledge. The familiar topic might contribute to greater ideas since the students had experienced with the subject matter. As the findings on Yuli and Halimi's study, (2020) the participants stated that the familiar topics were more preferable since it was easier for them to express ideas on the topics they had experienced with and were able to find words to describe the details more easily. However, the results on their study also revealed that the participants' arguments were more logically organized on the unfamiliar topics while the essays on the familiar topics were overwhelmed with detailed descriptions. Yuli and Halimi explained that the topics which the students could engage more might encourage them to focus on sharing their ideas and personal experiences without concerning other points of view. This could be an explanation on the findings of the current study. Before receiving instruction, the participants may not have the knowledge of the argument structure and crucial elements in organizing their rich ideas on the topic they had experienced with. However, after the intensive instruction, they were encouraged to be aware of the writing convention and consider the subject matter with wider perspectives.

This chapter presents the findings on the quality and complexity of the students' arguments on familiar and unfamiliar topics. The results revealed that although the familiar topic seemed to support more complex argumentation, the total scores or quality of their arguments were not significantly different. The interpretation of the results in line with the findings from previous literature was presented in Chapter 5.

CHAPTER 5
DISCUSSION

The purpose of this chapter is to present the discussion of the findings in relation to the literature on the effect of topic familiarity toward the students' writing performance and and its beneficial implications for students, instructors or researchers who are interested in building or evaluating argumentative essays. This chapter also discusses the limitation of this study and the recommendations for future research, and a brief summary.

This study aims to explore the effect topic familiarity on the written argumentative skill of the students with different English writing abilities. The argumentative skill can be observed through two aspects: the reasoning and logical thinking abilities which can be measured through the quality of the arguments and the complexity of the arguments which can be seen through the numbers of argumentative elements used. To achieve the objectives, the research question and the hypothesis were proposed accordingly:

Research question1: Does a familiar topic encourage higher scores of arguments formed by students regardless of their writing ability?

Null Hypothesis (H0): There is no significant difference on the scores of arguments on familiar and unfamiliar topics formed by students regardless of their writing ability.

Alternative Hypothesis (H1): The scores of arguments on a familiar topic are higher than those on an unfamiliar topic, regardless of students' writing ability.

Research question2: What are the effects of topic familiarity toward the complexity of argumentation of students at all writing ability levels?

Regarding the reasoning and logical thinking abilities, the p-values from the one-tailed test indicate that topic familiarity does not have a significance effect on the quality of arguments. There is not enough evidence to reject the null hypothesis and hence the alternative hypothesis is not supported. It challenges the findings from previous literature since familiar topics do not facilitate better quality of arguments. However, regarding the ability in forming complex arguments, the findings show that

familiar topics tend to support more application of argumentative elements of the students at every English writing ability level. It answers the second research question that the students at all level were likely to form more complex elements when responding to a familiar topic especially after they were equipped with the writing convention knowledge.

The interpretations of the findings in relation to previous studies are discussed in Section5.1. The implications of practice which could be beneficial especially for instructors in teaching and evaluating argumentative essays are presented in Section 5.2. This chapter also discusses the limitations of this study which lead to the recommendation for future research in Section 5.3. The conclusion including the researcher's comments on the findings is presented in Section 5.4.

5.1 Interpretation of the findings

This section presents the interpretation and discussion of the findings in relation to previous research studies. The findings can be interpreted in two aspects. The effect of familiar topics on more complexity of the arguments which points out the importance of background knowledge and the sense of insiders is presented in Section 5.1.1. The insignificant difference on the quality of the essays on familiar and unfamiliar topics is later discussed in Section 5.1.2.

5.1.1 The effect of topic familiarity on the complexity of the arguments

Regarding forming a strong, convincing argument, Qin& Karabacak (2010) proposed six key argumentative elements that were modified from Toulmin model which are *claim* (thesis or statement), *data* (evidence, supporting details), *counterargument claim* (the opposite stance), *counterargument data* (evidence supporting counterargument claim), *rebuttal claim* (response to the counterargument claim), and *rebuttal data* (evidence supporting rebuttal claim). These elements require different levels of cognitive skills which in a way represent the students' critical thinking ability (Cottrell, 2005). *Claim* and *data* are the basic elements used to point one's stance and reasons adding persuasiveness to the arguments. The other four elements, *counterargument claim* along with *counterargument data* and *rebuttal*

claim supported by *rebuttal data*, are considered secondary elements that add more complexity to the arguments. These elements require more cognitive skills in recognizing another possible point of view and analyzing its validity. The writer also needs to evaluate the flaws of the opposite stance to protect the writer's point of view. Accordingly, the numbers and types of argumentative elements exploited should indicate the critical thinking ability or argumentative skill of the writers.

The results of this study reveal that the students at all English writing ability levels tended to generate more complex argumentation when encountering a familiar topic. The findings from all three levels are consistent in the sense that the participants were likely to apply secondary elements more on the familiar topic while employing merely the basic elements more on the unfamiliar topic especially after instruction. It highlights the effect of the familiar topic with which the writers have personal experienced on the richness of the content regardless of English writing ability.

The findings are consistent with those presented in the previous research studies on the impact of the familiar topics on critical thinking ability. Indah (2017) conducted a research investigating the relationship of critical thinking, writing performance and topic familiarity of EFL students at an Islamic university in Indonesia. The participants were assigned to write essays responding to an initiated topic representing a familiar topic and a topic assigned by the teacher which is considered an unfamiliar topic. The results show that the topic initiated by students has positive contribution toward critical thinking skills as the students could elaborate more ideas and obtained higher mean scores on their essays. The impact of familiar topics on the fruitfulness of the ideas is also reported in Yuri and Halimi's study (2019). The two researchers studied the effects of topic familiarity on eleventh graders' writing performance and their perceptions toward their experience in writing to respond to familiar and unfamiliar topics. In this study, the familiar topic related to the subject that the participants had personal experienced with while the unfamiliar topic regarded the subject that they had not experienced before. The results from this study reveal that the students tended to include more details on supporting data when encountering the familiar topic. The findings from the perceptions of the participants

also show that the familiar topics were more preferable for the students as they felt that they had something to say more on the topics they had personal experience with.

However, the findings from the present study regarding the higher application of secondary elements on the familiar topic are inconsistent with the results in Stapleton's research conducted in 2001. Stapleton explored if the content familiarity plays a role in students' critical thinking ability. 45 Japanese undergraduate students were assigned to write argumentative essays responding to the topic about rice importation to Japan as a familiar topic that was widely discussed in the participants' country at that time. Another topic is about gun control in the United States which was regarded as an unfamiliar topic since it took place outside the participants' setting. The results show that familiar topics encourage greater content production and critical thinking skills. The richness of the content was from the higher numbers of arguments and supporting reasons. Stapleton reported that on the familiar topic, the participants formed more claims with more supporting evidence in terms of number and variety. They supported their claims on familiar topic with multiple types of evidence which included personal experience, expert opinion, and abstraction while the variety of the evidence on the unfamiliar topic is lesser and shallower. The students also applied references with greater numbers and types including websites, agricultural operative, national and local governments, newspaper, and NGOs when writing about the familiar with whilst making references to merely NGOs and newspaper when they discussed the unfamiliar topic. The findings contrast with the results presented in the current study which suggested that the students tend to apply more data or supporting evidence of their claims with the unfamiliar topics. Moreover, while Stapleton's study shows that the participants employed more counterarguments and rebuttals on the unfamiliar topics, the present study reveals that the students applied more secondary elements in recognizing opposite point of view and refusing that point to protect the writer's stance on familiar topics. Interestingly, Stapleton reveals that although the numbers of counterarguments on the unfamiliar topic is higher, the variety of counterarguments on the familiar topics is greater. In overall, Stapleton concluded that the familiar topics support more critical thinking ability.

One explanation on the effect of familiar topics is that the writers have more background knowledge on the familiar topics which is the crucial knowledge in forming a writing task (Hyland, 2003) and is a foundation of critical thinking (Emilia, 2010) (as cited in Indah, 2017). Hyland stated that there are five important knowledge types that L2 writers should obtain before completing a writing task. The five kinds of knowledge are content knowledge, system knowledge, process knowledge, genre knowledge, and context knowledge. Content knowledge or background knowledge of the topic plays a great role in effective writing. If the students do not understand the content of the topic well, it is hard for them to analyze and evaluate the subject matter to form their arguments. Emilia (2010, as cited in Indah, 2017) also mentioned the importance of the background knowledge as the foundation for higher order thinking skills. In Bloom's taxonomy as revised by Anderson and Krathwohl (2001), they proposed the process of thinking in hierarchical order starting from the lowest thinking skill to the most complex thinking skill: *remember*, *understand*, *apply*, *analyze*, *evaluate*, and *create*. The lower-order levels are believed to be the base of the higher levels which means that the higher-order thinking skills are more complexed and require more thinking ability. To improve critical thinking ability or argumentative skills, the students should *remember* and *understand* the content well so they can develop higher order thinking skills. Once they are well-prepared with the knowledge on the topic they are encountering, then they can go beyond their existing knowledge in analyzing and evaluating the strength and weakness of what they know and be able to form the arguments to protect or argue against it. Providing the familiar topics to the students, the teacher prepares their students with the background knowledge from or close to their personal experiences and encourages them to give some ideas rather than responding to some matters that they do not have experience with. As mentioned in Yuri and Halimi's study (2019), some participants prefer familiar topics because they felt like they had more things to say about them.

Apart from stimulating the writers' background knowledge, familiar topics also encourage the writers to think as insiders who consider the topic to be their problem and encourage them to share more ideas to solve it. As mentioned by Ramanathan and Kaplan (1996, as cited in Stapleton , 2001), assigning the students to

argue about some matters that they are not familiar with would be more disadvantage for them as they might not consider it as a problem at all. It would be more difficult to argue about something that the students cannot engage with. In the present study, the familiar topic is *studying* with the guiding questions on the issues that they had faced before. They had gone through the time that they had to decide what program was more suitable for them and experienced in online and on-site learning. The familiar topic then provoked them to be an insider and resulted in the higher number of argumentative elements used especially the secondary elements. It allows them to engage more with the issues by recognizing the possible opposite side and why the students' stance is still true. On the other hand, the unfamiliar topic concerns the issues in the context of working which the students had never experienced the status as workers before. The results then showed that the students merely applied basic elements to support their stance, so their arguments become less complex.

Although the results of this study reveals that a familiar topic tends to facilitate more application of argumentative elements for the students at every English writing ability level, the results in high and moderate writing ability groups before instruction show the opposite. After instruction, the high and moderate writing ability students were also likely to apply more modified Toulmin elements on the familiar topic. However, before they received the knowledge of the writing convention, the percentage of students applying counterargument and rebuttal elements was higher on the unfamiliar topic. It means that when they had not been introduced to the effective argumentative writing convention, the students at high and moderate writing ability levels were likely to form more complex arguments when encountering an unfamiliar topic. The results are consistent with the findings in Yuri and Halimi's study (2019). It suggests that even though the participants revealed their perception that they preferred the familiar topics because they could express some ideas and details on the topic more easily, their arguments seemed to be more logically organized on the unfamiliar topics. Yuri and Halimi explained that the participants' arguments tended to overwhelm with detailed descriptions with less awareness the idea organization. Weigle (2002, as cited by Yuli and Halimi, 2019) called this incident as the drawback of the familiar topics. Students could be so emotionally engaged on the subject matter that they forget to be aware of the writing process and idea organization. Accordingly,

the unfamiliar topics could allow them to think from other perspectives with a more careful consideration of possible strengths and weaknesses of each stance. The drawback of the familiar topics is also reported by Stapleton (2001), who revealed that although in overall the arguments written by the Japanese undergrads in respond to the familiar topic showed better performance than the participants' writings on the unfamiliar topic in terms of the number and variety of arguments, evidence and references, the arguments on the unfamiliar topic show more frequencies of counterarguments and less frequencies of fallacies. Stapleton also reported that the fallacies found in essays on the familiar topic always link to emotional involvement such as the misleading of emotional appeals or a strong sense of nationalism while this kind of fallacy did not appear in those writings on the unfamiliar topic. The fallacies appeared on the unfamiliar topic tended to be more of conventional types which are oversimplification and irrelevancies. This could be an explanation on the more frequent appearance of argumentative elements in high and moderate writing ability students' essays responding to the unfamiliar topic before instruction. However, after the intensive treatment, the students were likely to apply more modified Toulmin elements on the familiar topic. It could be the effect of the knowledge of argumentative writing convention that helps the students become more aware of the idea organization and think from other perspectives so they could organize their rich ideas on the familiar topic better and included more secondary elements concerning the opposite stance on the familiar topic.

Although the results in this section indicate that a familiar topic encourages written argumentative skill of students at all level in terms of the ability in applying more argumentative elements, the quality of the arguments are not affected by the topic familiarity. It means that a more familiar topic does not have a significant impact on students' reasoning and logical thinking abilities. The findings on this matter are later discussed in the next section.

5.1.2 The effect of topic familiarity on the quality of the arguments

This section presents the findings on the effect of the topic familiarity on the quality of the students' arguments with the discussion of possible factors that influence the quality of the students' critical thoughts. The previous research studies reveal that explicit instruction along with proper teaching techniques that encourages

students to become active critical thinkers can improve the students' argumentative skill.

Although the findings suggest that the familiar topics encourage more written argumentative skill in terms of the ability in forming more complex arguments, it turns out that topic familiarity does not have a significant impact on the quality of the arguments written by students at every English writing ability level. The results in this study are consistent with the study conducted by Stapleton and Wu (2015) which points out that the surface structure or the numbers of argumentative elements used does not guarantee the quality of the arguments. The two researchers analyzed 125 essays written by high school students in Hong Kong. They found that some essays contained good surface structure which means all argumentative elements were applied but the quality of reasoning was poor. It suggested that the numbers of argumentative elements do not ensure the quality of the arguments. The researchers then captured six patterns of the arguments regarding the surface structure and the quality of reasoning and later developed the Analytic Scoring Rubric for Argumentative Writing (ASRAW) that concerns the assessment of both argumentative elements and reasoning quality. This rubric was also applied as the research instrument in the present study. From the results, the familiar topics may have an impact in encouraging the writers to be aware of important argumentative elements to form more complex arguments but the awareness of the crucial elements does not guarantee that the writers can use them effectively. Stapleton and Wu explained in their study that the quality of the arguments mainly relies on the data or reasons backing up claims. The persuasiveness of each claim relies on the two features of the supporting data which are the acceptability and relevance. The strong data must be relevant and acceptable in supporting a claim. However, the ability in selecting strongly acceptable and relevant data or the quality of reasoning and logical thinking does not come with the knowledge of the argumentative writing convention. It goes beyond the knowledge of argumentative models as this ability requires higher order thinking skills in analyzing, evaluating and creating the strongly acceptable and relevant data (Anderson and Krathwohl, 2001). The question is what possibly affects the argumentative skills in terms of the reasoning and logical thinking abilities in forming a strong argument and if these skills are plausibly cultivated. The previous

research revealed that these high order thinking skills can be improved by the explicit instruction along with the proper teaching strategies with the appropriate length of training time.

Nejmaoui (2019, as cited Gelder, 2005) proposes that humans are not naturally critical and hence the students' critical thinking competence is not developed unless being taught. Nejmaoui conducted a study investigating the effect of the integration of critical thinking teaching into a writing course. The results reveal that the students in the experimental group who received explicit instructions of writing with critical thinking skills through the argumentative essays outperformed the students in the control group who received merely the knowledge of argumentative writing convention. The findings also show that the students in the experimental group showed higher ability in using more reliable evidence, recognizing alternative points of view, supporting their conclusions and keeping on the logical flow of their arguments. However, after applying Illinois Critical Thinking Essay Scoring Rubric to test the critical thinking skills of the students in both groups, the scores of post-test essays written by the students did not reach the mastery level but still shows the improvement in their critical thinking ability in their argumentative essays than those written by the students in the control group. Nejmaoui explained that the training period was too short. The longer length of training time should encourage greater outcome. Another research conducted by Luna, Villalón, Mateos and Martín (2020) also confirmed the effect of explicit instruction on the improvement of critical thinking skills. They conducted a research study exploring if the integration of explicit instruction through online training improves the students' argumentative performance. The results are in line with Nejmaoui's study showing that only the students in the experimental group who received the training were able to form better-structured texts, present their stance more clearly with proper introduction and conclusion, and include more counterarguments.

Apart from explicit instructions, the appropriate teaching strategies are also crucial in nurturing students' argumentative skills. A study by Kristianti, Ramli and Ariyanto (2018) which investigated the impact of teacher's questioning technique on the students' argumentative skills found that considering the results after the technique was applied, explicit instructions alone did not significantly improve the

students' argumentative skills. The eleventh graders in one of the senior high schools in Boyolali were grouped according to the score of the Minimum Criteria for Student Competencies (MCSC) into low achievement group (LA) and high achievement group (HA). Both groups were taught in two circles. The first circle was dominated by the teacher who provided explicit instructions on argumentation. The assessment of the students' arguments showed that many students' argumentation ability was still at the low level in the rubric of argumentation level according to Osborne et al (2004). They tended to form their arguments by stating only claims without supporting them with credible data. However, in the second circle, the teacher's questioning technique was employed. This technique leads students from common responses to a deeper discussion of the topic which urges students to focus on the three domains: the subject on discuss, students' personal reaction, and external reality. After the integration of the teacher's questioning technique during the second circle, the evaluation of the students' arguments according to the rubric of argumentation level shows that the argumentation ability of students in both groups reached the high level with higher ability in providing strong evidence to support claims. Another study that applied the Talk-Write technique also reports similar results. Tandiana, Abdullah, and Komara (2018) conducted a research study on the effect of Talk-Write technique which allows students to discuss the given topics before completing an argumentative writing task. The findings show that the scores of their argumentative essays were higher after the application of this technique. The researchers claimed that the Talk-Write technique helps the students generate more ideas on the subject matter being discussed and also shape their arguments since this technique provides opportunities for debates and discussions among students. The perceptions of the student participants reveal that this technique also creates positive learning atmosphere that made them feel confident. They also received encouragement from their peers to express their opinions.

The previous studies confirmed that argumentative skills can be nurtured through explicit instruction of argumentation along with proper teaching techniques such as teacher questioning technique and Talk-Write technique that allow the students to become active in expressing their critical thoughts and practicing their critical thinking ability through debate and discussion. However, as the argumentative

skills are not easily taught, the length of learning time is also important. If the training time is too short, students' argumentative skills may not be improved. It can be seen from the findings in the present study that the knowledge of argumentative elements and the writing conventions are not sufficient in generating higher quality of the arguments. The participants could apply more argumentative elements on the familiar topic but the quality of the arguments is not significantly higher than that of the essays on the unfamiliar topic which contain fewer argumentative elements. The results highlight that reasoning and logical thinking skills involve more complex processes that need time and appropriate strategies in nurturing.

5.2 Implications for Practice

In evaluating students' written argumentative skill, there are two aspects that should be considered which include the complexity of the arguments and the quality of their reasoning. The findings in this study agree with those presented in Stapleton and Wu's study (2015) which indicated that the evaluators cannot rely on the surface structures or the numbers of the argumentative elements alone since the presence of the argumentative elements does not guarantee that they are applied effectively. The presented reasons are possibly weak and irrelevant. Accordingly, Stapleton and Wu's Analytic Scoring Rubric for Argumentative Writing (ASRAW) could be a useful rubric in evaluating the argumentative essays as the descriptions for grading do not only concern the numbers and types of the elements, but also the relevance and the acceptability of the data used to support a claim.

Regarding the effect of familiar topics, although the familiar topics do not have a significant effect on the quality of the arguments, a familiar topic still contributes to greater argumentative elements used. This type of topics can be beneficial for students especially beginners when generating their ideas and forming their arguments. The instructors may apply this type of topic when giving explicit instructions along with proper teaching techniques that help them express their opinions and discuss with their peers on the subject matter they are more familiar with. An unfamiliar topic could also be beneficial for students. The students could be encouraged to think from other perspectives and discuss on the matters of facts rather

than their personal experience as the previous research also reported its effectiveness on the contribution to logical organization of the ideas (Stapleton, 2001; Yuri and Halimi, 2019).

5.3 Limitations and Recommendations

The limitations of this study involve the sample size, the research design, data collection, and the teaching period. The number of the participants in this study is limited to only 37 students studying in Grade9 at the targeted school. The greater numbers of student participants definitely leads to more reliable quantitative results. It is recommended for future research to expand the size of the samplings especially when they are divided and grouped according to their English writing ability. The higher populations in each writing ability level would represent the written argumentative skill of the students who are at the particular level better.

Regarding the research design, more qualitative approach such as the interview or open-ended questions would bring more insights about how students perceive the familiar topics and unfamiliar topics and what are the effects of the topic familiarity toward them from their experiences. It also encourages for future research to bring more qualitative perspectives on the effect of topic familiarity from the participants' point of view.

As for data collection, the students were assigned to write solely one essay on the familiar topic and one essay on the unfamiliar topic before and after instruction. Overall, they wrote only two essays on the familiar topic and two papers on the unfamiliar topic. The small numbers of the essays were due to the limited available time of the participants. The higher numbers of the essays on each topic familiarity should represent the effect of the topic familiarity better. It is suggested for future studies to collect more data on familiar and unfamiliar topics to see the students' performances when responding to topics with different degrees of familiarity in a broader view.

Due to the limited available time of the participants, the intensive instruction was designed to cover all necessary information for composing argumentative essays within three periods. The short period of teaching may not be effective for all students

since the findings revealed that some participants did not form arguments appropriately. They did not take side which is required in building an argument and hence the application of argumentative elements were absent by default. It can be seen from Chapter4 that some students did not include any modified Toulmin elements. Thus, their argumentative papers were scored zero. Accordingly, the longer period of instruction might encourage more understanding of the writing convention for these participants.

Even though the findings highlight the effectiveness of a familiar topic in promoting more complex arguments, the results also show the inconsistency of the surface structure or the numbers of the argumentative elements and the quality of the arguments. It is worth exploring what factors influence the quality of students reasoning and logical thinking abilities in forming higher quality arguments and how to facilitate the students to use each element effectively on both familiar and unfamiliar topics. The future research on the recommended issues should bring out some useful insights that would contribute to the field of argumentative writing instruction.

5.4 Conclusion

The findings pointed out that a familiar topic encourages more written argumentative skill in terms of the ability in applying the crucial argumentative elements to form more complex elements. The results are not surprising and consistent with many studies that the students tend to able to express more ideas and details on the subject matters they are more familiar with since they possess more background knowledge on the topics and are able to think as the insiders who can engage on the problems more easily. The interesting findings lie in the fact that the higher numbers of argumentative elements on the familiar topic essays do not result in higher quality arguments. These findings raise the awareness that merely providing students with the knowledge on the effective argumentative writing structure does not necessarily enable them to use it effectively. Cultivating reasoning and logical thinking abilities in forming sound arguments requires more time and efforts. Accordingly, it is important for instructors to pay attention not only on the explicit

instructions in introducing an effective argumentative model, but also on the strategies and techniques used to encourage students to practice their argumentative skills. Once the students' critical thinking skills are well-shaped, they should be able to form convincing or sound arguments, whether they are familiar with the topics or not. The familiar topics hence should be considered only a trigger that helps the students especially the beginners, to express their ideas and form their arguments more easily. Instructors should not be too confident that familiar topics would influence the quality of content production.

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APPENDICES

APPENDIX A

Qin & Karabacak's Definitions and examples of six Toulmin elements (2010,p.449) (slightly adapted)

Element	Definition with illustrative examples
Claim	Definition: An assertion in response to a contentious topic or problem Example: *Foreign language learning is not essential for internationalization.*
Data	Definition: Evidence to support a claim. It can take various forms, such as facts, statistics, anecdotes, research studies, expert opinions, definitions, analogies, and logical explanations. Examples: *1. An old Chinese lady with no knowledge of English active in international art exchange because of her great skill in paper-cutting. (anecdote)* *2. Countries such as Germany, France, Italy and Japan, though much more internationalized than China, do not place as much emphasis on English learning as China. (fact)*
Counterargument claim	Definition: The possible opposing views that can challenge the validity of a writer's claim; these opposing views can also be supported by data (Nemeth and Kormos, 2001) Example: *The importance of English education has been recognized by many countries in the world, including developed European countries.*
Counterargument data	Definition: Evidence to support a counterargument claim Examples: *1. Under a 1990 law, all Spanish schoolchildren are now taught a foreign language (98% choose English) from the age of 8 and in some regions start at 6. (fact)* *2. In the Madrid region there are 26 bilingual schools and colleges in which courses—with the exception of Spanish literature and mathematics—are taught in English; by 2007 there will be 110. (fact)*
Rebuttal claim	Definition: Statements in which the writer responds to a counter-argument by pointing out the possible weakness in the claim, data, or warrant, such as logical fallacies, insufficient support, invalid assumptions, and immoral values (Ramage and Bean, 1999) Example: *The French government, one of the important European countries, is trying all the means to resist the spread of English and preserve their own language.*
Rebuttal data	Definition: Evidence to support a rebuttal claim Examples: *1. The French have spent billions on promoting their language in French-speaking territories in African and the Pacific. (fact)* *2. The French government has imposed sanctions on officials or agencies using Americanisms or English phrases where a French equivalent exists. (fact)*

APPENDIX B

Stapleton & Wu's Analytic Scoring Rubric for Argumentative Writing (2015, p.20)

1.Claim(s) (5%)	Score: 5			Score: 0	
	States point(s) of view			Does not state point(s) of view	
2. Data (25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the claim(s), and b. All reasons are sound/acceptable and free of irrelevancies	a. Provides multiple reasons for the claim(s), and b. Most reasons are sound/acceptable and free of irrelevancies, but one or two are weak	a. Provides one to two reasons for the claim(s), and b. Some reasons are sound/acceptable, but some are weak or irrelevant	a. Provides only one reason for the claim(s), or b. The reason provided is weak or irrelevant	a. No reasons are provided for the claim(s); or b. None of the reasons are relevant to/support the claim(s)
3. Counterargument Claim(s)/Alternative Point(s) of View(10%)	Score: 10			Score: 0	
	Provides counterargument claim(s)/alternative view(s)			Does not provide counterargument claim(s)/alternative view(s)	
4. Counterargument Data/Supporting Reasons for Alternative Point(s) of View(25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Provides multiple reasons for the counterargument claim(s) /alternative view(s), and b. All counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies	a. Provides multiple reasons for the counterargument claim(s)/alternative view(s), and b. Most counterarguments/reasons for the alternative view(s) are sound/acceptable and free of irrelevancies, but one or two are weak	a. Provides one to two reasons for the counterargument claim(s) /alternative view(s), and b. Some counterarguments/reasons for the alternative view(s) are sound/acceptable, but some are weak or irrelevant	a. Provides only one reason for the counterargument claim(s)/alternative view(s), or b. The counterargument/reason for the alternative view is weak or irrelevant	a. No reasons are provided for the counterargument claim(s)/alternative view(s); or b. None of the reasons are relevant to/support the counterargument claim(s)/alternative view(s)
5. Rebuttal Claim(s) (10%)	Score: 10			Score: 0	
	Provides rebuttal claim(s)			Does not provide rebuttal claim(s)	
6. Rebuttal Data[a] (25%)	Score: 25	Score: 20	Score: 15	Score: 10	Score: 0
	a. Refutes/points out the weaknesses of all the counterarguments, and b. All rebuttals are sound/acceptable c. The reasoning quality of all the rebuttals are stronger than that of the counterarguments	a. Refutes/points out the weaknesses of all the counterarguments, and b. Most rebuttals are sound/acceptable, but one or two are weak c. The reasoning quality of most rebuttals are stronger than that of the counterarguments, while one or two are equal to that of the counterarguments	a. Refutes/points out the weaknesses of all the counterarguments, and b. Some rebuttals are sound/acceptable, but some are weak c. The reasoning quality of some rebuttals are stronger than that of the counterarguments, while some are weaker than that of the counterarguments	a. Refutes/points out the weaknesses of some counterarguments, or b. Few of the rebuttals are sound/acceptable; most of them are weak, or c. The reasoning quality of most rebuttals are weaker than that of the counterarguments	a. No rebuttals are provided; or b. None of the rebuttals can refute the counterarguments

Note. [a] An implicit requirement of rebuttal data is subsumed under the requirements of row 4 "Counterargument Data" , that is, each piece of rebuttal data should be aligned with each piece of counterargument data in terms of both quantity and logic.

APPENDIX C

Lesson Plan

Period 1

Course Title: Intensive Argumentative writing course
Course Level: Grade 9
Number of Students: 37
Learning Goals: By the end of the lesson, students should be able to…
1) understand the definition and objectives of argumentative writings
2) identify the main elements of argumentation based on the modified Toulmin model (Qin&Karabacak, 2010)
Teaching Duration: 50 minutes (1 period)

Teaching Activities:

Activities	Procedures	Materials used
Warm-up (10 minutes)	1. The students are asked about their experiences in persuading someone and are asked to discuss about daily topics such as 'How to persuade your parents to buy you a new laptop' and 'How to persuade your parents to buy you a motorcycle' with the class.	
Training session (30 minutes)	2. The teacher concludes that a writing that allow the students to persuade readers is argumentative writing and explain its definition along with the objective of this type of writing. The teacher then introduces the modified Toulmin model (Qin&Karabacak, 2010) and explains each element. The students write the definition of each element from their understanding on worksheet 1	worksheet 1 *see appendix A*
	3. The teacher brings up the topic 'How to persuade your parents to buy you a new laptop' again and let them form an argument verbally in accordant with the model. The students write short example of each element based on the topic discussed on their worksheet individually.	worksheet 1
	4. The teacher brings up another topic 'How to persuade your parents to buy you a motorcycle' and let the students work in pair so they can discuss together to select	worksheet 2

Activities	Procedures	Materials used
	the strongest reason to fill in each modified Toulmin element on the worksheet.	
	5. The teacher asks the students in each pair what reasons they provide in each element. The students discuss with the class.	
Wrap-up (10 minutes)	6. The teacher asks the students to review the definition and purpose of argumentative writing.	
	7. The teacher asks the students to review the element of a strong argument in accordance with the modified Toulmin model (Qin&Karabacak, 2010)	

Evaluation:

- Students' worksheet

Individual student's worksheets are checked and corrected by the teacher using these following criteria.

3 marks are rewarded to worksheets which gain at least 80% correctness,
2 marks are rewarded to worksheets which gain at least 50% correctness, and
1 mark is rewarded to worksheets which gain lower than 50% correctness.

Lesson Plan
Period 2

Course Title: Intensive Argumentative writing course
Course Level: Grade 9
Number of Students: 37
Learning Goals: By the end of the lesson, students should be able to…
1) identify and differentiate each main element of argumentation based on the modified Toulmin model (Qin&Karabacak, 2010) in argumentative essays
2) understand the construction of argumentative essays
Teaching Duration: 50 minutes (1 period)

Teaching Activities:

Activities	Procedures	Materials used
Warm-up (10 minutes)	1. The students are asked to review the definition and purpose of the argumentative essays along with the argumentative elements in the modified Toulmin model (Qin&Karabacak, 2010)	
Training session (30 minutes)	2. The teacher provides the students with a reading passage titled 'Getting up early vs. staying up late'. The students read individually and are allowed to ask the teacher to clarify the meaning of words unknown.	Reading passage 1: Getting up early vs. staying up late
	3. The teacher asks the students to conclude the reading passage to make sure that all students understand the passage.	
	4. The teacher asks the students to identify sentences that represent the modified Toulmin elements found in the story and write the sentences on the worksheet 3 individually.	worksheet 3
	5. The teacher asks the students to discuss about their answers with the class.	
	6. The teacher provides the students another reading passage titled 'Travel with a companion vs. travel alone'. The students read individually and are allowed to ask the teacher to clarify the meaning of words unknown.	Reading passage2: Travel with a companion vs. travel alone
	7. The teacher asks the students to conclude the reading passage to make sure that all students understand the passage.	

Activities	Procedures	Materials used
	8. The teacher asks the students to identify sentences that represent the modified Toulmin elements found in the story and write the sentences on the worksheet 4 individually.	worksheet 4
	9. The teacher asks the students to discuss about their answers with the class.	
	10. The teacher asks the students to conclude the reading passage to make sure that all students understand the passage.	
	11. The teacher asks the students to notice the idea organization of two passages and compare. The teacher sums up and introduces three basic idea organizations in forming an argument: starting with the opposite stance and end with the writer's stance, starting with the writer's stance and end with the other side's argument, and dealing with each counterargument separately in single paragraphs.	
Wrap-up (10 minutes)	12. The teacher asks the students to review the element of a strong argument in accordance with the modified Toulmin model (Qin&Karabacak, 2010)	

Evaluation:

- Students' worksheets

Individual student's worksheets are checked and corrected by the teacher using these following criteria.

3 marks are rewarded to worksheets which gain at least 80% correctness,

2 marks are rewarded to worksheets which gain at least 50% correctness, and

1 mark is rewarded to worksheets which gain lower than 50% correctness.

Lesson Plan
Period 3

Course Title: Intensive Argumentative writing course
Course Level: Grade 9
Number of Students: 37
Learning Goals: By the end of the lesson, students should be able to…
1) evaluate the soundness of the argument.
2) select reliable evidence to support each claim to form a strong argument
Teaching Duration: 50 minutes (1 period)

Teaching Activities:

Activities	Procedures	Materials used
Warm-up (10 minutes)	1. The students are asked to review the argumentative elements in the modified Toulmin model (Qin&Karabacak, 2010) and review the arguments from two reading passages in period 2.	The worksheets 3 and 4 from period 2
Training session (30 minutes)	2. The teacher introduces the Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015) and explain the description provided in the rubric.	the Stapleton and Wu's Scoring Rubric for Argumentative Writing (2015)
	3. The teacher asks the students to rate quality of the argument from the reading passage 1 in the worksheet using the criteria from the rubric.	The worksheet 3 from period 2
	4. The teacher discusses the quality of the argument from the reading passage 1 with the students.	
	5. The teacher asks the students to rate quality of the argument from the reading passage 2 in the worksheet 4 using the criteria from the rubric.	The worksheet 4 from period 2
	6. The teacher discusses the quality of the argument from the reading passage 2 with the students.	
	7. The teacher asks the students to compare the quality of two arguments and asks them to discuss about the strengths and weaknesses of each argument.	The worksheets 3 and 4 from period 2
Wrap-up (10 minutes)	8. The teacher asks the students to review the modified Toulmin elements and sum up how to form an argument to make a strong argument in accordance with the description provided in the rubric.	

Evaluation:

- Students' worksheets

Individual student's worksheets are checked and corrected by the teacher using these following criteria.

3 marks are rewarded to worksheets which gain at least 80% correctness,

2 marks are rewarded to worksheets which gain at least 50% correctness, and

1 mark is rewarded to worksheets which gain lower than 50% correctness.

APPENDIX D

Reading Passage1
Getting up early vs. staying up late

Some people prefer to get up early in the morning and start the day's work. Others, however, prefer to get up later in the day and work until late at night. As far as I am concerned, getting up early is a good habit because it is good for health, and it is easy for people to take care of everyday work.

In the first place, everyone knows that getting up early is a very good habit for our health. You can enjoy the fresh air in the early morning, and also you can get a good night's sleep during the quiet midnight. Moreover, if you get up early, before go to work, you still have enough time to do some exercises, such as walking, running and riding the bike. Without doubt, all of the exercises can help your to stay healthy.

In the second place, it is easy to take care of everyday work if people get up early. For example, if everyone in the family gets up early, the wife will have enough time to prepare the breakfast for the whole family, the children will have enough time to catch the school bus, the husband will never forget to change his dirty shirt. Everything is in order.

Admittedly, some people who work until midnight and get up later in the day claim that working in the midnight is more efficient for them and they can concentrate on their work without distraction. However, the advantages of getting up early carry more weight than those of getting up late.

To sum up, from what I have discussed above, we can safely draw the conclusion that getting up early can benefit us not only because it is good for our health but also it is easy for us to take care of everyday work. Therefore, I prefer to get up early in the morning and start the day's work.
(ToeflEssays.com, 2004)

Reading Passage2

Travel with a companion vs. travel alone

Traveling is a very pleasant thing. Some people like to travel with several friends. Other people, however, would prefer to travel alone. As far as I am concerned, traveling with my friends is better.

Why do some people like to travel alone? For one thing, they can experience more freedom. They do not need to discuss the itinerary of travel with others. He/she can just go whenever he/she wants. For another, they do not need to keep an eye on how to get along with friends.

Although there may be one or more advantages to traveling alone, I insist that traveling with friends is better. In the first place, the trip will become easy. Traveling is not a very easy activity. For example, you need to find transportation, hotels and restaurants in new places. Several friends can share these tasks so that everyone has a chance to enjoy the journey.

In the second place, you can get help when you need. There will be many unexpected things that could happen during the journey. Such as, someone gets lost, gets sick, or cannot wake up early for the morning flight. It is very tough for people to handle these situations by themselves especially when they travel to a new place. Friends can give you a hand to overcome all these difficulties. Everyone needs the help from others.

In addition, you can have more fun by traveling with friends. Enjoying the scenic spots is wonderful, while traveling on the road is boring. How to spend this boring time? Talking with friends, playing cards will help. In conclusion, I prefer to travel with friends rather than travel alone not only because the trip will be easier with friends, but also because I can have more fun by with friends' company.

(ToeflEssays.com, 2004)

APPENDIX E

Worksheet 1

Element	Definition	Example
Claim		
Data		
Counterargument claim		
Counterargument data		
Rebuttal claim		
Rebuttal data		

Worksheet 2

Topic: How to persuade your parents to buy you a motorcycle

Claim	
Data	
Counterargument claim	
Counterargument data	
Rebuttal claim	
Rebuttal data	

Worksheet 3

Reading passage 1: Getting up early vs. staying up late

Claim	
Data	
Counterargument claim	
Counterargument data	
Rebuttal claim	
Rebuttal data	

Worksheet 4

Reading passage 2: Travel with a companion vs. travel alone

Claim	
Data	
Counterargument claim	
Counterargument data	
Rebuttal claim	
Rebuttal data	

BIOGRAPHY

Name	Miss Supawadee Jaijon
Date of Birth	February 23, 1994
Educational Attainment	2016: B.A. (2nd Class Honor) in Philosophy major, English minor Chulalongkorn University
Work Experience School	2017- Present: Sarasas Witaed Phetchaburi Position: English teacher (Secondary)
Limited	2016: Thai Life Insurance Public Company Position: Interpreter and administrator