



**DEVELOPMENT OF ARGUMENTATIVE ESSAY
WRITING THROUGH FLIPPED CLASSROOM
INSTRUCTION BY USING EDPUZZLE APPLICATION**

BY

KITTHANATE LAWANWONG

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN ENGLISH LANGUAGE TEACHING
LANGUAGE INSTITUTE
THAMMASAT UNIVERSITY
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ENTITLED

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was approved as partial fulfillment of the requirements for
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ABSTRACT

This study examined the achievement of Thai12th grade EFL students in writing argumentative essays and their perspectives on the utilization of flipped classroom instruction with the EdPuzzle program. Thirty participants from Samut Prakan Province were selected using convenience sampling. Before receiving instruction through this method, they completed a pretest. During the lessons, the participants' progress in argumentative essay writing was monitored to evaluate the effectiveness of this strategy. Following the instruction, posttests and questionnaires were administered as research instruments to assess students' writing development and their attitudes toward learning. A scoring system was used to evaluate all four aspects (claim, reason, rebuttal, and organization) of the participants' argumentative essay tasks. The findings revealed a significant increase ($t=14.39$; $P=0.00$; $df=29$) in post-test mean scores ($X=16.67$) for argumentative essay writing. The mean score for all dimensions in the pretest was 1.88 with an average standard deviation (S.D.) of 0.76, while in the posttest, the mean score was 4.15 with an average S.D. of 0.45. Qualitative data collected and analyzed included students' learning attitudes, which were predominantly classified as “very positive” ($X=4.93$). Most students expressed satisfaction with the flipped classroom instruction using the EdPuzzle application,

noting its convenience and ability to offer flexible study periods, thereby enhancing their learning experience.

Keywords: flipped classroom instruction, argumentative writing, EdPuzzle



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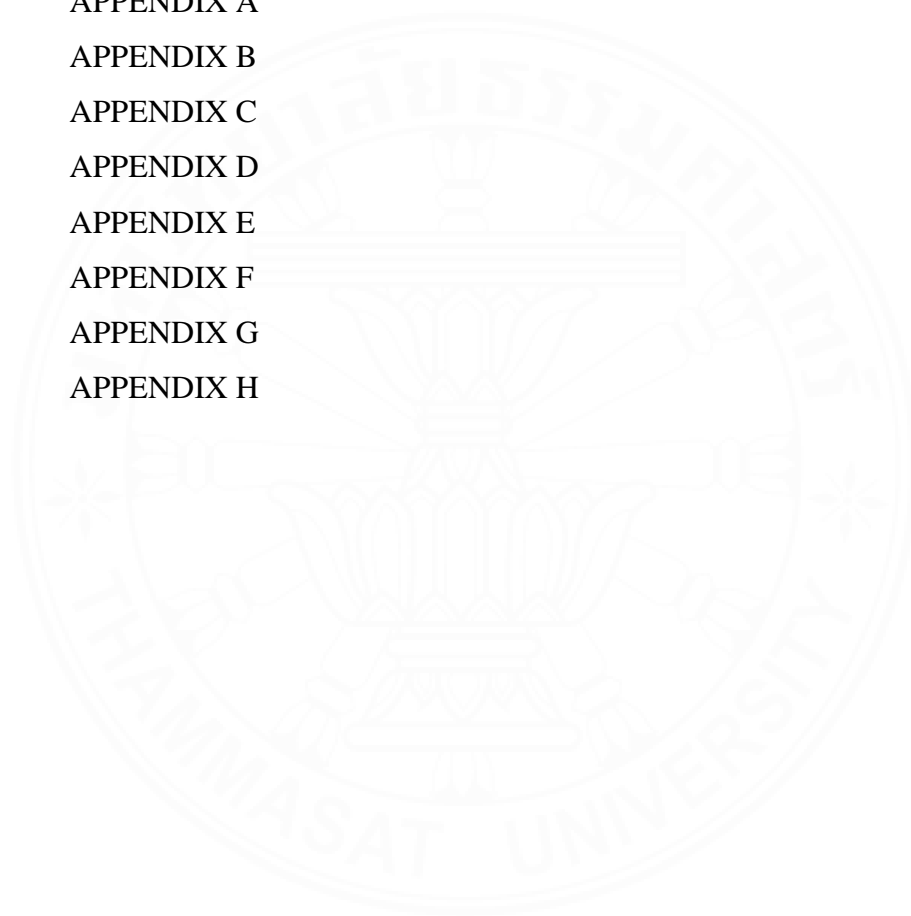
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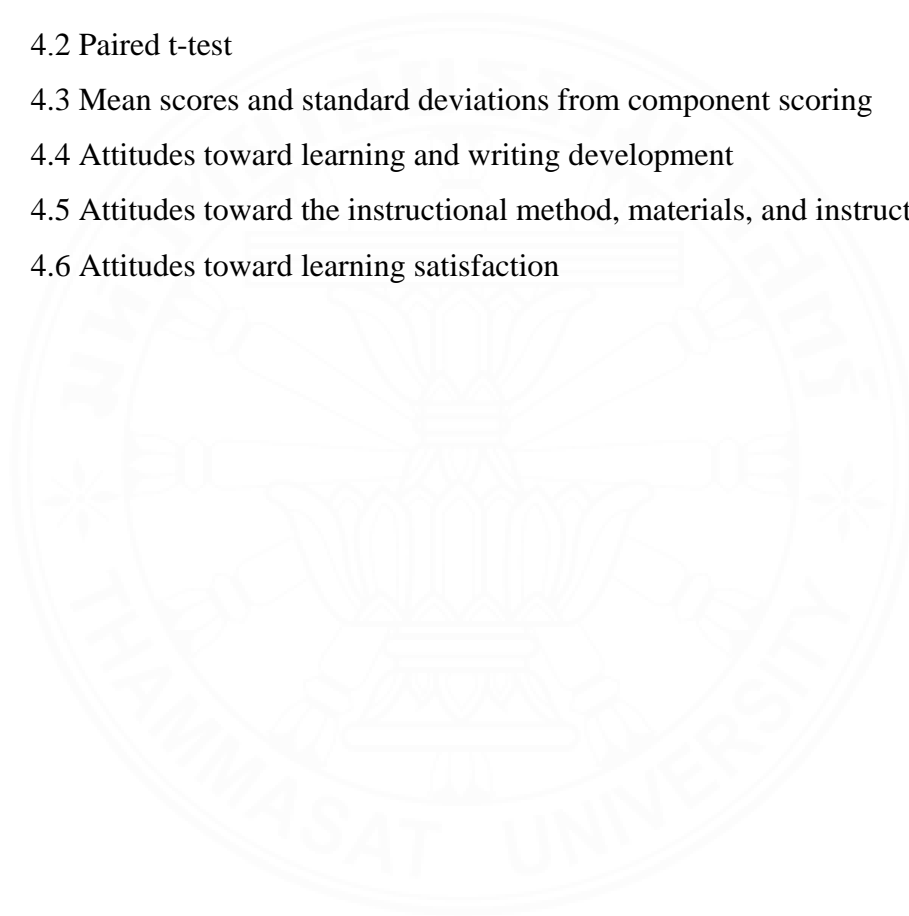
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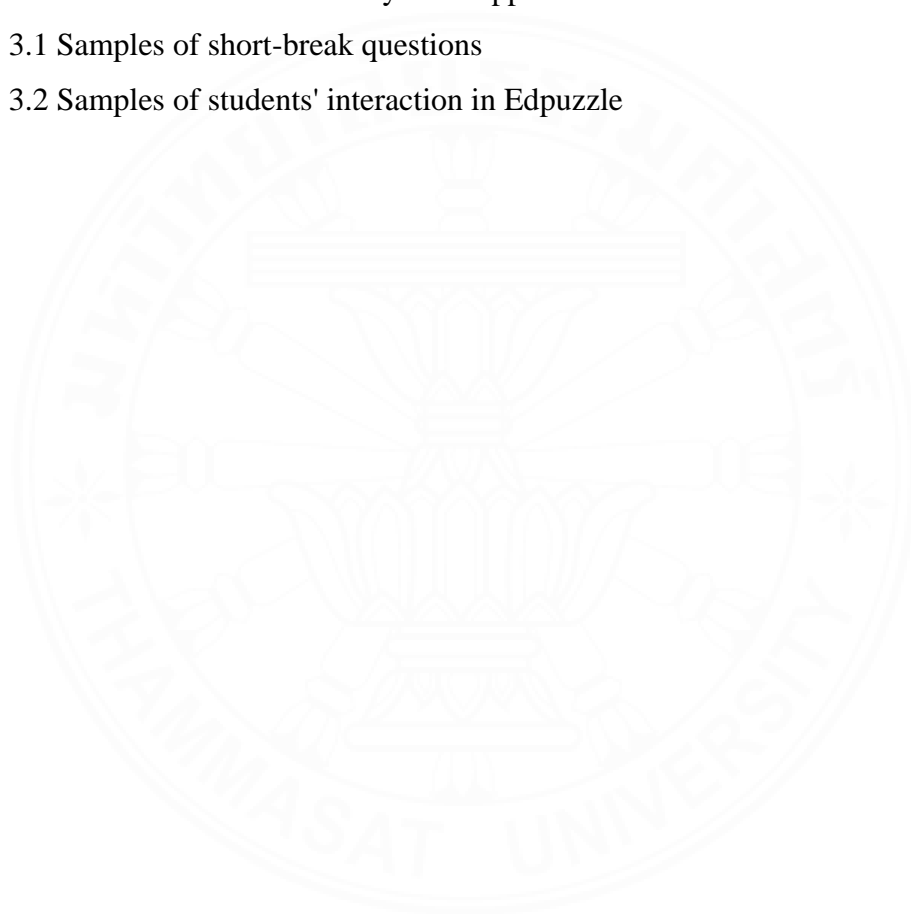
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LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
FC	Flipped Classroom Instruction
TC	Traditional Classroom Instruction



CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Language is a means of communication to express opinions, ideas, reasons, and feelings. Language consists of four integrated skills, namely writing, reading, listening, and speaking. These skills cannot be underestimated as they play a crucial role in human life. It involves the alternation between receptive and productive activities to express emotions, feelings, and opinions in English. Communication enables us to exchange information with others through various mediums such as the internet, journals, diaries, and more.

In the English subject, there are four skills that are learnt by students: listening, speaking, reading, and writing. Listening is one of the communication skills that requires students to understand, translate, and assess what they heard. Reading is a cognitive process of decoding and encoding meaning from printed requires letters and information. Speaking is the ability to express ideas through a spoken medium. The last skill is writing. Writing is a representation of language which is used to express and explain ideas in a textual medium using signs and symbols. Rahmawati et al. (2019) stated that writing is an action, a process of discovering and organizing your ideas, putting them on the paper and reshaping and revising them. Initially, learners typically grasp listening and speaking skills before progressing to reading and writing skills.

Writing is one of the skills that should be mastered by students because it is an important skill of language development. As stated by Babalola (2012) and Sirait et al., 2023, writing can be used as a means of communication. In the global era, many aspects of life need writing skill as a part of the requirements. One of the examples which writing takes an important role is in the educational setting. In the educational setting, students are expected to be able to do academic writing. Therefore, schools or institutions should provide their students with sufficient skills which are needed to face real-world situations with the authentic language use.

One important type of writing to be learned in school and in the university is argumentative writing (Murstama (2015, p. 3); Preiss et al., 2013; Sirait et al., 2023).

Students at universities frequently use argumentative writing when they produce a paper for a thesis or daily assignment. Argumentative writing is employed extensively because papers require strong and compelling arguments, often involving novel and creative ideas. In professional settings, students must possess persuasive skills to effectively convince peers and colleagues in their respective fields. Many students find it difficult to critique arguments and provide strong evidence. The most prevalent issue is students' failure to make polite declarative statements because they are not accustomed to working with this style of writing and because they lack the information necessary to support their arguments convincingly and clearly.

In the modern world of teaching and education, the transition from the traditional pedagogical methods to more innovative and technological methods is inevitable. The focus on “Blended Learning”, which encourages student-centered, self-motivated search of knowledge, has been highlighted by the integration of communication and information technologies into the educational process. The fundamental piece of blended learning is the model called “flipped (or inverted) classroom”, which was developed by American educators Jonathan Bergman and Aaron Sams in 2000 (Bergman & Sams, 2012). The authors refer to their approach as “a framework that ensures students receive a personalized education tailored to their individual needs”.

Flipped classrooms, a novel pedagogical model that focuses on learner-based instruction, have come into prominence among many researchers and practitioners all over the world. This flipped classroom approach not only helps students learn course content out of the class, but also allocates class time for interactive activities, by inverting the conventional teaching mode and engaging learners in hands on practices via group work. Thus, it facilitates clarifying misunderstandings with teachers and classmates through in-class discussions. This approach serves as a model for colleagues and schools to introduce learners to alternative teaching methods that encourage thinking creatively. The appeal of the flipped classroom lies in moving beyond traditional textbook learning. By freeing up lecture time from delivering theoretical content, class sessions can focus on generating open-ended questions, collaborative projects, and group activities. These methods actively engage students and foster real-life applications in their studies (Bergmann & Sams, 2012; Tucker, 2012; Fulton, 2012).

According to FC, technology should integrate FC in writing tools for students as a writing prompt (Hughes et al, 2019), such as YouTube, Edmodo, and Edpuzzle. The Edpuzzle application is a web-based tool allowing teachers to pick a video for their students to watch and learn anywhere and anytime according to their schedule and availability. This application was chosen for different reasons, mainly for its educational benefits and flexibility of the platform of this web tool. It works on Android devices, IOs and all web browsers. Edpuzzle assists teachers by providing a variety of educational videos sourced from different platforms like TED Talks and Khan Academy, categorized for easy access. Teachers can select a video and enhance it by adding audio explanations, comments, insights, and notes. They can also insert quizzes at various points in the video to gauge students' comprehension and knowledge. This tool is particularly beneficial for accommodating students' preferences for video-based learning. Additionally, Edpuzzle enables teachers to embed questions directly within videos, facilitating student interaction and engagement during viewing.

1.2 Statement of the Problem

Students in grade twelve at Samut Prakan School are required to study English for six hours a week in addition to one hour with native speaker each week from a native speaker. Additionally, they have examined all aspects of English language proficiency, including speaking, reading, and writing. Students are also required to write argumentative essays as part of their writing assignments to communicate and express their thoughts on the assigned subject. However, most of them failed to correctly compose it in accordance with their creativity and writing structure.

The researcher identified challenges among students in learning English, especially evident in their struggles with writing argumentative essays, as observed in the argumentative writings of students from Samut Prakan. The students' issues are: (1) they struggle to articulate their ideas in writing; (2) they make errors because they lack the necessary vocabulary and grammatical skills; (3) they are unable to structure their topic in essays. To enhance students' argumentative writing abilities, this research will combine Edpuzzle with flipped classroom instruction.

There isn't much time for actual writing practice since teachers must spend the majority of class time introducing the content before moving on to the writing job. The

students must therefore complete their writing assignments at home. They have no support at home to help them with any issues that might arise while they are writing. Teachers have made an effort to alter the activities in an effort to address the issues; yet, they still have trouble catering to each student's unique learning style. The success of the flipped classroom approach in writing classes could enable students to promote their argumentative writing skills in class while also addressing issues with writing classes and individual learning preferences.

According to San, L.H., Edpuzzle is an online tool that enables instructors to modify videos from YouTube, Khan Academy, TED Talks, and other video hosting websites. Teachers can change the duration of the movie after importing their preferred films. In addition to video editing features, Edpuzzle offers voiceover capabilities that let teachers customize video lessons for their classes. However, the video also has a quiz component that is integrated into it. At particular points in the film, teachers can assign questions for pupils to respond to. While watching the film, the students should respond to these. In conclusion, the research used Edpuzzle media as an alternative media for teaching English, especially for teaching writing ability in argumentative essay.

1.3 Objectives of the Study

1) To examine students' argumentative essay writing skill development through flipped classroom instruction using the Edpuzzle application in the first semester with twelfth grade students in Samut Prakan School in the academic year 2023.

2) To investigate the attitudes of students towards flipped classroom instruction using the Edpuzzle application.

1.4 Research Questions

1) To what extent can students develop their argumentative essay writing skills through flipped classroom instruction using the Edpuzzle application?

2) What are the attitudes of students towards flipped classroom instruction using the Edpuzzle application?

1.5 Significance of the Study

This empirical study is expected to provide benefits, both theoretically and practically, as follows:

1) Benefits for students: The results of this study are expected to be useful to generate effective interaction between students and train individuals to work together to overcome the problems of learning so as to improve their academic writing achievement and increase their motivation in learning English.

2) Benefits for teachers: The results of this study are expected to provide benefits for teachers of English by solving the existing problems arising in particular in the field of study English as an alternative to improve student in writing achievement, namely by applying the flipped classroom learning model.

1.6 Definition of Terms

The researcher gives definitions of the key terms, as follows:

1) **Genre-Based Instruction** - This educational approach prioritizes the relationship between the sociocultural environment and the rhetorical and linguistic components, while following a comprehensive process that includes clear instruction, active participation from learners, and the production of individual written works. Hyland's teaching cycle consists of four stages: background information, model, joint construction, and autonomous state. This cycle was specifically created to facilitate writing instruction using a flipped classroom approach.

2) **Argumentative Essay** - An argumentative essay is a written composition that adopts a certain position on a contentious matter. Students endeavor to convince readers to comprehend and support their perspective on four distinct subjects (Education, Technology, Society, and Environment) by articulating their rationale and furnishing supporting data. Student writings are assessed based on four criteria: claim, reason, rebuttal, and organization.

3) **Flipped Classroom Instruction** - The flipped classroom is an educational approach that involves two essential components: individualized online instruction outside of the classroom and interactive learning activities conducted within the classroom. Outside of the classroom, the researcher created videos using Edpuzzle that were based on Hyland's writing instruction in the background knowledge, as well as the

modal states before class. The classroom context incorporated joint construction and independent stages of the genre teaching cycle to provide students with opportunities to exercise their argumentative writing skills, receive feedback from the instructor, and revise their writing.

4) Edpuzzle - Edpuzzle Learning Media is an online platform that facilitates the use of brief videos to aid in the learning process. Instructors can access and utilize material from the most effective educational channels on Edpuzzle. Outside of the classroom, students utilize Edpuzzle to enhance their background knowledge on various topics, study the structure of argumentative essays, and engage in interactive discussions with their instructors and peers prior to writing assignments in class.

1.7 Scope of the Study

1) In this research, the researcher implemented the flipped classroom learning model using the Edpuzzle application to improve students' writing skills, especially in regard to writing argumentative essays. The researcher only focused on argumentative essay, which included an introduction, body, and conclusion.

2) This study was conducted with 30 12th grade students studying in EN30229 Developing English 1 at Samut Prakan School in the first semester of academic year 2023.

3) The experiment was carried out by the researcher, who was the only instructor of the writing class.

4) The period of the experiment lasted approximately eight weeks of the whole academic semester. Each class took three periods a week (50 minutes per period), and the overall period of the instruction covered 20 hours in total.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Writing Review

2.1.1 Definition of Writing

Writing competence refers to the skill of effectively communicating ideas or imaginings in a structured manner, ensuring that readers grasp the intended meaning of the writer's work. Writing is the medium through which individuals transform their ideas and thoughts into written form, though these ideas and thoughts can also be conveyed verbally. Therefore, writing is an essential component of English proficiency. In addition to reading, speaking, and listening, writing is a challenging talent to acquire (Pratiwi, 2017).

According to Harmer (2007a), in the teaching of writing, emphasis can be placed on the final product rather than the writing process. When concentrating on the product, we are only concerned with the purpose of a task and its outcome. Those who support a process-based approach to writing, on the other hand, pay close attention to the many stages that any piece of writing undergoes. The output of writing emphasizes the process of concept exploration.

In addition, vocabulary, grammar, structure, spelling, and punctuation influence writing as a process that results in a product. In the English writing course, students must know and comprehend these aspects. Students have acquired the ability to write several types of text. They should produce uncomplicated commercial correspondence (Fatimah, 2017).

Writing forms words, then sentences, and finally a text from the arrangement of sentences. In addition to serving as a means of communication, writing is a process of self-discovery in which one searches for the meaning of his existence (Murray, 1973). It is utilized more for exploration than reporting. In addition, writing involves thinking since manipulating symbols allows us to "see what we have said, examine it, refocus it, and reconsider it think" (Murray, 1973). Writing may also be considered an art that involves "creation, creating, and building" (Murray, 1973).

Harmer (2007a) recommends four basic elements/stages of writing after listing the aspects that can influence writing: planning, drafting, editing (reflecting and rewriting), and the final version. In the planning phase, authors determine what they will say in consideration of the objective, audience, and type of writing. Some individuals may take extensive notes while others scribble down only a few words. Although some prefer to write their plans down, for others mental planning is sufficient. During the drafting phase, the initial draft of a text is prepared and held for revision. During the editing phase, changes are made by first examining the overall structure and then focusing on the details; by adding, rearranging, or removing certain sections; by checking for grammatical and mechanical accuracy, ambiguous or incorrect words, coherence and unity of content; or by enlisting the assistance of other readers. In the last section, authors compose their final draft and deliver it to the audience. Harmer emphasizes that these steps are not related in a sequential sense, but rather the process is recursive, meaning that writers can re-plan, re-draft, and re-edit as necessary (2007a). Once they believe that the version is complete, they may publish it. In addition, the first three stages of writing may take no time at all if the writer plans, (re)drafts, or edits the final draft simultaneously.

2.1.2 Functional Writing Skills

As one of the four fundamental language abilities, writing is accorded special significance. The importance of writing is supported by research; it has considerable academic and occupational significance. Writing is an effective means of conveying one's views to others. It promotes his sense of ownership and allows one to communicate one's inner feelings. Writing is the most popular method of evaluating students' English proficiency (Salem, 2008).

According to Heaton (1994), writing skills are complicated and challenging to teach, requiring mastery of not only grammatical and rhetorical methods, but also intellectual and evaluative factors. The writing process involves a variety of abilities necessary for effective writing, including language use, mechanical skills, topic treatment, stylistic skills, and evaluation skills. English language learners must strengthen their writing skills in order to improve their comprehension. Writing and reading are more difficult to acquire through conversation than speaking and listening.

When education is explicitly tailored to students' needs, writing skills are significantly improved. Writing is one of the most essential tools humans use to express themselves, shape ideas, persuade and convince others. As writing is a vital instrument for learning, there has been a growing emphasis on its instruction (Abolyosr, 1996). A functional approach to language acquisition in general and to writing in particular emphasizes the development of writing through communication. It secures the use of language for certain objectives and promotes the use of language in a meaningful manner (Hartnett, 1997).

2.1.3 Purpose of Writing

Grenville (2001) claimed that when writing, the writer aims to communicate signals to the reader. Whatever the type of writing, it was essential for the writer to have an individual and unambiguous objective. The task can be accomplished by carefully choosing appropriate vocabulary and constructing sentences in a manner that effectively communicates the desired message. The intended objective of a written work will dictate the specific rhetorical structure employed for its composition (Pratiwi, 2017). There are three purposes of writing: to entertain, to inform and to persuade:

1) To entertain - Writing for entertainment typically involves the creation of imaginative or creative works. This implies that the writer must employ their ingenuity. The text should elicit an emotional response from the readers rather than provoke laughter.

2) To inform - The objective of informative writing is to convey information to the reader. Informative writing can encompass several subjects, such as items, places, methods, and occurrences. Newspapers, articles, scientific or corporate reports, instructions or processes, and essays for school and university are examples of this.

3) To persuade - The writer endeavors to persuade the reader of the validity of a particular point of view by providing factual information in a manner that encourages readers to adopt the writer's beliefs and act accordingly. Ultimately, the act of writing serves multiple objectives beyond only conveying ideas, emotions, or thoughts through written symbols. It also aims to entertain, inform, and persuade the readers.

Based on the previously mentioned rationale, it can be inferred that purposeful writing might be advantageous for the reader. Typically, students engage in writing to

articulate their thoughts, convey information, convince others, or produce a piece of literature.

2.1.4 Components of Writing

Writing has several components that must be considered. There are two theories that explain the components in writing. There are five components in writing described by Tribble and Jacob (1981), they are:

1) Content - Clarity and comprehensibility are crucial for readers to grasp the message and acquire knowledge from it. Effective content writing is distinguished by the presence of coherence and comprehensiveness, wherein each paragraph addresses a central concept and substantiates it with logically connected sentences. Only material that directly supports the topic sentences should be included. Completeness guarantees that the central concept is comprehensively elucidated and expanded upon, with the controlling notion being extensively developed through detailed information. The degree of completeness is contingent upon the intricacy or comprehensiveness of the topic sentences. In general, a masterfully crafted piece of writing guarantees that the intended message is effectively communicated and offers valuable information to readers.

2) Organization - The writer emphasizes the chronological arrangement and organization of concepts in their work. Additionally, they should articulate their ideas in a sequential manner, following a logical progression from start to finish. There are numerous methods employed to organize or structure writing. This organization is primarily acknowledged as an institution of authority. Coherence refers to the quality of ideas being logically connected and unified in an article. A cohesive paragraph is a paragraph in which all concepts are arranged in the correct order and are never muddled or confused. This ensures that the writer's ideas are presented in a coherent manner, with words and paragraphs that flow logically.

3) Vocabulary - Vocabulary is a component of language that pertains to the acquisition and usage of words in the context of studying writing. During the writing process, the writer contemplates the act of constructing sentences and subsequently organizing them into paragraphs, ultimately resulting in the creation of a written composition. Proficiency in selecting appropriate words can enhance our writing skills.

4) Language use - Writing requires adherence to the laws of language and grammar for proper language usage. The focus is on verbs, nouns, and agreement. Concrete nouns and vivid verbs evoke vivid imagery in the reader's mind. This particular noun can be described by employing modifiers such as adjectives, adverbs, and participles. A modifier might be a phrase. There are numerous possibilities for errors in verb usage, and mistakes in order are quite prevalent. Errors in written work, on the other hand, carry greater significance, as we have the chance to review and rectify our writing. To ensure accuracy, it is important to prevent errors in verbal forms, subject-verb agreement, and pronoun antecedent agreement while dealing with nouns and pronouns.

5) Mechanics - Writing mechanics encompass the proper usage of capitalization, punctuation, and spelling. This component is particularly crucial as it enables the reader to promptly comprehend and accurately interpret the writer's intended message. Utilizing effective mechanics in writing facilitates readers' comprehension of the conveyed ideas and messages in the text.

Based on the aforementioned description, it can be seen that writing involves not only expressing our thoughts, but also carefully considering several aspects such as content, organization, terminology, language usage, and mechanics, all of which should align with the intended topic. Furthermore, by skillfully organizing our writing, we not only enhance its aesthetic appeal but also facilitate the reader's comprehension of its intended message.

2.2 Writing Instructions

2.2.1 Process Writing Approach.

The process approach to writing emerged in the late 1960s and early 1970s as a reaction to the product approach, in which students were required to produce "model writing" that was assessed based on "content, organization, vocabulary use, grammatical use, and mechanical considerations such as spelling and punctuation" (Brown, 2001). Under the product approach, student writers are required to compose writings that "(a) fulfill specific norms of mandated English rhetorical style, (b) display precise grammar, and (c) are ordered in accordance with what the audience would consider traditional" (Brown, 2001).

Students are expected to be conscious of their writing process as they progress through the stages of writing in the process-based approach to writing. In a process-based writing workshop, students are encouraged to find their own voice, choose their own topic, have something meaningful to say, receive teacher and peer feedback, and revise their work (Matsuda, 2003). As they write, they consider their audience, but these are "known readers within the language classroom" because classmates and teachers respond to their writing (Raimes, 1991).

According to Shih (1986), revisions are the focal point of writing classes taught with the process approach, and teachers intervene in the writing process as opposed to merely responding to the final output. After receiving comments from the instructor or peers, students revise their drafts or start from scratch. Thus, the writing process is "transactional and overlapping" (Zamel, 1982). Nevertheless, one of the disadvantages of the process approach is that it is time-consuming (Harmer, 2007b). Students require time to undertake some language study, to create or research ideas, to discuss and select those to be utilized, to write drafts, edit, and review, and if necessary, to re-draft or re-edit. In addition, communicating with a teacher or peer for criticism demands a substantial amount of time, whereas revising "with little guidance and dedication" would make "little sense for the writer - or the reader" (Raimes, 1987, p. 461). The majority of the time, spending so much time in the process is troublesome since the majority of teachers must adhere to tight curricula or their pupils may not recognize its value and want to complete writing immediately.

Therefore, it is recommended to thoroughly explain the purpose of the process approach to students and to encourage them through instruction in the use of correction symbols, the completion of checklists, and participation in collaborative writing (Harmer, 2007a, p. 10). They should be instructed to follow these steps even throughout the examination (Harmer, 2007b, p. 327).

According to Harmer (2004:4-6), there are four steps to the process:

(A) Planning - Before beginning to write, the author must plan their work by considering, attempting, and determining what they will say. In the process of planning, the author must consider the following three factors:

1) The reason for writing. It is essential to consider the objective of writing, as this will affect the quality of the writing produced. In addition, the objective of the

writing will influence the choice of language, with the author choosing the most appropriate form. Therefore, the reader will receive the information effectively.

2) The audience for whom they are writing. The target audience here is the reader. The audience will influence the structure of the paragraph, the arrangement of the writing, the choice of words, and the formality or informality of the language style.

3) The organization of the writing: The optimal order of facts, ideas, or arguments that the authors have chosen to include.

(B) Drafting - Drafting is the process of putting ideas on paper in sentence or paragraph form. Drafting is essential in the writing process to assist the author in writing thoughts and determining what should be written first, second, third, etc.

(C) Revision (reflecting and revising) - In this process, the author reads through a draft. If the author discovers ambiguous or confusing text, he or she may rewrite it or eliminate it. Other readers must revise and reflect in order to provide the author with a proper revision.

(D) Final Version - This is the final writing step. After the manuscript has been edited, the writer should revise the editing process and construct a final process by examining what is required. This may differ visually from the draft. Nonetheless, the author is prepared to offer the reader a written form.

Process-based writing is widely regarded as the authentic approach through which writers fulfill their writing tasks, from initial planning to final draft. O'Brien (2004) defines this technique as an activity where teachers encourage students to perceive writing not merely as grammar exercises, but as a process of discovering meaning and ideas. By employing Herwin's five-step writing process model, teachers can assist students in exploring their concepts and fostering their own writing throughout the writing process.

1). Prewriting - Teachers will provide a writing task and help students to generate vocabulary and ideas by applying a number of strategies in class, namely brainstorming, clustering, and discussion, without concern for correctness or appropriateness in the first stage of writing.

2) First draft composing - Learners will use vocabulary and ideas which they have got from the previous stage to express what they want to convey in their writing.

3) Feedback - In this writing stage, learners will receive comment from real audiences, which can be a writing teacher or their peers, and then move on to new ideas in another draft.

4) Second draft writing - Based on the comments of teachers and peers, learners will modify their previous draft by revising, adding, and rearranging ideas.

5) Proofreading - In the final stage, student writers will not only discover new ideas and language forms to express their ideas in writing but also focus on the appropriate use of vocabulary, layout, grammar, and mechanics.

2.2.2 Definition of Genre

"Genres are rhetorical actions that writers draw on to respond to perceived repeated situations; users see certain language choices as representing effective ways of getting things done in familiar contexts," claimed Hyland (2010), adding that the word "genre" was borrowed from a French word that means "kind" or "class."

Swales (1981) defined genre as "a more or less standardized communicative event with a goal or set of goals mutually understood by the participants in that event and occurring within a functional rather than a social or personal setting" in his monograph *Aspects of Article Introductions*.

2.2.2.1 Genre-Based Writing Approaches According to Martin (1999), genre is a communication action with a specific objective. Swales (1990) then defines genre as a communication event in which the participants have a certain objective in goal. By referring to the two sentences above, it can be concluded that genre is a communication process that has a specific aim (goal-oriented) for its participants in a specific communication event owing to a certain social context. Communication is an issue of genre.

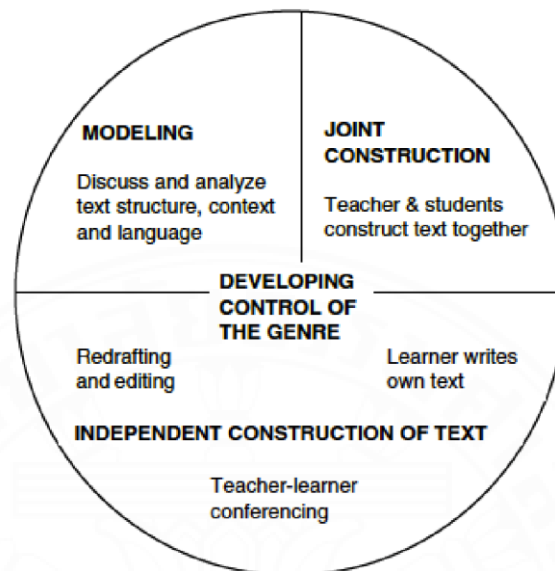
According to Hyland (2003), the goal of genre writing is to achieve a certain objective in addition to allowing the author to write. For instance, how to recount, report, or describe something, how something is done or carried out, etc. The authors must adhere to specific social conventions, language traits, and rhetorical devices in this instance.

Dirgeyasa (2016) suggests that the genre-based approach to teaching and learning writing integrates both process and product approaches. It considers genre as both a framework for teaching and learning writing and as a result of the writing process itself. This approach emphasizes the structured process of writing, offering clear steps to follow. Moreover, it underscores the unique characteristics of writing, such as organization, design, purpose, and language features. The genre-based approach proves especially beneficial for students with limited skills and motivation, guiding them from basic, guided steps to more independent writing and fostering autonomy in learning. This method is applicable not only in academic environments but also in professional contexts, providing a novel perspective on writing.

2.2.2.2 Genre-Based Writing Instruction The sociocultural context, in which writing serves as an intentional form of communication, is the primary emphasis of genre-based training, which also takes into account the "discourse and contextual aspects of language use" (Hyland, 2003a). The emphasis on the connection between linguistic texts and social situations in genre-based education helps learners understand the rhetorical and grammatical characteristics of various genres, or "socially recognized ways of using languages for particular purposes.

Figure 2.1

Developing Control of the Genre (Hyland, 2003a)



The above illustration demonstrates the genre-based instruction teaching-learning cycle proposed by Hyland (2003a), which includes contextualizing, modeling, negotiating, and building. As they are first exposed to model texts of a certain genre, the learners learn to become acquainted with specific target texts. The students get the chance to examine the model texts under the instructor's direct supervision. The teacher assists the students in the development of an explicit awareness of language in the next phase. They are explicitly taught with specific linguistic patterns, such as crucial lexicon-grammatical elements and rhetorical patterns. In the end, writing students get the ability to create and edit original works in the learned genre.

2.2.2.3 Comparison of Process-Based and Genre-Base Instruction The various benefits and drawbacks of process-based and genre-based training have also been emphasized by Hyland. The writing process is transparent, which makes process-based instruction a clear advantage. As a result, instruction gives the teacher a step-by-step teaching methodology, and the students' writing is developed through the iterative stages of planning, drafting, and revising throughout the instruction. The transparency of writing conventions is one area where genre-based instruction has a clear advantage

over other approaches. Specifically, learners who receive this type of instruction are given explicit instructions on how to construct texts, including linguistic elements and rhetorical devices, with a focus on the reader and the writing task. As a result, this introduces students to the writing process as well as the significance of social situations.

Due to the assumption that the first and target languages are the same, process-based instruction appears to overlook some of the challenges faced by second language learners. As a result, some students whose language control is insufficiently effective or strong still struggle to effectively communicate their ideas, which negatively affects their writing. Writing may be difficult for certain students with poor L2 competence and grammatical skills, for example. Additionally, process-based training tends to place less focus on the creation of texts or writing results since it places its major emphasis on the cognitive process of writing or how to learn to write. Last but not least, the process approach presupposes that all writing processes are the same. However, Leki (2010) contends that since every learner has a unique writing style, their writing processes are distinct, inconsistent, and greatly varied from L1 to L2.

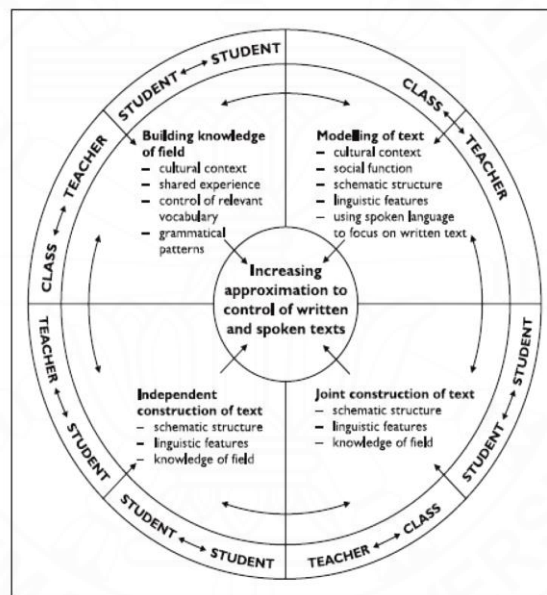
However, misunderstanding genre-based concepts or placing too much emphasis on the explicit teaching of linguistic features could result in the prescriptive teaching of grammar or traditional form-focused instruction; as a result, learners should be more concerned with comprehending the rhetorical patterns of the target texts rather than just the formal structure of the language. Additionally, genre-based training has a tendency to overemphasize the value of written output while largely ignoring the development of writing abilities. Because the genre-based approach concentrates on analyzing model texts in order to help learners create their own writing, it's possible that teachers and students will overlook the process of learning and writing development in favor of simply copying the target texts' generic structure and rhetorical patterns. As a consequence, such overemphasis may lead to "an uncritical reproduction of text" (Hyland, 2010), which impedes students' ability to learn and also limits their writing inventiveness.

2.2.2.4 Concept of Genre-Based Instruction (Australian or SFL Framework) As described earlier, there are three main genre-based orientations, each

of which serves different purposes of learning and instruction. The Australian instructional framework appeared to suit the research contexts of this study; therefore, this section on the genre-based instructional concept only concentrates on the work of Hammond, Burns, Joyce, Brosnan, and Gerot (1992), which was developed within SFL scholarship.

Figure 2.2

Teaching and Learning Cycle of Genre-based Instruction by Hammond et al. (1992, p. 17)



According to Figure 2.2 Hammond et al.'s genre-based framework includes four major teaching-learning steps, all of which can be freely switched in order to fulfill a particular context of teaching and learning. The content is summarized in the following.

1) Building knowledge of field – During the initial stage, the teaching process entails students acquiring knowledge about the genre's objective, target audience, and contextual factors. The instructor assumes the role of an instigator and mentor, teaching essential knowledge and linking it to prior encounters. They develop intellectually engaging activities and teaching resources to activate students' existing knowledge. The objective is to establish a connection between students' practical experiences and

theoretical principles, while equipping them with crucial linguistic resources such as vocabulary and grammatical structures.

2) Modeling of text – The teacher assumes the dual role of an instructor and monitor, offering explicit instruction and showcasing genre models as efficacious models for learning. They examine rhetorical patterns, the structure of language, and linguistic qualities, discussing how texts communicate precise meanings within an appropriate context. Engaging in class activities or participating in group discussions can assist learners in analyzing and comprehending target materials prior to formal instruction. By exposing students to the linguistic aspects, social norms, and communicative purposes of the example texts, this activity enables them to analyze language patterns and enhance their writing abilities both in terms of detail and overall quality.

3) Joint construction of text – During this phase of learning, students collaborate with their peers and instructors to create a target text. They utilize the knowledge gained from earlier stages to engage in practical activities. The instructor assigns writing tasks or activities to each group, providing support and technical guidance. The importance resides in the learners' capacity to actively participate in cooperative investigation and direct involvement with the specific style or form being studied.

4) Independent construction of text – Students engage in cooperative learning with both their peers and professors to collectively create written content. Afterwards, they are assigned individual writing assignments that focus on a particular genre. They actively pursue guidance, engage in collaboration, and utilize learning resources. The instructor fulfills the role of an observer, responder, and assessor by closely monitoring, reacting to, and assessing the development of the students. They engage in collaboration, solicit guidance, and utilize educational resources to augment their writing proficiency.

2.3 Argumentative Essays

Writing an argumentative essay is important in the academic world since it expresses the writer's opinions on the analysis. This only discusses the writers' claims

or their core convictions. Therefore, the argumentative text offers students a deliberate and well-structured opportunity to develop their ideas and communicate their opinions.

2.3.1 Definition of Argumentative Essays

A composition that "attempts to support a controversial point or defend a position on which there is a difference of opinion" is considered to be argumentative writing, one of the main categories of non-creative writing styles (Richards and Schmidt, 2002, p. 337). According to Hyland (1990), the objective of an argumentative essay is to persuade the reader that a key claim is true. According to Reid (1988), in argumentative writing, the writer takes a stand on a contentious topic, justifies and explains that stance, and uses examples to support that position in order to convince the reader to agree or disagree. The objectives of presenting an argument are to provide the reader with an opinion, to clarify, explain, and illustrate that position, to convince the reader that the opinion is true, and to convince the reader to take action (Reid, 1988). The current study adopted Hyland's (1990) definition of an argumentative writing, defining an argumentative writing as three paragraphs that include an introduction, a body, and a conclusion, in which the writer must choose a position, provide evidence to support that position, and persuade the audience to share that perspective on the contentious issue.

2.3.2 The Element of Structures of Argumentative Essays

Argumentative writing has been the subject of several conventional frameworks or organizational patterns suggested by academics. Toulmin (1958) offered the initial model for its analysis, consisting of six components: the claim, the supporting evidence, the warrant, the backing, the refutation, and the qualifiers. Toulmin's paradigm was explored in three studies: Connor (1990), McCann (1989), and Ferris (1994).

In addition to the Toulmin model discussed earlier, Hyland's (1990) framework has been widely adopted both as a guiding tool for students and as a standard for researchers analyzing argumentative writing. Hyland (1990) proposed a preliminary descriptive framework outlining the general structure of an argumentative essay. According to Hyland (1990), this framework consists of three main components: thesis, argument, and conclusion, which serve as organizing principles for the genre. Each

component follows a structured sequence of moves, with some steps being optional while others are mandatory. Table 2.1 provides a summary and visual representation detailing the components, their nomenclature, and the functional definitions of the structural units.

Table 2.1

Elements of the Structure of an Argumentative Essay (Hyland, 1990, p. 69)

Stage	Move
<p>1. Thesis. Introduces the proposition to be argued</p>	<p>(Gambit) Attention grabber - controversial statement - or dramatic illustration (Information) Presents background material for topic contextualization (Evaluation) Positive gloss - brief support of proposition (Marker) Introduces and/or identifies a list</p>
<p>2. Argument discusses grounds for thesis (Four move argument sequence can be repeated indefinitely)</p>	<p>Marker Signals the introduction of a claim and relates it to the text (Restatement) Rephrasing or repetition of proposition (Claim) States reason for acceptance of the proposition. Typically based on: a. Strength of perceived shared assumptions b. A generalization based on data or evidence c. Force of conviction</p>

	(Support) States the grounds which underpin the claim Typically: a. Explicating assumptions used to make a claim b. Providing data or citing reference
3. Conclusion Synthesizes discussion and affirms the validity of the thesis	(Marker) Signals conclusion boundary Consolidation Presents the significance of the argument stage to the proposition (affirmation) Restates proposition (Close) Widens context or perspective of proposition

Many academics, like Wijitsopon (2017), employed the model put forward by Hyland (1990) above, which is a general study of argumentative writing, to look at argumentative texts. However, as indicated in Table 2.2 below, Thai students used a different model and structure that were presented by the institution in the current research. The genre approach is still relevant to that framework. Because the thesis, argument, and conclusion can all be broken down into three sections, it can be said that although if this model employs a distinct vision and pattern, it belongs to the same genre.

The model that Thai students in the current research must adhere to inside their argumentative essays is a different model from that suggested by Kumar and Bunyakarte (2010). Table 2.2 below provides a description of the prerequisites. There had to be an introduction, a body, and a conclusion for these persuasive articles. They were given some instructions on how to convey the data in the argumentative paragraphs as a result of this. The typical formatting guidelines for argumentative essays for English IV students are as follows.

Table 2.2

Structure of Argumentative Essays from English IV (4th Edition) by Kumar and Bunyakarte (2010, p. 145)

Pattern 1	
	Introduction (with thesis statement)
	Supporting fact 1
	Supporting fact 2
	Supporting fact 3
Body	Supporting fact 4
	Opposing fact 1+ Refutation
	Opposing fact 2+ Refutation
	Conclusion (with re-worded thesis statement)
Pattern 2	
	Introduction (with thesis statement)
	Opposing fact 1+ Refutation
	Opposing fact 2+ Refutation
	Supporting fact 1
	Supporting fact 2
	Supporting fact 3
	Supporting fact 4
	Conclusion (with reworded thesis statement)

2.4 Concept of Flipped Classroom Instruction

2.4.1 Definitions of Flipped Classroom

A flipped classroom delivers education using open-access online resources outside of the typical lecture format that would normally be used within the classroom. Flipping learning entails switching up the way that material is distributed in terms of time, place, and location. As a result, tasks and homework that would often be assigned at home are performed in class.

The development of flipped language classes is a trend that is becoming increasingly popular. In this part, the researcher defines a flipped classroom, describes how the idea of flipping a class has changed over time, goes through the reasons why or why not educators flip their classrooms, and provides advice for those who would want to do so based on the literature.

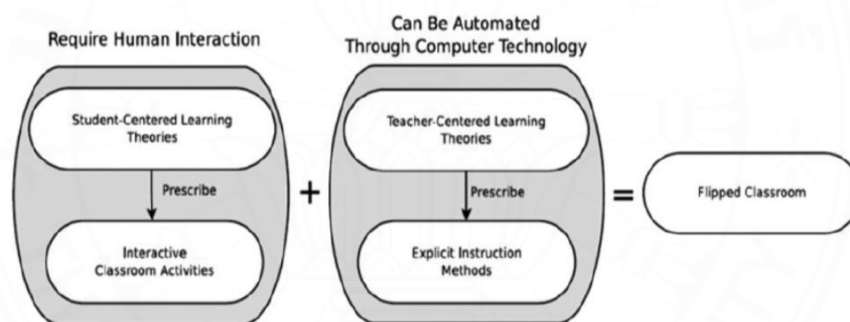
A flipped classroom is a concept where students study course content outside of class and practice with their instructor and classmates during class time. To put it another way, it is a learning environment where "what was previously accomplished in

class is now completed at home, and what was traditionally completed as homework is now completed in class" (Bergmann & Sams, 2012).

The flipped classroom, according to Bishop and Verleger (2013, p. 5), is characterized as an instructional technique with two components: interactive group learning activities inside the classroom and direct computer-based individual education outside the classroom. Therefore, it is crucial for schools to establish connections between classroom instruction and other elements of students' lives (Bransford, Brown, Cocking, 2000). Before studying how to implement FC pedagogy, Figure 2.3 illustrates the contrast between the traditional classroom and the FC.

Figure 2.3

Flipped Classroom Activities (adopted from Bishop and Verleger, 2013)



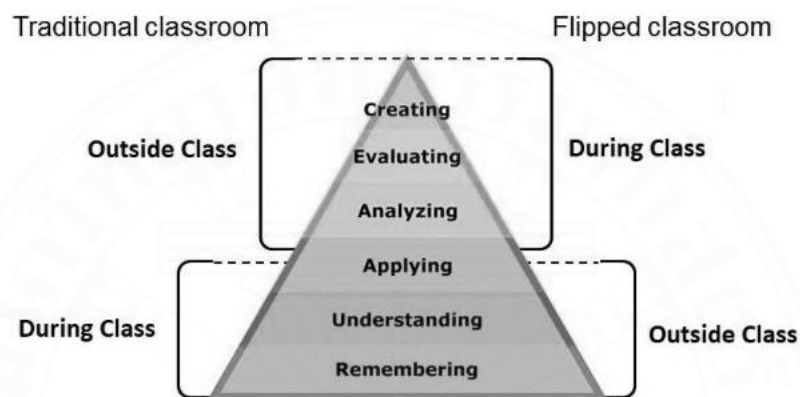
In addition, AlJaser (2017) defined the flipped classroom as an educational learning model that focuses on students and aims to replace traditional lectures with active cooperative tasks using the internet and computer technology to transmit a video lecture to be viewed at home; then, students discuss it through a variety of tasks and activities.

The highest level (creation) is practiced after the lower levels in flipped classes. The lower cognitive domains of remembering and comprehending are presented outside of the classroom through movies, texts, and other resources when the flipped paradigm is implemented. Thus, the higher cognitive levels of application, analysis, evaluation, and creation can be exercised in the classroom (Krathwohl & Anderson, 2010). On his blog, Bergman (2016) explains that the flipped classroom emphasizes the time spent under the guidance of the facilitator in the upper layers of the triangle. Figure 2.4

displays the level of student learning according to Bloom's updated taxonomy of the flipped classroom paradigm.

Figure 2.4

Bloom's Revised Taxonomy of a Flipped Classroom



The flipped classroom offers numerous benefits, including efficient and creative use of class time, active learning, motivation, better insight into student difficulties and learning styles, increased engagement, achievement, and interest, technology use, adaptability for 21st-century learning, and students taking responsibility for their own learning. The architecture of flipped classrooms is based on Bloom's updated cognitive domain taxonomy, which provides six major categories of cognitive processes: remembering, comprehension, analysis, evaluating, and creating. These processes involve students recollecting, analyzing, evaluating, and creating, transforming students from passive listeners to active learners, providing better insight into students' difficulties and learning styles, and fostering a more engaging and engaging learning environment.

The steps in implementing the flipped classroom strategy (Becker & Birdi, 2018; Bergmann & Sams, 2012; Davies et al., 2013) include: 1) the teacher provides students with online learning videos about the material to be learned and assigns students to observe the video and collect information related to the content of the video, 2) the students write questions related to the content of the video or other information

they have collected, 3) the students submit and discuss these questions in class, 4) the teacher clarifies answers and provides feedback for the students.

The FL approach gives instructing and learning exercises where students observe directions videos and studied learning substance beyond the classroom through distance learning and have direct classroom exercises in formal class. Online lessons enable students to work together during academic time that ought to be done on learning schedule. Therefore, making a learning model in FL is very meaningful because it is closely related to the learning environment of students (Mehring, 2016). This study adopts the three-phase type suggested by (D, Ingram, & Liu, 2015) to reverse the learning process, namely the pre-class stage (modeling, pre-assessment), in the classroom (explaining blueprint, overcoming problems) and the post-class stage (assessment, application, transfer). In this particular study, several adjustments were made to suit the objectives and classroom situation.

2.4.2 Benefits and Advantages of Using a Flipped Classroom

Fulton (2012) highlights the advantages of the flipped classroom, including students moving at their own pace, instructors better understanding learners' difficulties and learning styles, curriculum modification and updating, efficient and creative use of classroom time, increased learner interest, engagement, and achievement, and flexible technology use. The flipped classroom approach allows instructors to transfer traditional lectures to video, allowing learners to listen to lectures anywhere outside of class. This approach also increases cooperative learning in distance education, promoting a more flexible and effective learning environment.

Some studies have been conducted on flipped classrooms to measure its effects. For instance, Strayer (2007) studied the effects of the flipped classroom on the learning environment: a comparison of learning activity in a traditional classroom and a flip classroom that used an intelligent tutoring system. The findings of this research revealed that the students in the flipped classroom were less satisfied with how the structure of the classroom directed them to the learning tasks in the course. However, the findings of Marlowe (2012), who investigated the effect of the flipped classroom on student achievement and stress, indicated that the participants of the flipped classroom reported lower stress levels in this type of classroom situation compared to

other traditional class. While semester grades showed improvement, exam grades did not show significant improvement. Overall, students displayed positive feelings towards the treatment and enjoyed the associated benefits of being able to choose their own assignments and explore concepts they found interesting more in-depth.

Johnson and Jeremy (2012) examined the impact of the flipped classroom model on a secondary computer applications course: student and teacher perceptions, questions and student achievement. The outcomes indicated that no benefit to using the flipped classroom instruction in a secondary computer application. Robert (2014) investigated the flipped classroom model for college algebra: effects on student achievement. The findings of this research show that there was not a statistically significant difference in the scores of students in the two groups; however, students in the flipped sections did score slightly better than the students in the traditional sections.

Hashemifardnia et al. (2018) investigated the effect of implementing flipped classrooms on Iranian junior high school students' reading comprehension. To this end, 50 Iranian pre-intermediate students were chosen and randomly assigned into two equal groups; one experimental group (flipped classroom) and one control group (traditional classroom). After that, both groups were pretested through a reading comprehension test. Then, the researchers put the respondents of the experimental group in a flipped classroom. The flipped classroom was equipped with Internet, computer and projector. The students were required to read each text before coming the class and discuss it with their classmates. On the other hand, the control group was taught in the traditional classroom. Before teaching each text, the researchers provided background knowledge for the control group, and after teaching each text, the students were required to answer some questions related to the text. In the last session, the post-test of reading comprehension was administered. The findings revealed that the experimental group significantly outperformed the control group ($p < .05$) on the post-test.

2.5 Concept of Edpuzzle

2.5.1 Definition of Edpuzzle

Edpuzzle learning media is an online resource that enables the use of video clips into the instructional process. Teachers can use Edpuzzle to search for and utilize content from prominent education channels such as YouTube, Khan Academy, TED

Talks, National Geographic, and Vimeo. Teachers can upload films of their work and add video content to specific learning objectives that can be incorporated into their Learning Management System (LMS). Each video can be modified by trimming, embedding voice recordings, audio remarks, multiple-choice questions, entries, notes, comments, messages, and extra references. In addition, teachers can view students' learning activities while listening to and working on video assignments, as well as the time students spent completing assignments, the percentage of assignments completed, students' grades, and the outcome of assessment analysis, all in real time (Luki and Muhamaed (2021); Edpuzzle Make Any Video Your Lesson, n.d.).

According to Julinar and Yusuf's (2019) research, there are various reasons why Edpuzzle is so popular among students. In this study, students who are taught using Edpuzzle can study anywhere, repeat material at any time, and most importantly, they can receive initial information about the material to be studied in order to increase their confidence and motivation, sparking their curiosity and encouraging them to actively participate in brainstorming sessions. This demonstrates that Edpuzzle is able to engage students' prior knowledge, which is essential for the initial stage of knowledge building. Also, Yesyika's (2017) study on the efficacy of Edpuzzle in enhancing junior high school students' English writing skills demonstrates that Edpuzzle media is more effective than other conventional media.

2.5.2 Advantages of EdPuzzle Application

Edpuzzle is an educational programme that provides numerous benefits for enhancing the teaching and learning experience in the classroom. It improves distance-learning experiences by dividing films into shorter segments and enabling students to easily identify areas that require repetition. The application provides a means for students to assess their understanding of course contents by taking quizzes while watching the video, which also gives the instructor confidence that learning has taken place. This enables the instructor to adjust the next courses in order to guarantee the retention and comprehension of the material (Mischel, 2019).

In addition, Edpuzzle has the feature of including audio notes. This feature temporarily pauses the video while the instructor adds audio to enhance the lesson's concentration. The utilization of signaling, a strategy, has been discovered to enhance

the performance of learners on transfer tests when they have been exposed to classes incorporating signals.

Another benefit of Edpuzzle is the ability to share videos with others. Teachers have the ability to compile a collection of suitable films, quizzes, or audio instructions for various parts of a course, which helps to save time in preparation and ensures consistency across different portions. Additionally, this feature enables instructors to consolidate their quiz outcomes in order to analyze student learning across numerous classes. In general, Edpuzzle is a helpful tool for enhancing the teaching and learning process in the classroom.

2.5.3 Disadvantages of EdPuzzle Application

According to Mischel (2019), Edpuzzle is a menu-driven application that has some disadvantages in teaching the learning process in the classroom. It has a slight learning curve, with easy-to-follow instructions but taking some time to learn. Students may have questions that require extra time from the instructor. Edpuzzle does not allow live comments or interaction between students or the instructor on posted videos. Additionally, editing videos on Edpuzzle is limited, with no ability to cut and paste videos together to create a single resource.

Instructors must use their own video processing tools or separate the pieces into different videos. Cropping can only be done at the beginning and end of the video, not in the middle. Finally, Edpuzzle does not allow voiceover for just part of the video, but audio notes can be inserted throughout.

2.6 Related Studies

2.6.1 Related Studies on Writing Through Flipped Classroom Instruction and the Use of the Edpuzzle Application

Afrilyasanti et al. (2016) examined the influence of a flipped classroom approach on the writing proficiency of English as a Foreign Language (EFL) students in Indonesia. The study comprised a total of 62 students, divided into two distinct groups: the experimental group and the control group. The collection of quantitative data involved administering pre-test and post-test assessments, as well as observing students' writing. The results indicated a notable disparity in post-test scores between

the experimental and control groups. The use of the flipped classroom approach led to notable variations in the post-test scores across the different interaction groups. The objective of this study is to tackle the difficulties encountered in English as a Foreign Language (EFL) writing classes, including the constraints of time for instruction and variations in individual learning abilities.

According to Luki and Muhamaed (2021), students who used the Edpuzzle-assisted FC technique demonstrated greater writing proficiency than those who used the traditional teaching method. Additionally, after applying both a traditional teaching method and an Edpuzzle-assisted FC method, more students received a passing mark. Most students, nevertheless, found the FC classroom teaching method and the usage of Edpuzzle media to be enjoyable and favorable. Through their questionnaire, their pupils demonstrate a favorable attitude toward the flipped classroom teaching technique and the utilization of Edpuzzle learning resources.

According to Amaliah (2020), the use of Edpuzzle may help students' critical thinking abilities while reading narrative texts. The PISA methodology employed in the Edpuzzle implementation may be a useful tool for improving students' comprehension and critical-thinking abilities. Additionally, Edpuzzle may help students become more creative when generating material that introduces Indonesian tales to other languages.

Di Zou and Haoran Xie (2021) looked at how Edpuzzle technology improved just-in-time teaching and peer tutoring in a flipped English writing class. One of the learning models that is particularly helpful for language learning and should be utilized more often to support the growth of students' writing abilities, motivation, and critical thinking tendencies is the Edpuzzle application. The usage of Edpuzzle for interactive movies aids in fostering a culture of sharing and a wider range of learning opportunities.

Ghufron, M. A., & Nurdianingsih, F. (2021) investigated the efficacy of a flipped classroom approach combined with Computer-Aided Learning (CALL) in English as a Foreign Language (EFL) writing classes. The study employed a mixed-methods approach, which included a sample of 150 Indonesian university students who were learning English as a foreign language (EFL), as well as 14 EFL writing instructors from five different universities. The findings shown that implementing a flipped classroom approach with computer-assisted language learning (CALL) fosters learner autonomy, improves the effectiveness of teaching and learning methods, and

provides more time for English as a Foreign Language (EFL) writing and input activities. Nevertheless, it also possesses disadvantages. The study proposes that teachers should include online resources, such as credible films or their own videos, within the EFL writing course to augment the learning materials.

Güvenç (2018) found that the majority of the students reflected positive feelings towards the flipped classroom approach in writing lessons. However, the final survey results showed that they mostly rated this experience neutral. The study concludes that the flipped classroom approach can result in positive student attitudes and learning outcomes towards the process. It is a feasible and promising model in higher education since new pedagogical and practical applications are essential with the advent of new technologies.

Roohani and Rad (2022) investigated the efficacy of a hybrid-flipped classroom approach in enhancing the argumentative writing proficiency of English-as-a-Foreign Language (EFL) learners. A group of 50 English as a Foreign Language (EFL) learners was purposefully chosen and divided into control and experimental groups. Data was gathered via pretest and posttest argumentative essays as well as semi-structured interviews. The analysis of covariance (ANCOVA) revealed a significant improvement in learners' performance as a result of hybrid-flipped education. The thematic analysis uncovered several advantages of the hybrid-flipped approach, such as enhanced learner-teacher and learner-to-learner interaction, heightened learner accountability, convenient makeup options for missed classes, and instructor support. The results indicate that the hybrid-flipped approach is efficacious in instructing second language (L2) writing.

Soltanpour and Valizadeh (2018) concluded that flipped teaching is an innovative pedagogical method that involves reversing the traditional order of classroom lectures and assignments. This approach frequently incorporates instructional resources such as instructional films or PowerPoint files. This empirical investigation examined the impact of flipped instruction on the proficiency of Iranian English as a Foreign Language (EFL) learners in producing high-quality argumentative essays. A total of 55 students were allocated into two distinct groups: the flipped classroom (FC) and the traditional classroom (TC). Every group was given three therapy sessions. The FC group had superior performance compared to the TC group

in terms of essay quality. Over the course of time, the FC group maintained its superiority over the TC group. There was no noticeable alteration in the FC group over an extended period of time. The positive outcomes can be credited to the active participation of students in their learning process, which involves the use of methods such as video screen casting, collaborative writing, and in-class contact and negotiation between teachers and students. The flipped instruction method highlights the significance of utilizing in-class time with pupils, as it is contended to be the most efficient strategy.

Sukerti et al. (2020) aimed to evaluate the effectiveness and impact of implementing flipped learning in improving students' writing skills. The study comprised a group of 25 students in their fourth semester who were enrolled in higher vocational education, specifically focusing on Electrical Engineering. The study was conducted using the classroom action research methodology, based on a three-stage model developed by Estes et al. (2014). Prior to and during the implementation of flipped learning, quantitative data was gathered from the students' essays. The results revealed a robust correlation between the pre- and post-treatment of flipped learning. The study performed using SPSS statistics 21 at a 95% confidence level indicated that H1 was confirmed whereas H0 was rejected. This indicates that the introduction of flipped learning has a significant influence on improving students' writing performance. The study employed a classroom action research technique to investigate the several phases of the flipped classroom: pre-class, in-class, and post-class.

Widyaningrum et al. (2020) examined the influence of Edmodo applications on the creative thinking skills of students in the field of Indonesian Language and Literature. The experimental study was carried out on fourth-semester students enrolled in Class A and Class B of primary teacher education at Universitas PGRI Madiun, Indonesia. The study employed cluster random sampling and administered creative thinking ability tests to gather data. The instrument underwent validation through content validation, the Lilliefors model for assessing normality, the Chi Square formula for evaluating homogeneity, and t-tests for hypothesis testing. The findings indicate that the use of Edmodo applications has a substantial impact on improving students' creative thinking skills in the field of Indonesian Language and Literature Study.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the participants, research design, instruments used, data collection, and analysis for the study.

3.1 Participants

The study involved 201 Grade 12 Thai high school students enrolled in ENG30229 Developing English 1 at Samut Prakan School. The researcher utilized convenient sampling to select participants, resulting in a sample group of 30 students from a specific class. ENG30229 Developing English 1 was chosen due to its alignment with the study's objectives of exploring writing development and learning perceptions among high school students, considering both unit content and the learners' writing backgrounds.

During the course, students were tasked with learning and writing argumentative essays. Prior to the study, participants were informed about the conditions of research participation. Additionally, to assess the development of English writing proficiency through FC instructional methods, all participants completed a pre-test at the beginning of the semester.

3.2 Research Design

The research study was conducted to explore the students' writing development and learning attitudes about the FC instructional methods during a period of eight weeks.

Initially, 201 Grade 12 high school students enrolled in ENG30229 Developing English 1 were selected via convenient sampling from a specific classroom, comprising 30 participants. The selection aimed to encompass a range of writing skill levels representative of the study's focus. The researcher, acting as the sole instructor, assumed responsibility for teaching, data collection, and evaluation throughout the unit.

At the outset, students completed a pre-test to assess their writing abilities before receiving 2.5 hours of instructional time. Over a total of 15 classroom hours, the

instruction employed a flipped-classroom approach, complemented by four writing assignments. Towards the conclusion of the unit, students undertook a 2.5-hour post-test in the final week of instruction. Additionally, a questionnaire on learning attitudes was administered to all 30 students to gauge their perceptions of the learning experience. Data collected from the pretests and posttests, writing assignments, and attitude questionnaire were subsequently analyzed to derive the research findings.

This version maintains clarity and conciseness while ensuring the information flows logically from the selection of participants to the collection and analysis of data.

3.3 Data Collection

3.3.1 Writing Criteria

A scoring rubric of the unit was employed to evaluate all the students' writing in this study, including pre-/posttests, and writing assignments. The scoring rubric consisted of four main categories: claim (25%); reason (25%); rebuttal (25%) and organization (25%). The instructor was in charge of scoring the pre-/post-tests and writing assignments. In addition, in order to measure the reliability of the researcher's writing evaluation, two co-raters were requested to score all of the pretests and posttests and assignments of the students. If there was a significant gap between the researcher's and the co-rater's scores, the two raters had to reach an agreement and finalize their scoring. A mean score was used to compare significant differences between the researcher's and the co-raters' writing evaluation. After the investigation, it was revealed that there was no significant difference between the scores of the researcher and the co-rater.

3.3.2 Flipped Classroom Instruction

The sample group was taught with flipped classroom instruction based on writing lesson plans that were specifically designed to follow the learning-teaching cycle of genre by Hyland (2003). According to the four stages of the teaching cycle of genre, the online classroom through Edpuzzle was designed via the building knowledge stage and modeling stage. In addition, the researcher incorporated brief interactive sessions, known as short-break questions, to foster interaction between the instructor and students (Becker & Birdi, 2018; Bergmann & Sams, 2012). The classroom

activities were structured to include both collaborative and individual stages: joint construction for practicing argumentative writing skills, receiving feedback from the instructor, and independent construction for revising their writing.

Figure 3.1
Samples of Short-Break Questions

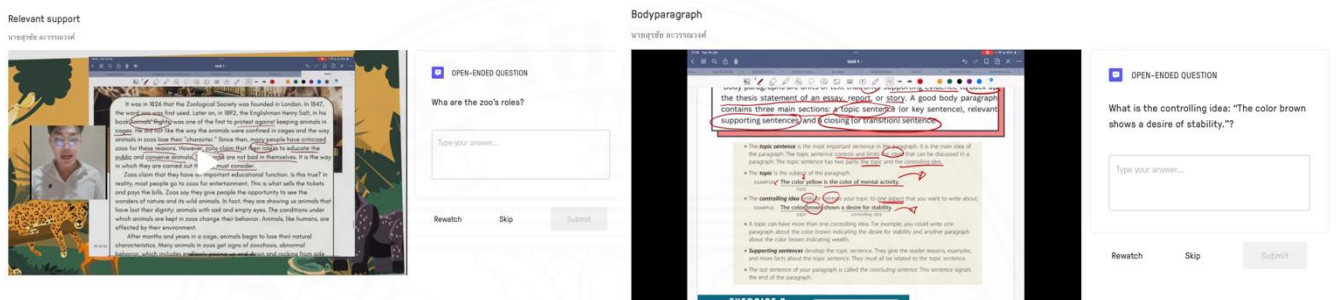
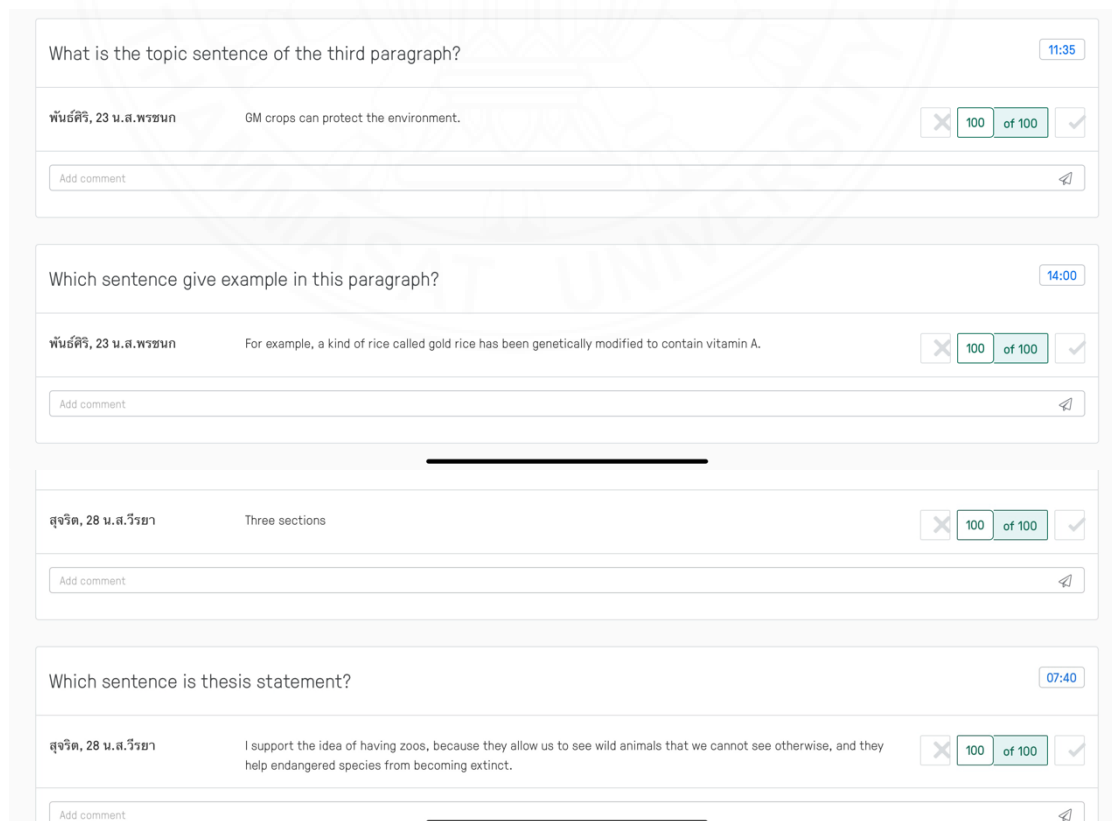


Figure 3.2
Samples of Students' Interaction on Edpuzzle



3.3.3 Instruments

3.3.3.1 Pretest and Posttests Pre- and post-tests were used to evaluate the students' writing performance both before and after implementing flipped classroom instruction. The participants were requested to take a pre-test before taking the unit and a post-test at the end of the unit. The pretests and posttests were designed to assess how the participants made significant progress, whereas the validity of the tests was approved by a writing expert. The pretest and posttest was be analyzed to explore any significant differences between the test results. The results of the pre-test and post-test would correspond to the investigation as follows:

- a) The pre-test scores identified the writing performance of the sample group before being taught with flipped classroom instruction.
- b) The post-test scores identified the writing performance of students after being taught with flipped classroom instruction.
- c) The differences between the pre-test and post-test scores of the participants identified the writing progress throughout the study.

3.3.3.2 Writing Assignments The four writing assignments given to learners during the instructional period corresponded to the four topics: education, technology, society, and environment. The students had to apply what they learnt in class to develop their own piece of writing, and the writing assignments were given during each of the eight lessons. The students were allowed to revise and edit their first draft after obtaining the teacher's feedback; therefore, they had at least two attempts to develop their writing assignments, including the first and final drafts. The results of the four writing assignments were analyzed to show the students' writing development throughout the study.

3.3.3.3 Questionnaire on Learning Attitudes In order to evaluate the students' perceptions of their teaching method at the end of the instruction, a questionnaire on learning attitudes was designed by the researcher, as it was intended to investigate three major aspects of the FC instruction: learning and writing development; instructional method, materials, and instructor; and learning satisfaction. As shown in Appendix, the questionnaire was written in both Thai and English, so the participants were able to

easily understand the questionnaire and fully express their opinions either in Thai or English as preferred. The questionnaire consisted of 17 rating scale questions in the first section and open-ended questions in the other section.

In the first section, a five-point rating scale (1 = least; 2 = little; 3 = middle; 4 = much; and 5 the most) was adopted to reveal the students' positive or negative feeling about the instruction. According to their different attitudes toward the instruction, 17 questions were addressed and divided into three categories: 1) learning and writing development; 2) instructional method, materials, and instructor; and 3) learning satisfaction. Cronbach's alpha was applied to evaluate the reliability of the questionnaire.

The second section consisted of five open-ended items that were related to learning satisfaction, instructional method, teaching materials, and the instructor. At the end, the attitudes of the students were statistically and qualitatively analyzed to show how the teaching methods affected their learning attitudes.

3.3.3.4 Pilot test In this pilot test, the researcher aimed to assess the accuracy of the writing rubric scores, questionnaires, and teaching videos using the Edpuzzle application. Fifteen Grade 12 students were selected as participants, although they were not part of the main sample group. The test results indicated that the writing rubric adapted from the Oregon Department of Education's Student Language Scoring Guide 2003-4 was suitable for scoring the argumentative essay. The questionnaires, available in both Thai and English languages, were found to be comprehensible and manageable for participants to complete independently. Feedback from some students suggested that three of the teaching videos were too lengthy, prompting the researcher to revise them to be shorter and more concise.

3.4 Data Analysis

The data analysis was conducted to deliver the results of the two research questions by two means: quantitative analysis (descriptive statistics) and qualitative analysis (thematic analysis).

The first research questions were investigated using a t-test, which compared the pre-test and post-test scores of the students in order to explore their writing development after receiving the treatment.

In addition, the t-test was applied to evaluate the development in all dimensions of pre-post- scores to demonstrate any significant developments in FC instruction.

To answer the second research question, a mixed-methods design was used to analyze the results from the questionnaire on learning attitudes.

First, the mean scores and standard deviations of the results for three parts of the rating scale questions (the first section) of the questionnaire on learning attitudes were analyzed with a mean score and standard deviation in order to figure out the students' attitudes.

Second, a thematic analysis was carried out in order to categorize and explain the results of the open-ended section (the second section) of the questionnaire.

Lastly, the qualitative results from the questionnaire on learning attitudes were obtained to compare and analyze the students' learning attitudes towards FC instruction in order to answer the second research question.

CHAPTER 4

RESULTS

This study investigated the efficacy of writing argumentative essays through flipped classroom instruction using the Edpuzzle application through an argumentative writing unit at the high school level. The results of the study illustrated Thai undergraduate students' writing development as well as their learning attitudes toward the instruction. This chapter reports and summarizes the finding research study, divided into two sections according to the research questions as follows.

- 1) To what extent can students develop their argumentative essay writing skills through flipped classroom instruction using the Edpuzzle application?
- 2) What are the attitudes of students towards flipped classroom instruction using the Edpuzzle application?

4.1 Results for Research Question 1

- 1) To what extent can students develop their argumentative essay writing skills through flipped classroom instruction using the Edpuzzle application?

The primary aim was to examine the impact of flipped classroom instruction, using the Edpuzzle application, on argumentative essay writing. This was achieved via the administration of pretest and posttest assessments. The average score and standard deviation on the pre and posttest were compared using paired sample t-test statistics. It was discovered that the average scores of the participants increased.

4.1.1 Pretests and Posttests

At first, the mean scores of the students' pretests and posttests were compared to demonstrate their learning progress.

Table 4.1*Mean and Standard Deviations of Students' Pre-Test and Post-Test Scores*

test	\bar{X}	S.D.	df	t	p
Pre-Test	7.53	2.80	29	14.39	0.00*
Post-Test	16.63	1.52			

Note. $p < .05$, $N = 30$

Table 4.1 shows that the average scores for pre-test argumentative essay writing were 7.53, with a standard deviation of 2.80. Concurrently, the average results after post testing were 16.63, with a standard deviation of 1.52. The post-test score shown increased significantly in comparison to the pre-test score in the absence of treatment, reaching a t-value of 14.39. ($p < .05$, $df = 29$)

Table 4.2*Paired T-Test*

Pretest – Posttest											
Claim			Reason			Rebuttal			Organization		
t-value	p-value	Gain	t-value	P-value	Gain	t-value	P-value	Gain	t-value	P-value	Gain
14.54	0.00	2.18	11.45	0.00	2.06	12.16	0.00	2.25	14.44	0.00	2.58

Note. Significant at the 0.05 level ($p < 0.05$)

Table 4.2 reveals significant findings in several dimensions. Specifically, in the claim dimension, there was a statistically significant increase in the average score, with a t-value of 14.54, indicating a gain of 2.18 points. The reason dimension also exhibited a notable difference between the pre-test and post-test, with a t-value of 11.45, signifying a 2.06-point improvement in scores. Similarly, the rebuttal dimension showed a significant increase, with a gain of 2.25 points and a t-value of 12.16. Furthermore, the organization dimension had a t-value of 14.44, indicating a

significant difference between pre-test and post-test scores, with a gain of 2.58 points. All dimensions showed a significant difference, with a p-value of 0.00.

Table 4.3

Mean Scores and Standard Deviations from Component Scoring

Rubric Scoring Dimensions	Pretest		Posttest	
	\bar{x}	S.D.	\bar{x}	S.D.
Claim	1.91	0.61	4.10	0.46
Reason	1.93	0.75	4.00	0.47
Rebuttal	1.78	0.79	4.04	0.43
Organization	1.90	0.88	4.48	0.46
Mean score	1.88	0.76	4.15	0.45

According to the data shown in table 4.3, the participants demonstrated improvement in their argumentative essay writing across all dimensions when comparing the pre-test and post-test results. Mean score of all dimensions in pretest was 1.88 and the average of S.D. was 0.76, while the post-test mean score was 4.15 and the average of S.D. was 0.45. The post-test mean score for the organization component was the highest, reaching 4.48. The rebuttal dimension had the lowest post-test score of 4.04, with a standard deviation (S.D.) of 0.43. This number was contrasted to the pre-test score of 1.78, which was also the lowest score among the four dimensions analyzed. In addition, while the reason dimension had the highest pre-test score of 1.93, its posttest obtained a score of 4.00 out of 5.

4.2 Results for Research Question 2

2) What are the attitudes of students towards flipped classroom instruction using the EdPuzzle application?

The students' evaluations of the flipped classroom instruction using the EdPuzzle application were assessed by their responses to a questionnaire about their learning attitudes. The results of this study investigation were analyzed by using

descriptive statistics obtained from the rating-scaled items in the questionnaire, along with doing a theme analysis on the open-ended questions in the questionnaire.

4.2.1 Rating-Scale Questions

Table 4.4

Attitudes toward Learning and Writing Development

Part1: Learning and Writing Development	\bar{x}	S.D.	Attitudes
1. You understood argumentative writing before taking this course.	2.56	0.80	Little
2. You understand argumentative writing after taking this course.	4.66	0.53	Much
3. You can explain about the components of argumentative writing	4.40	0.66	Much
4. You can write argumentative essays.	4.36	0.79	Much

According to Table 4.4, students' understanding of argumentative writing improved by 4.66 points, with a standard deviation of 0.53, after completing this course. Prior to taking the course, the average score for understanding argumentative writing was 2.56 with a standard deviation of 0.80. Furthermore, their average score for comprehension of argumentative writing, as measured in item 2, was significantly greater compared to the other components. Meanwhile, item 3 revealed a mean score of 4.40 for articulating the components of argumentative writing, with a standard deviation of 0.66. The item with the third highest mean score (4.36) was item 4, which measures the ability to compose an argumentative essay.

Furthermore, students demonstrated little understanding of argumentative writing prior to enrolling in this course (item 1) and exhibited the most unfavorable disposition towards the learning and writing development component. It is also evident that the students' attitudes towards the other three elements of their comprehension were as high, following their exposure to the FC instructional style. Thus, the students' learning perceptions in Part 1 were equivalent to those of Much.

Table 4.5*Attitudes toward the Instructional Method, Materials, and Instructor*

Part 2: Instructional Method, Materials, and Instructor	\bar{x}	S.D.	Attitudes
1. The FC method using Edpuzzle is suitable for learning argumentative writing.	4.33	0.64	Much
2. The FC method using Edpuzzle can help you learn argumentative writing.	4.40	0.84	Much
3. The handouts are suitable for learning argumentative writing.	4.70	0.58	Much
4. The instructor understands argumentative writing.	4.86	0.33	Much
5. The instructor can explain clearly and systematically about argumentative writing.	4.80	0.47	Much
6. The instructor allows you to practice and provides useful suggestions.	4.93	0.24	Much

Table 4.5 reveals that the highest average score for students' attitude in part 2 was observed in item 6, “*the instructor allowing you to practice as well as providing useful suggestions*”, with a mean score of 4.93 and a standard deviation of 0.24. The second highest mean score of 4.86 was found in item 4, which referred to “*the instructor understanding argumentative writing*”, with a standard deviation of 0.33. The third highest average score, with a mean of 3.25, was attributed to “*the instructor explaining clearly and systematically about argumentative writing*”. This was reflected in item 5, with a standard deviation of 0.47. Simultaneously, item 7, which referred to “*the FC method using Edpuzzle is suitable for learning argumentative writing*”, had the lowest mean score of 4.33 and a standard deviation of 0.64. Overall, the students' perceptions of the instructional method, materials, and instructor were consistently rated as "Much".

Table 4.6*Attitudes toward Learning Satisfaction*

Part 3: Attitudes toward Learning Satisfaction	\bar{x}	S.D.	Attitudes
1. You are satisfied with the FC method using Edpuzzle.	4.33	0.82	Much
2. You are satisfied with the instructor.	4.63	0.65	Much
3. You are satisfied with the classroom atmosphere.	4.60	0.75	Much
4. You are satisfied with the learning and teaching materials.	4.53	0.66	Much
5. You are confident in your argumentative writing ability.	4.13	0.88	Much
6. You have developed your ability in argumentative writing.	4.63	0.54	Much
7. Argumentative writing is useful for you.	4.63	0.60	Much

According to the data presented in Table 4.6, item 2 (*students' satisfaction with the instructor*), item 6 (*students' improvement of argumentative writing ability*), and item 7 (*the usefulness of argumentative writing*) had the highest mean scores of 4.63. The second highest score, 4.60, was seen in item 3, which measures *satisfaction with the classroom atmosphere*. The standard deviation (S.D.) for this score was 0.75. The third average score (4.53) was observed in item 4, which measures *satisfaction with the learning and teaching materials*. The standard deviation (S.D.) for this score was 0.66. Meanwhile, the lowest average score of 4.13 was seen for item 5, which pertains to *condensation in argumentative writing abilities*. In conclusion, the students' level of satisfaction with their learning in Part 3 was classified as "Much".

4.2.2 Open-Ended Questions

The results of the open-ended questions were analyzed and are discussed based on three main categories: instructional technique, teaching materials, and teacher. The students' perspectives, whether directly quoted or translated into English, are given and supported for each area.

4.2.2.1 Attitudes toward Flipped Classroom Instruction through Edpuzzle

The students expressed high levels of satisfaction with the flipped classroom instruction implemented using Edpuzzle. They claimed that the application was very convenient and offered students a wider range of study periods, which enhanced their learning experience.

“I think learning through this application can be re-watched any time I want.” ST2

“This application can be applied in learning because it makes our studying more conveniently.” ST5

“This application is easy to use for our studying.” ST7

“We can learn anywhere and get some feedback.” ST10

“This application allows us to review the lessons.” ST20

“I think this instruction is convenient. Students can study in anytime they need and send some answers to our teacher immediately. When we come in our class, we can understand more quickly.” ST29

Several students reported that the flipped classroom instruction using Edpuzzle was characterized by interactive engagement between teachers and students, with the ability for students to revise their responds based on teacher feedback.

“We can edit anywhere and anytime and get feedback when we make mistakes.” ST14

“I think this instruction is convenient. Students can study anytime they need and send some answers to our teacher immediately. When we come to our class, we can understand more quickly.” ST29

“This application is very stable, easy to use, saves time to get some feedback and edit new answers.” ST30

Last, some students mentioned this application was modern and enjoyable to learn the lessons.

“This application is good, modern, and fast to connect to the lesson” ST18

“It helps change the atmosphere in our class from the old teaching technique”
ST21

4.2.2.2 Attitudes toward Teaching Materials: Textbook The students agreed that the worksheets, used as the main teaching material in their class, were useful and appropriate for the learners since they emphasized that the worksheets were comprehensive, clear, and applicable to the instruction.

“The content in the textbook is appropriate for students and examples of essays can enhance my understanding.” ST4, ST21

“The textbook provided all details to learn and make it more efficient.” ST5

“The textbook was very useful and describes all the details thoroughly.” ST7

“The textbook contained appropriated content.” ST9, ST12

“The textbook provided all suitable details, good essay examples and many exercises.” ST17, ST18

“The textbook was well organized, presenting good practices relevant to each topic and included illustrative essay examples that enhanced students' understanding of essay elements.” ST30

Nevertheless, a few students provided recommendations for enhancing the material. The textbook should provide enough space for drafting essays and taking concise notes.

“The textbook was appropriate to study, but there were some pages that did not provide enough space to write drafts of essays.” ST2

“I think there was insufficient space to write” ST11

4.2.2.3 Attitudes toward the Instructor The students in the genre-based instruction also expressed favorable attitudes toward their instructor in many aspects. First, they complimented the instructor on his teaching skill and method and how he facilitated their learning.

“The teacher effectively delivered all course content.” ST2

“The teacher encouraged us to practice creativity and find solutions independently. When we made mistakes, the teacher promptly provided suggestions to improve our assignments.” ST4

“The teacher presented lessons concisely.” ST6:

“The teacher explained lessons clearly, provided valuable advice, and helped enhance our writing skills.” ST7

"The teacher explained lessons comprehensively, clarified areas of confusion, and corrected students' mistakes." ST16

"The teacher made the class enjoyable, demonstrated extensive knowledge, explained topics thoroughly, and provided compelling reasons." ST18

"The teacher taught effectively and shared numerous useful writing techniques." ST21

"The teacher taught succinctly, efficiently, and clearly explained how to revise our essays." ST30

Furthermore, they commented that the teacher encouraged the learners to create an enjoyable environment in the classroom. Additionally, the teacher made an effort to be amiable towards all students in order to establish a sense of familiarity.

"The teacher taught well and was friendly." ST1, ST8

"The teacher taught clearly and was friendly." ST3

"The teacher made the class fun, and I enjoyed learning with him." ST10

"The teacher took care of all the students and made the content easy to understand." ST12

Overall, the investigation of the open-ended questions provided more comprehensive and captivating perspectives on the learners who received flipped classroom instruction via the evaluation of three factors — FC instruction through Edpuzzle, teaching materials, and the instructor. Various attitudes of students towards FC instruction through Edpuzzle were observed, with the majority expressing favorable comments and a satisfactory learning experience. Consequently, it can be inferred that the majority of students who were exposed to the flipped classroom approach were likely to be content with their progress, learning resources, instructor, and instructional method. However, there was minimal negative feedback from students regarding the teaching materials. A comprehensive analysis of the students' learning attitudes will be conducted in the next chapter.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This last chapter discusses the overall results of the research study in terms of the writing development and learning attitudes of the learners, offers major implications for pedagogy, reveals the limitations of the study, suggests possibilities for future research, and finally leads to the conclusion of the study.

5.1 Discussion of the Results

According to the two research questions, this study has investigated the impact of writing instruction-flipped classroom through EdPuzzle on the writing development and learning attitudes of novice writing learners at the senior high school level. The discussion of the results will be focused on the two major issues accordingly.

5.1.1 EFL Writing Skills Development in Flipped Classroom Instruction Through EdPuzzle

In this study, one of the main purposes was to evaluate whether flipped classes affect high-school students' EFL writing skills development. The quantitative data were analyzed to figure out if students can develop English writing skills in flipped classrooms with EdPuzzle.

The results of this study, which utilized flipped classroom education via EdPuzzle to teach a unit on essay writing at the high-school level, offer proof of the efficacy of flipped-classroom writing training. This is evidenced by the significantly higher post-test scores in comparison to the pre-test scores. Mirzaei et al. (2022) and Shafiee Rad et al. (2021) have both stated that the flexibility offered by the flipped approach greatly enhances L2 learners' writing skills. This flexibility allows L2 learners to choose where they want to engage in their learning process. The statistical data unambiguously demonstrates a substantial improvement in the learners' performance following the adoption of the flipped classroom training (Afrilyasanti et al., 2016; Luki & Muhamaed, 2021; DiZou and Xie, 2021; Guvence, 2018, Roohani and Rad, 2022; Amaliah, 2020; Soltanpour & Valizadeh, 2018). The flipped classroom paradigm

facilitates extensive participation during the study process, primarily through the use of EdPuzzle. According to this application, the teacher offered students online instructional videos on the subject matter and assigns them to watch the videos and gather relevant information pertaining to the video's topic. Furthermore, the students composed inquiries pertaining to the subject matter of the film or any other data they have gathered and presented and deliberate over these questions during class. The teacher elucidates responses and offers comments to the students (Julinar and Yusuf's, 2019; Yesyika's, 2017; Becker & Birdi, 2018; Bergmann & Sams, 2012; Davies et al., 2013). This is further corroborated by the later qualitative data. In the flipped classroom, the learners were required to address writing issues or problems during tutoring sessions, guided by the teacher and through interaction with their peers (Fulton, 2012). The students employed diverse pieces of evidence in their writings, employed their reasoning skills to gain knowledge about the prescribed themes, and shown a superior comprehension of argumentative writing (Soltanpour and Valizadeh, 2018;).

5.1.2 Learning Attitude toward the Flipped-Classroom Instruction through EdPuzzle

The primary objective of this research was to examine the perspective of high-school students studying English as a foreign language towards flipped writing lessons. Initially, the analysis of the gathered data revealed that the majority of students had negative perceptions about flipped classrooms upon their first introduction to the concept (Sukerti et al. 2020; Marlowe, 2012). Certain individuals expressed disapproval towards the concept of flipping due to their extensive exposure to conventional classroom settings, as shown in Willis (2014)'s research. In addition, several individuals exhibited reluctance due to their perception that acquiring knowledge from the films would pose a greater level of difficulty.

The results of this research study showed that most of the student participants had a favorable inclination towards the flipped instructional design employed in the writing courses (PELLU, 2021; Soltanpour & Valizadeh, 2018; Ghufon & Nurdianingsih, 2021; Abedi et al., 2019). Flipped-classroom education proves to be efficacious in evoking favorable reactions from Thai high-school learners of English as a Foreign Language (EFL) in the domain of writing. The statistical and qualitative findings of this study clearly indicate the substantial impact of flipped-classroom

instruction on altering students' learning attitudes. The study revealed that the learners in the flipped classroom exhibited extremely positive and satisfying attitudes towards the flipped classroom approach across all three categories of learning attitudes. More precisely, their attitudes about the development of learning and writing received a score of 3.99 out of 5. Their attitudes towards the learning materials, teacher, and instructional approach received a score of 4.67 out of 5. Lastly, their attitudes towards learning pleasure received a score of 4.49 out of 5. The positive attitudes of the students in the flipped classroom, as demonstrated in this study, are consistent with previous research findings (Roohani and Rad, 2022). Furthermore, the analysis of the pretest and posttest demonstrated a significant change in the students' perceptions on their own learning and growth in writing (TUNA et al., 2017; PELLU, 2021). The qualitative analysis of the input provided by students in the flipped classroom demonstrated their positive and satisfied perspectives on the effectiveness of this educational approach (Luki and Muhamaed, 2021). The students acknowledged that they developed the ability to improve their writing skills through effective training, leading to decreased worries about their writing difficulties. The findings are also corroborated by previous research, such as the study conducted by Su Ping et al. (2019). EFL students following the implementation of a flipped writing program indicated that these students usually had favorable experiences with the flipped writing approach. They experienced enhanced pre-class preparation time, heightened engagement, increased interaction, instant feedback, and heightened drive, resulting in a notable display of self-assurance outside of the classroom (Afrilyasanti et al., 2016; PELLU, 2021; Abedi et al., 2019).

5.1.3 Attitudes toward the Learning Materials

A vast majority of the pupils said that the instructional resources they were using were not only highly comprehensible but also adequately thorough and very relevant. They argued that integrating writing models might enhance the learning process for students and enable them to effectively develop their writing talents. In addition, it was evident that the learners were excessively happy with the extensive array of genre models, which provided an authentic depiction of writing as well as a diverse assortment of writing examples. This facilitated their acquisition of a more comprehensive comprehension of genre.

5.1.4 Attitudes toward the Instructor

It has been shown that the function of the teacher may significantly impact positive and passionate reactions from learners. Initially, the students expressed admiration for the instructor's teaching tactics and thorough explanations, which facilitated their comprehensive comprehension of the lectures. The instructor's functions, as said, have a direct impact on the students' learning interest and may effectively stimulate their learning growth and progress. Moreover, it is important for the instructor to inform the learners about their available learning prospects, enable them to articulate their thoughts, and actively include them in the teaching to facilitate their enjoyment in exploring their learning identities inside the classroom. The pupils expressed their admiration for the teacher, stating that they really appreciated the priceless learning experience. Thus, the study demonstrated that the emotional components of learners may be directly ascribed to the influence of the teacher.

5.2 Pedagogical Implications

Primarily, the education for L2 writing should prioritize the students' writing process, production, and learning, together with the cultivation of ideas and structuring of discourse. In addition, rather than solely emphasizing the writing results of learners, L2 writing training should promote the complete enhancement of learners' writing competency, the exploration of their individual voices, and the acquisition of critical thinking abilities. It is advisable to focus on the evaluation criteria that directly reflect the effectiveness and important characteristics of a particular instructional technique when developing L2 writing training. Most Thai writing curricula traditionally assess the learners' proficiency based on their written output. Instructors' tendency to prioritize the finished output rather than providing support for learners to get practical writing experience and improve critical and writing abilities can hinder the adoption of novel teaching approaches in the ESL writing classroom.

During the preliminary stage of acquiring knowledge in a specific field before receiving direct instruction on the desired style in the online phase, instructors should provide learners who have limited understanding with relevant background information about the desired style through pre-learning activities in videos. Additionally, learners should be motivated to develop their thoughts in written form

through pre-writing activities, such as engaging in free writing, creating mind maps, and engaging in self-discussion (Zou and Xie, 2018). Once the target genre has been clearly explained, classroom activities can be created to encourage collaborative learning and thinking, as well as writing collaboration among learners. This provides them with the opportunity to develop their ideas and actively participate in classroom activities, with the instructor providing practical guidance (Kay & Dudley-Evans, 1998). Additionally, the instructor should promote and facilitate communication among learners, encouraging them to express their thoughts and ideas to both their peers and the instructor. This will serve to enhance the learners' interest in the subject matter and bolster their confidence in writing. Through this method, the instructor can assist students in enhancing their ability to learn independently and fostering their skills in critical thinking and creativity.

Furthermore, teachers should ensure that the video-related assignments they assign to students adequately prepare them for in-class activities. This is because students in flipped classes must establish correlations between the videos, video-related assignments, and in-class exercises in order to develop new knowledge and abilities. In addition, the students involved in this study discovered that the feedback provided by the teacher for the video-related activities was beneficial for enhancing their writing abilities. Furthermore, this feedback may be transformed into an interactive activity where students engage in discussions about the typical errors found in their written work. Awada and Diab (2021) conducted a study that examined the efficacy of using technology to enhance the development of second language (L2) argumentative writing skills.

Shafiee Rad et al.'s (2021) work provides further evidence that using flipped models effectively enhances active learning in the L2 writing process. Regarding the reversed methods, this study demonstrated that the flipped classroom presented novel difficulties for teachers while simultaneously freeing up class time (Enfield, 2013). In order to implement the flipped classroom model, curriculum developers and teachers should carefully design both out-of-class activities, such as videos and related tasks, as well as in-class activities, referred to as "intentional content". It is crucial that the content is tailored to meet the needs of all students, making it differentiated, relevant, and accessible to everyone (Flipped Learning Network, 2014). Prior to designing new

learning activities, it is strongly advised to establish a collaborative group consisting of teachers, curriculum creators, experts, and students. Furthermore, it is crucial to ensure that students do not experience boredom while participating in flipped classes. This can be achieved by employing various techniques, including limiting video duration to a maximum of 8-10 minutes, incorporating captivating visuals, metaphors, and examples, and featuring the teacher prominently in the videos (Mischel, 2018; Hidayat and Praseno, 2021).

5.3 Limitations of the Study

1) The researcher served as the sole course instructor throughout the whole instructional period, assuming responsibility for devising the curriculum, delivering instruction to students, overseeing the research environment, and evaluating all study outcomes. It is conceivable that several pupils may have avoided from articulating their unfavorable views or candid opinions regarding the teaching due to their awareness that the feedback would be delivered to the instructor.

2) The researcher employed the convenience sampling method to selectively choose participants who were enrolled in a mathematics-science program. However, this approach limits the generalizability of the results. It is also essential to acknowledge that the data may not fully represent the whole population of grade 12 students.

3) The researcher independently created all videos for use outside the classroom using the Edpuzzle application. Producing these videos required a significant investment of time and effort. Additionally, the researcher meticulously edited each video and included concise, periodic questions to enhance engagement between the instructor and students. Consequently, considerable time was dedicated to organizing all instructional materials.

5.4 Recommendations for Future Study

1) This study was conducted as action research by an internal researcher (myself), who is an English language teacher. The objective was to investigate the impact of a flipped EFL writing class on high school students' perceptions and skill development in the mathematics-science program. Future studies are recommended to

explore other academic programs for broader generalizability across the student population.

2) This study utilized teacher-generated videos, which required significant time and effort for production. Therefore, it is suggested that future research consider employing videos specifically designed for institutional purposes by a consortium of educators to enhance the effectiveness of the flipped classroom approach. Such initiatives not only optimize instructor time and effort but also cultivate a professional work environment characterized by enhanced cooperation and collaboration among educators. Furthermore, research utilizing institutionally designed videos could provide insights into standardizing content delivery across all school courses. Additionally, textbook authors could incorporate preloaded video-based materials for flipped classrooms.

3) Future research could benefit from larger-scale studies involving a broader sample size and diverse learners over an extended duration. This expansion is crucial as the current study was limited to 30 students participating in writing sessions over an eight-week period. Future studies might encompass a wider array of writing genres, such as exposition or discussion, with appropriate assessment criteria tailored to measure the effectiveness of instruction or genre-specific characteristics accurately.

5.5 Conclusion

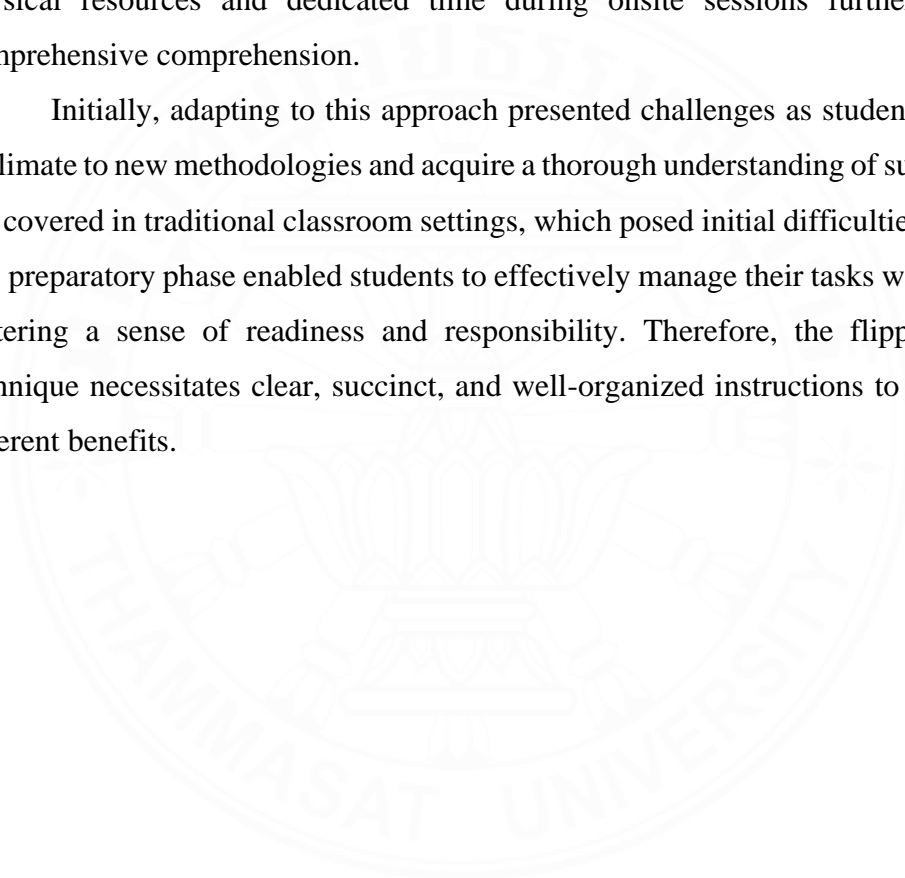
Flipped classroom instruction through Edpuzzle is a potentially effective and practical technology that may improve students' learning experiences by reversing the traditional structure of a classroom. To summarize, the flipped classroom model involves reversing the typical arrangement of a classroom. Furthermore, it can aid educators in enhancing their own consciousness within the classroom, encompassing comprehension of effective and ineffective strategies, the underlying rationales behind these outcomes, and the identification of available alternatives for their specific teaching methodologies.

Students participating in the flipped teaching technique demonstrated improved abilities in effectively articulating their viewpoints through well-supported claims, producing higher-quality content, and organizing their thoughts more cohesively in writing. Consequently, their average scores on the writing scale—measuring claim,

support, refutation, and organization—showed significant improvement in the posttest. Specifically, participants in the flipped classroom approach reported a more favorable and comprehensive learning experience, particularly in composing argumentative essays.

The implementation of flipped learning sessions enabled students to enhance their skills in planning, goal-setting, and activating their task-related knowledge effectively. They also gained a deeper understanding of the subject matter. Access to physical resources and dedicated time during onsite sessions further facilitated comprehensive comprehension.

Initially, adapting to this approach presented challenges as students needed to acclimate to new methodologies and acquire a thorough understanding of subject matter not covered in traditional classroom settings, which posed initial difficulties. However, this preparatory phase enabled students to effectively manage their tasks while in class, fostering a sense of readiness and responsibility. Therefore, the flipped learning technique necessitates clear, succinct, and well-organized instructions to optimize its inherent benefits.



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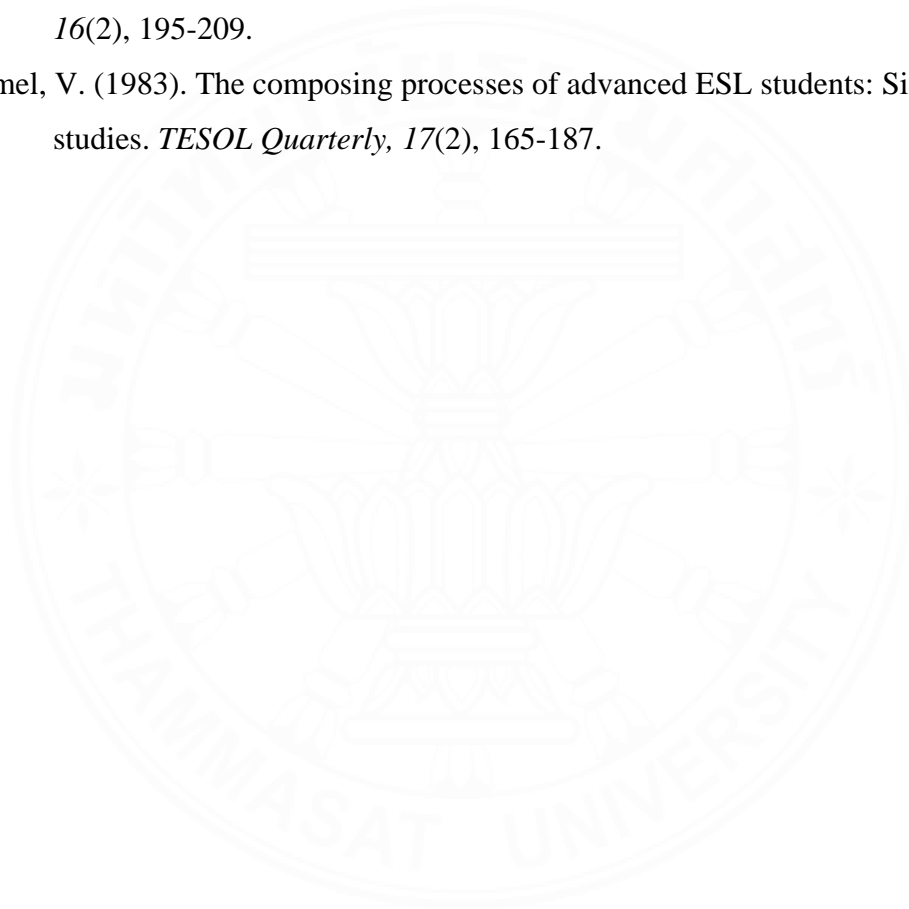
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APPENDICES

APPENDIX A
ANALYTIC RUBRIC FOR SCORING STUDENT
ARGUMENTATIVE WRITING

(Adapted from Oregon Dept. of Education's Student Language Scoring Guide 2003-4)

CLAIM	5	The introduction orients the reader sufficiently and effectively to the topic and to the author's thesis.
	4	The introduction addresses the topic clearly but may not be as effective as a rated paper in this category.
	3	The introduction addresses the topic clearly. Its parts are developed and organized in a way that orients the reader adequately to the topic and to the author's thesis, though some parts of the paragraph could have been better developed or elaborated.
	2	The introduction may be brief or inadequately developed and not orient the reader sufficiently to the topic and to the author's thesis, rendering the proposed solution somewhat practical and the problem somewhat real. Topic should be more focused with respect to audience and purpose. Some elements in the paragraph are underdeveloped.
	1	The introduction is brief and less than adequate and does not orient the reader sufficiently to the topic and to the author's thesis, making the feasibility of the proposed solution highly questionable or raising only superficial argument. Problem may not exist at all. Topic lacks clarity and focus and some elements are missing or undeveloped.
	0	The introduction lacks clarity and focus and does not orient the reader to the topic and to the arguable thesis.
REASON	5	Supporting points and details are exceptionally well chosen and appropriate to audience and purpose and in amount and variety. Details are clearly and insightfully developed and organized providing the strongest possible justification for the claim. Where appropriate, use of resources provides strong, accurate, and credible support to the claim. Sources are well integrated and documented.
	4	Supporting points are strong, relevant, and important. Developmental details are well chosen, developed, and appropriate in amount and variety though may not be as effective as a 5-rated paper in this category. When needed, use of resources provides strong, accurate, and credible support to the claim. Sources are generally well integrated and documented.

	<p>3</p> <p>2</p> <p>1</p> <p>0</p>	<p>Support is relevant, important, and appropriate in amount and variety though some of which, relative to other reasons, may be less compelling or not strongly related to the claim. Some supporting details could have been better developed or made clearer. Documentation is used properly most of the time when appropriate.</p> <p>Support is relevant but some points may be weak, or unimportant.</p> <p>Developmental details may occasionally be descriptive, less than adequate, or not be varied enough. Some selected details are perhaps not consistently well chosen for audience and purpose, and may not be based on reliable sources. Documentation is sometimes used to cite sources of information.</p> <p>Support is attempted but developmental details are often limited in variety and amount, uneven, predictable, irrelevant, or unimportant. Most details may not be well grounded in credible resources; they may be based on biased or uninformed generalizations, or questionable sources of information. Documentation is frequently neglected or not used properly when appropriate.</p> <p>All the reasons stated are overly broad or simplistic, predictable, irrelevant or not grounded in credible resources.</p>
<p>REBUTTAL TO ARGUMENT COUNTER</p>	<p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>0</p>	<p>Important counter-arguments are acknowledged and responded adequately and effectively.</p> <p>Important counter-arguments are generally well acknowledged and responded.</p> <p>Some important counter-arguments are stated and refuted adequately.</p> <p>Somewhat important counter-arguments are stated but may not be refuted adequately.</p> <p>Some relatively unimportant counter-arguments are stated but may not be refuted adequately.</p> <p>No possible counter-argument is identified.</p>
<p>ORGANIZATION</p>	<p>5</p> <p>4</p>	<p>Essay contains the strong control of organization, uses a variety of cohesive devices effectively, and exhibits a smooth progression of ideas.</p> <p>Essay contains a recognizable organizational pattern, uses a range of cohesive devices appropriately although there may be some under-/over-use, and well organized with a clear beginning, middle, and ending.</p>

- 3** Essay contains a discernible organization, though often simple and obvious, cohesive devices are usually used to convey relationships among ideas, and well organized with beginning, middle, and ending, but one of those parts needs to be strengthened.
- 2** Essay contains emerging ability to organize ideas in paragraphs with topic sentences, and some cohesive devices are inadequate, inaccurate, or over-used. ▪one part (beginning, middle, or ending) of the writing is weak.
- 1** Essay contains limited ability to express ideas clearly in an organized pattern, uses a limited range of cohesive devices, and those used may not indicate a logical relationship between ideas. There are the beginning, middle, and ending all run together.
- 0** The organization pattern is unclear and confusing and has very little control of cohesive devices and organizational features.



APPENDIX B

QUESTIONNAIRE ON LEARNING ATTITUDES

จงใส่เครื่องหมาย / ในช่องที่ตรงกับความคิดของนักเรียนมากที่สุด

Please check / in the most appropriate choice of your opinions.

	1 น้อย ที่สุด Least	2 น้อย Little	3 ปาน กลาง Middle	4 มาก Much	5 มาก ที่สุด Most
ความรู้ความเข้าใจในการเรียนและการเขียน Learning and Writing Development					
1. นักเรียนมีความรู้ความเข้าใจเกี่ยวกับการเขียนโต้แย้งก่อนเรียน 1. You understand argumentative writing before taking this course.					
2. นักเรียนมีความรู้ความเข้าใจเกี่ยวกับการเขียนโต้แย้งหลังเรียน 2. You understand argumentative writing after taking this course.					
3. นักเรียนสามารถอธิบายองค์ประกอบสำคัญของการเขียนโต้แย้งได้ 3. You can explain about the components of argumentative writing					
4. นักเรียนสามารถเขียนโต้แย้งได้ 4 You can write argumentative essays.					
วิธีการสอนและผู้สอน Instructional Method, Materials and Instructor					
1. วิธีการสอนแบบห้องเรียนสลับด้านโดยใช้เอดพัซเซิลมีความเหมาะสมกับการเรียนการเขียนโต้แย้ง 1. The FC method by using Edpuzzle is suitable for learning argumentative writing.					
2. วิธีการสอนแบบห้องเรียนสลับด้านโดยใช้เอดพัซเซิลสามารถช่วยให้นักเรียนเรียนรู้การเขียนโต้แย้งได้ 2. The FC method by using Edpuzzle can help you learn argumentative writing.					
3. เอกสารประกอบการเรียนมีความเหมาะสมกับการเรียนการเขียนโต้แย้ง 3. The handout is suitable for learning argumentative writing.					
4. ผู้สอนมีความเข้าใจการเขียนโต้แย้ง 4. The instructor understand argumentative writing.					
5. ผู้สอนสามารถถ่ายทอดอธิบายรายละเอียดต่างๆ ได้ชัดเจนเป็นระบบ 5. The instructor can explain clearly and systematically about argumentative writing.					
6. ผู้สอนให้นักเรียนฝึกปฏิบัติรวมทั้งให้คำแนะนำที่เป็นประโยชน์ 6. The instructor allow you to practice as well as providing useful suggestions.					

<p>ความพึงพอใจที่ได้รับจากการเรียน</p> <p>Learning Satisfaction and Overall Attitudes</p>					
<p>1. นักเรียนมีความพึงพอใจต่อวิธีการสอนแบบห้องเรียนสลับด้าน โดยใช้เอ็ดพัซเซิล</p> <p>1. You are satisfied with The FC method by using Edpuzzle.</p>					
<p>2. นักเรียนมีความพึงพอใจต่อผู้สอน</p> <p>2. You are satisfied with the instructor.</p>					
<p>3. นักเรียนมีความพึงพอใจต่อบรรยากาศในห้องเรียน</p> <p>3. You are satisfied with the classroom atmosphere.</p>					
<p>4. นักเรียนมีความพึงพอใจต่อเอกสารประกอบการเรียน</p> <p>4. You are satisfied with the learning and teaching materials.</p>					
<p>5. นักเรียนมีความมั่นใจในการเขียนโต้แย้ง</p> <p>5. You are confident in your argumentative writing ability.</p>					
<p>6. นักเรียนมีพัฒนาการในการเขียนโต้แย้ง</p> <p>6. You have developed your ability of argumentative writing.</p>					
<p>7. การเขียนโต้แย้งเป็นประโยชน์ต่อนักเรียน</p> <p>7. The argumentative writing is useful for you.</p>					

APPENDIX C

PRE-POST TEST AND WRITING ASSIGNMENTS

Pre-test (20 points)

Direction: Write a well-organized with following topic: What do you think security or privacy is more necessary to your daily life?

Post test (20 points)

Direction: Write a well-organized argumentative essay with following topic: Should schools ban the use of technology like ChatGPT?

WRITING ASSIGNMENTS**Assignment 1: Education (20 points)**

Write a well-organized argumentative essay about educational issue: Should schools ban cell phones and other electronic devices?

Assignment 2: Technology (20 points)

Write a well-organized argumentative essay about technological issue: Should we move on to more organic foods than GMO foods?

Assignment 3: Society (20 points)

Write a well-organized argumentative essay about social issue: Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with?

Assignment 4: Environment (20 points)

Write a well-organized argumentative essay about environmental issue: Do you think zoos are necessary to our society?

APPENDIX D

LESSON PLANS

Lesson Plan #1

Course: Developing English 1
Time: 2 Hours 30 minutes
Unit 1: Argumentative Essay
Classroom: 6/1

Teacher: Mr. Kitthanate Lawanwon

Lesson 1: Pre-test
 30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking
Level: CEFR B1
Materials: a pre-test of argumentative essay
Language Focus: Writing a pre-test of argumentative essay

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review sentence structure writing.

Terminal lesson objective:

- Students can write an argumentative essay.

Enabling objective

- Students do the Pre-test assessment before Teacher introduces the Essay organization.

Assignment:

- A Pre-test of Argumentative essay writing

Procedures in class:

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Teacher may ask Students about what they did during the weekend to ice breaking Students and to get Students to participate in sharing and discussing.

2. Present (40 minutes)

- Teacher explains about overview of the course such as objectives, assignments, and criteria.
- Teacher introduces Students about the activity that they will do today.
- Teacher informs Students that they will be asked to do the pre-test about Argumentative Essay and there is no worry for Students just try their best and there won't calculate for the score. Teacher just wants to know how much Students know about Essay writing before starting teaching.

3. Pre-test Writing (1 hours and 30 minutes)

- Students will be asked to split their seats.
- Students take 1.30 hours to do the pre-test assessment.
- Teacher explains the instruction to Students and clarify if there are any questions about the test.

Lesson Plan #2

Course: Developing English I

Teacher: Mr. Kitthanate Lawanwong

Time: 2 Hours 30 minutes

Online Video: 10 minutes

Unit 1: Argumentative Essay

Lesson 2: Writing Introductory Paragraph

Classroom: 6/1

30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: Writing Handout, and Power Point Presentation Slide

Language Focus:

- Writing an introductory paragraph of argumentative essay
- Identifying introductory paragraph- general and thesis statement

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review sentence structure writing.

Terminal lesson objective:

- Students can write an introductory paragraph for argumentative essay.

Enabling objectives

- (Online) Students explore the content about argumentative meaning, pattern and model - Introductory paragraph and thesis statement.
- (Onsite) Students write hooking sentences, general statements, and thesis statement in introductory paragraph for argumentative essay.

Assignment:

- A final draft of introductory paragraph about Should schools ban cell phones and other electronic devices?.

Evaluation:

- Students complete an introductory paragraph evaluated by the writing rubric correctly more than 60%.

Procedures Online:

1. Present (10 minutes)

- Teacher presents the whole ideas of argumentative essay.
 - Why is the argumentative essay important?
 - How to divide parts of argumentative essay.
- Teacher shows the example of argumentative essay and identifies how each paragraph is important.
- Teacher explains in detail about the first paragraph of essay- introductory paragraph- and show statements that can appear in this paragraph: hooking sentences, general statements, and thesis statement.
- Teacher explains how to write general statements on page 3.

- Teacher explains how to write thesis statement that it explains an opinion, an idea, or a belief. The thesis statement should be something that you can argue about. It should not be a plain fact.

2. Practice

- Teacher assigns exercise 1 and 2 as online quizzes in order to check how Ss understand with this lesson on page 4-5.

3. Produce

- Students create the thesis statement about given topic: Should schools ban cell phones and other electronic devices?. Why, or why not? (Write as a sentence in online quiz)

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Ss to welcome them and make Students feel relax before starting the class.
- Teacher may ask Ss about how they feel about doing pre-test assessment on previous class and may discuss about what Students would like to share regarding the assessment.

2. Present (40 minutes)

- Teacher will ask students some questions to review about pattern of essay and introductory paragraph such as " who can tell about the meaning of argumentative", "what is argumentative essay?", " how argumentative different from the other essay?", and " Should schools ban cell phones and other electronic devices?"
- After Students share and discuss about the thesis statement; Teacher displays both good and not so good examples of thesis statement collected from students in EDpuzzel.
- Teacher feedback some of the thesis statement collected from Students to the whole class.
- Teacher assigns Students to work as a group (3 Students /group) to write the introductory about "Should schools ban cell phones and other electronic devices?" using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you're going to plan your writing.
- Students will write an introductory paragraph about "Should schools ban cell phones and other electronic devices?" in Writing Practice 1 on page 6.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let's review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students can sit next to people in their group to discuss and work together in order to collaborate writing the introductory about given topic.
- Students write a first of introductory paragraph draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

- After Students finished writing introductory essay, Teacher then displays. After Ss finished writing introductory essay, Teacher then display their works on the screen and feedback each group with peer-review.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Students consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.

Lesson Plan #3

Course: Developing English I

Teacher: Mr. Kitthanate Lawanwong

Time: 2 Hours 30 minutes

Online Video: 10 minutes

Unit 1: Argumentative Essay

Lesson 3: Writing Body Paragraphs

Classroom: 6/1

30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: Writing Handout, and Power Point Presentation Slide

Language Focus:

- Writing body paragraphs of argumentative essay

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review sentence structure writing.
- Students should review how to write thesis statements.
- Students can utilize thesis statement to help them write body paragraphs.

Terminal lesson objective:

- Students can write body paragraphs for argumentative essay.

Enabling objectives

- (Online) Students explore the content about argumentative meaning, pattern and model - Body paragraph- topic and supporting sentences.
- (Onsite) Students write topic sentence and supporting sentences in body paragraphs for argumentative essay.

Assignment:

- A final draft of body paragraph about “Should schools ban cell phones and other electronic devices?”.

Evaluation:

- Students complete body paragraphs evaluated by the writing rubric correctly more than 60%.

Procedures Online (10 minutes):

1. Present

- Teacher explains in detail about the second and third paragraph of essay- body paragraph on page 7.
- Teacher explains how to write topic sentence and supporting sentences on page 7.

2. Practice

- Teacher assigns exercise 3 and 4 as online quizzes in order to check how Students understand with this lesson on page 7-8.

3. Produce

- Students create TWO topic sentences about given topic: Should schools ban cell phones and other electronic devices? Why, or why not? (Write as a sentence in online quiz) based on Your last thesis statement.

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Students recap about what they have learnt in the previous class so Teacher can assess what Students remember from the prior lesson and to get them ready for the next lesson.

2. Present (40 minutes)

- Teacher asks Students about the online class, " what they can remember in online video", " Can anyone remember the meaning of argumentative essay?", "what is the good body paragraphs writing looks like?"
- Teacher encourages Students to participate to answers so that Teacher can check whether Teacher need to talk about these topics again or moving to the next topic. (It is very important that Students at least understand the function of the argumentative writing and its pattern before they move on to argumentative order and so on.)
- After Students share and discuss about the body paragraph; Teacher displays both good and not so good examples of body paragraphs collected from Students in Edpuzzle.
- Teacher feedback some of the body paragraphs collected from Students to the whole class.
- Teacher needs to make sure that Students understand and be able to identify the good examples of the body paragraphs.
- Teacher assigns Students to work as a group (3 Students /group) to write the body paragraphs about "Should schools ban cell phones and other electronic devices?" using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you're going to plan your writing.
- Students will write body paragraphs with at least 150 words about "Should schools ban cell phones and other electronic devices?" on page 10 in Writing Practice 2 based on your thesis statement in Writing Practice 1.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let's review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students can sit next to people in their group to discuss and work together in order to collaborate writing the introductory about given topic.
- Students write a first of body paragraphs draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

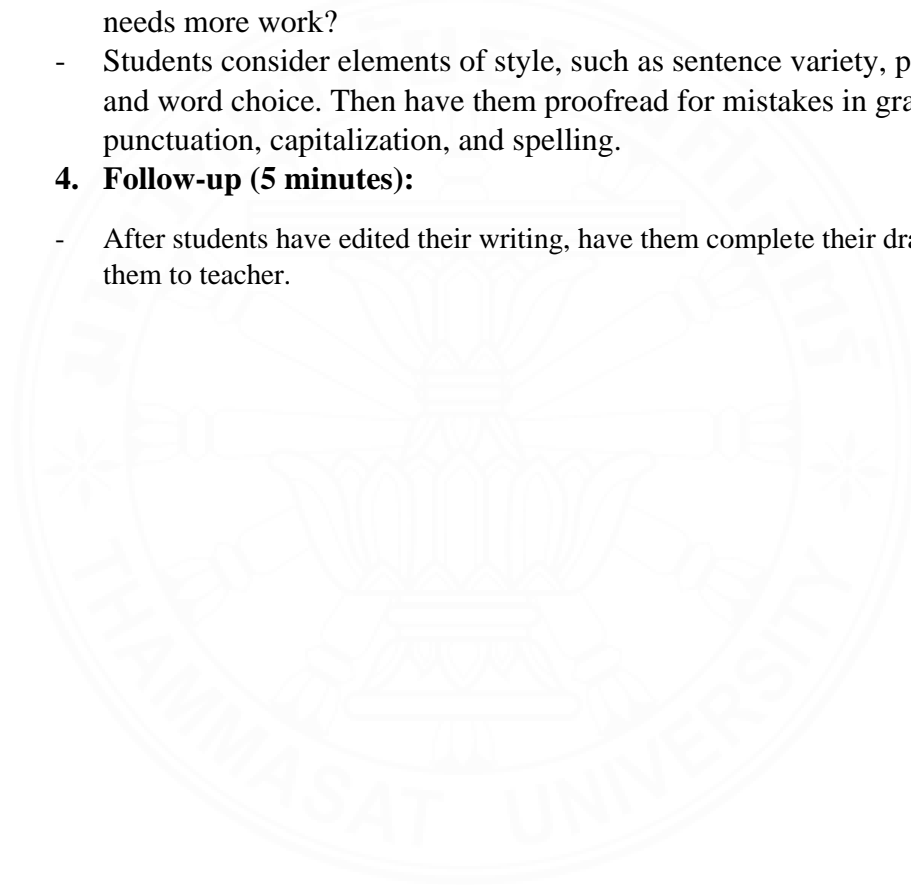
- After Students finished writing body paragraphs, Teacher then displays. After Students finished writing body paragraphs, Teacher then displays their works on the screen and feedback each group with peer-review.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Students consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.



Lesson Plan #4

Course: Developing English I

Teacher: Mr. Kitthanate Lawanwong

Time: 2 Hours 30 minutes

Online Video: 10 minutes

Unit 1: Argumentative Essay

Lesson 4: Writing Conclusion Paragraph

Classroom: 6/1

30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: Writing Handout, and Power Point Presentation Slide

Language Focus:

- Writing conclusion paragraph of argumentative essay
- Transition words

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review sentence structure writing.
- Students can utilize thesis statement and topic sentence to help them write conclusion paragraph.

Terminal lesson objective:

- Students can write conclusion paragraph for argumentative essay.

Enabling objective

- (Online) Students explore the content about argumentative meaning, pattern and model - conclusion paragraph- restatement sentences and opinion sentences.
- (Online) Students are able to use transition words to connect their paragraphs. (In conclusion, To summarize)
- (Onsite) Students write restatement sentences and final comment in conclusion paragraph for argumentative essay.

Assignment:

- A final draft of conclusion paragraph about “Should schools ban cell phones and other electronic devices?”.

Evaluation:

- Students complete conclusion paragraph evaluated by the writing rubric correctly more than 60%.

Procedures Online (10 minutes):

1. Present

- Teacher explains in detail about the last paragraph of essay- conclusion paragraph on page 11.
- Students see the example of conclusion paragraph.
- Teacher explains how to write conclusion sentences on page 11.
- Teacher explains how to use transition words (In conclusion, To summarize).

2. Practice

- Teacher assigns exercise 6 as online quizzes in order to check how Students understand with this lesson on page 11-12.

3. Produce

- Students create ONE Restatement or summarize main points about given topic: Should schools ban cell phones and other electronic devices? Why, or why not? (Write as a sentence in online quiz) based on Your last thesis statement and body paragraph.

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Students recap about what they have learnt in the previous class so Teacher can assess what Students remember from the prior lesson and to get them ready for the next lesson.

2. Present (40 minutes)

- Teacher asks Students about the online class, " what they can remember in online video", " Can anyone remember the meaning of argumentative essay?", "what is the good conclusion paragraph writing looks like?"
- Teacher encourages Students to participate to answers so that Teacher can check whether Teacher need to talk about these topics again or moving to the next topic.
- After Students share and discuss about the conclusion paragraph; Teacher display both good and not so good examples of body paragraphs collected from Students in Edpuzzle.
- Teacher feedback some of the conclusion paragraph collected from Students to the whole class.
- Teacher needs to make sure that Students understand and be able to identify the good examples of the body paragraphs.
- Teacher assigns Students to work as a group (3 Students /group) to write the conclusion paragraph about Should schools ban cell phones and other electronic devices? using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you're going to plan your writing.
- Students will write conclusion paragraph with at least 150 words about "Should schools ban cell phones and other electronic devices?" in Writing Practice 3 based on thesis statement from Writing Practice 1 and body paragraph from Writing Practice 1.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let's review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students can sit next to people in their group to discuss and work together in order to collaborate writing the conclusion paragraph about given topic.
- Students write a first of conclusion paragraph draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

- After Students finished writing conclusion paragraph, Teacher then displays. After Students finished writing conclusion paragraph, Teacher then displays their works on the screen and feedback each group with peer-review.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Students consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.

Lesson Plan #5

Course: Developing English I

Teacher: Mr. Kitthanate Lawanwong

Time: 2 Hours 30 minutes

Online Video: 10 minutes

Unit 1: Argumentative Essay

Lesson 5: Using Factual details

Classroom: 6/1

30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: Writing Handout, and Power Point Presentation Slide

Language Focus:

- Writing argumentative essay using Factual detail to support opinions
- Vocabulary about GM Plant

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review modal of argumentative essay.
- Students should prepare facts to support their argumentative essay.

Terminal lesson objective:

- Students can write an argumentative essay using factual details to support the essay.

Enabling objective

- (Online) Students explore the content about modal of argumentative essay using factual details to support the essay.
- (Onsite) Students can write an argumentative essay using factual details to support the essay.

Assignment:

- A final draft of an argumentative essay using factual details to support the essay about "Should we move on to more organic foods than GMO foods?".

Evaluation:

- Students complete an argumentative essay evaluated by the writing rubric correctly more than 60%.

Procedures Online (10 minutes):

1. Present

- Teacher shows Example of essay- Crops, Codes, and Controversy- and describe pattern of this essay.
- Teacher explains vocabulary appearing in this essay to help Students understand.
- Teacher describes how to use facts to support your opinion on page 15.

2. Practice

- Teacher assigns exercise 7-8 as online quizzes in order to check how Students understand with this lesson on page 15-16.

3. Produce

- Students create ONE thesis statement about given topic: Should we move on to more organic foods than GMO foods? Why, or why not? (Write as a sentence in

online quiz) based on Your last thesis statement and topic sentences of each body paragraph.

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Students recap about what they have learnt in the previous class so Teacher can assess what Students remember from the prior lesson and to get them ready for the next lesson.

2. Present (40 minutes)

- Teacher asks Students about the online class, " what they can remember in online video", " Can anyone remember how to use facts to support the essay?", "what is the good essay writing looks like?"
- Teacher encourages Students to participate to answers so that Teacher can check whether Teacher need to talk about these topics again or moving to the next topic.
- After Students share and discuss about how to use facts to support the essay; T display both good and not so good examples of how to use facts to support the essay collected from Students in Edpuzzle.
- Teacher feedback some of the paragraph collected from Students to the whole class.
- Teacher needs to make sure that Students understand and be able to identity the good examples of the body paragraphs using facts to support the essay.
- Teacher assigns Students to write essay about “Should we move on to more organic foods than GMO foods?” using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you’re going to plan your writing.
- Students will write essay with at least 200 words about “Should we move on to more organic foods than GMO foods?” in Writing Practice 4.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let’s review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students write a first draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

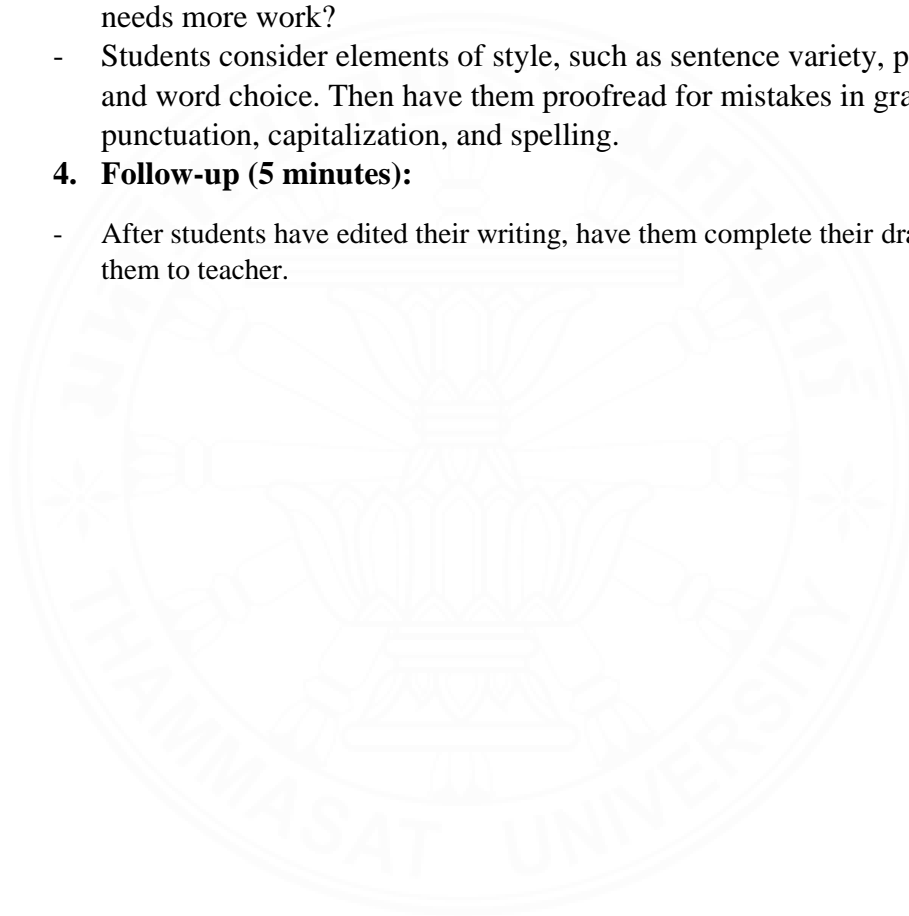
- After Students finished writing, Teacher then displays. After Students finished writing, Teacher then displays some works on the screen and feedback.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Students consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.



Lesson Plan #6

Course: Developing English I
Time: 2 Hours 30 minutes
Unit 1: Argumentative Essay
Classroom: 6/1

Teacher: Mr.Kitthanate Lawanwong
Online Video: 10 minutes
Lesson 5: Using Reasons
 30 students in class

Background:

- Students:** EFL students in Grade 12, ages 17-18, Thai-speaking
Level: CEFR B1
Materials: Writing Handout, and Power Point Presentation Slide
Language Focus:
- Writing argumentative essay using Factual detail to support opinions
 - Vocabulary about GM Plant

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should prepare using reasons to support their argumentative essay.

Terminal lesson objective:

- Students can write an argumentative essay using reasons to support the essay.

Enabling objective

- (Online) Students explore the content about modal of argumentative essay using reasons to support the essay.
- (Onsite) Students can write an argumentative essay using reasons to support the essay.

Assignment:

- A final draft of an argumentative essay using reasons to support the essay about “Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with?”.

Evaluation:

- Students complete an argumentative essay evaluated by the writing rubric correctly more than 60%.

Procedures Online (10 minutes):

1. Present

- Teacher shows Example of essay- Keeping In Secret - and describe pattern of this essay.
- Teacher explains vocabulary appearing in this essay to help Students understand.
- Teacher describes how to use reasons to support your opinion on page 22.
- Teacher introduces your reasons with conjunctions- because, as, so, and therefore on page 23.

2. Practice

- Teacher assigns exercise 9 as online quizzes in order to check how Students understand with this lesson on page 24.

3. Produce

- Students create ONE thesis statement about given topic: Some people believe that humans are destroying Earth, while others argue that humans are making

Earth better. What opinion do you agree with? (Write as a sentence in online quiz).

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Students recap about what they have learnt in the previous class so Teacher can assess what Students remember from the prior lesson and to get them ready for the next lesson.

2. Present (40 minutes)

- Teacher asks Students about the online class, " what they can remember in online video".
- Teacher encourages Students to participate to answers so that Teacher can check whether Teacher need to talk about these topics again.
- After Students share and discuss about thesis statement in your quiz; Teacher display both good and not so good examples of thesis statement collected from Students in Edpuzzle.
- Teacher feedback some of the thesis statement collected from Students to the whole class.
- Teacher needs to make sure that Students understand and be able to identity the good examples of the thesis statement .
- Teacher assigns to write essay about “Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with?” using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you're going to plan your writing.
- Students will write essay with at least 200 words about “Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with?” in Writing Practice 5.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let's review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students write a first draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

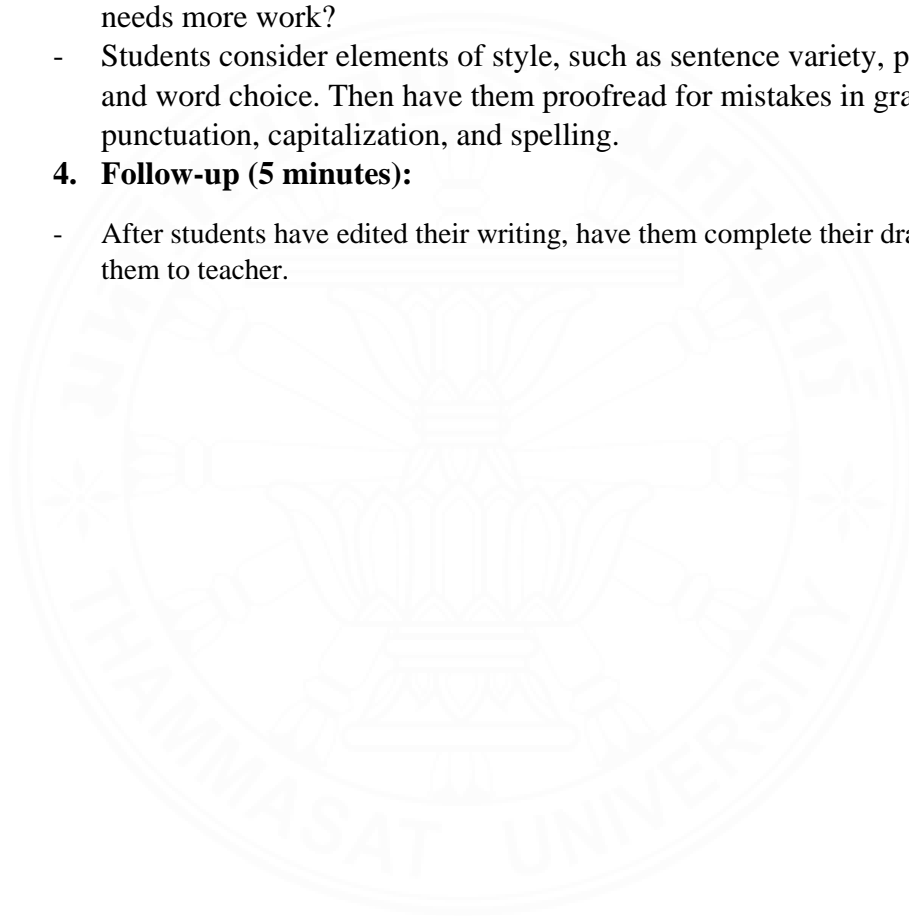
- After Students finished writing, Teacher then displays. After Students finished writing, Teacher then displays some works on the screen and feedback.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Students consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.



Lesson Plan #7

Course: Developing English I

Teacher: Mr. Kitthanate Lawanwong

Time: 2 Hours 30 minutes

Online Video: 10 minutes

Unit 1: Argumentative Essay

Lesson 5: Using Relevant Details

Classroom: 6/1

30 students in class

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: Writing Handout, and Power Point
Presentation Slide

Language Focus:

- Writing argumentative essay using Relevant detail to support opinions
- Vocabulary about animals and zoo.

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review modal of argumentative essay.
- Students should prepare information to relevant with their argumentative essay.

Terminal lesson objective:

- Students can write an argumentative essay with relevant details to support the essay.

Enabling objective

- (Online) Students explore the content about modal of argumentative essay using relevant details to support the essay.
- (Onsite) Students can write an argumentative essay using relevant details to support the essay.

Assignment:

- A final draft of an argumentative essay using relevant details to support the essay:
What do you think Animals are better off in zoos than in the wild?

Evaluation:

- Students complete an argumentative essay evaluated by the writing rubric correctly more than 60%.

Procedures Online(10 minutes):

1. Present

- Teacher shows Example of essay- Behind Bars at the Zoo- and describe pattern of this essay page 26.
- Teacher explains vocabulary appearing in this essay to help Ss understand.
- Teacher describes how to have relevant in your essay on page 28-29.

2. Practice

- Teacher assigns exercise 10-11 as online quizzes in order to check how Students understand with this lesson on page 28-29.

3. Produce

- Students create ONE thesis statement about given topic: “Do you think zoos are necessary to our society?” (Write as a sentence in online quiz).

Procedures in class:

1st period

1. Warm-Up (10 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.
- Students recap about what they have learnt in the previous class so Teacher can assess what Students remember from the prior lesson and to get them ready for the next lesson.

2. Present (40 minutes)

- Teacher asks Students about the online class, " what they can remember in online video".
- Teacher encourages Students to participate to answers so that Teacher can check whether Teacher need to talk about these topics again.
- After Students share and discuss about supporting statements in your quiz; Teacher displays both good and not so good examples of supporting statement collected from Students in Edpuzzle.
- Teacher feedback some of the supporting statement collected from Students to the whole class.
- Teacher needs to make sure that Students understand and be able to identity the good examples of the supporting statement.
- Teacher assigns Students to write essay about “Do you think zoos are necessary to our society?” using the pattern presented on the Edpuzzle.

2nd Period

3. Practice (95 minutes)

Planning-Writing (20 minutes)

- Teacher says Now you're going to plan your writing.
- Students will write essay with at least 200 words about “Do you think zoos are necessary to our society?” in Writing Practice 6.
- Teacher says You already know your topic. So your next step is Prewriting. Say Let's review. What are some ways we do prewriting? (brainstorm, free-write, make lists, use a graphic organizer, use sentence starters)
- Teacher says Now decide what you want to use for Prewriting.

While-Writing (30 minutes)

- Students write a first draft and teacher walks around the classroom in order to give some advice to them.
- Students should focus on words and phrases to express their ideas.

3rd Period**Giving Feedback (20 minutes)**

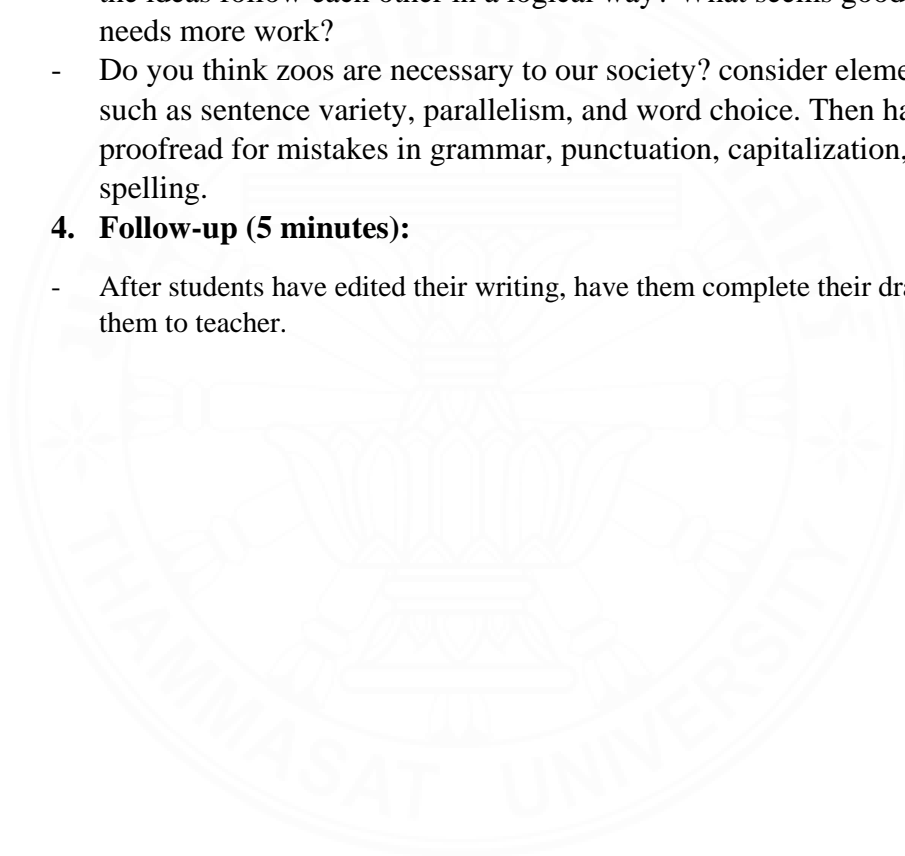
- After Do you think zoos are necessary to our society? finished writing, Teacher then displays. After Do you think zoos are necessary to our society? finished writing, Teacher then displays their works on the screen and feedback each group with peer-review.

Edit and Proofread (25 minutes)

- After students have got some comments for their first drafts, have them rewrite their writing and think about their ideas and organization. Each student considers the following: Is the main idea easily identifiable? Do the ideas follow each other in a logical way? What seems good? What needs more work?
- Do you think zoos are necessary to our society? consider elements of style, such as sentence variety, parallelism, and word choice. Then have them proofread for mistakes in grammar, punctuation, capitalization, and spelling.

4. Follow-up (5 minutes):

- After students have edited their writing, have them complete their drafts and send them to teacher.



Lesson Plan #8

Course: Developing English I

Time: 2 Hours 30 minutes

Unit 1: Argumentative Essay

Lesson : Post-test

Classroom: 6/1

30 students in class

Teacher: Mr.Kitthanate Lawanwong

Background:

Students: EFL students in Grade 12, ages 17-18, Thai-speaking

Level: CEFR B1

Materials: pre-test

Language Focus: Writing a pre-test of argumentative essay

Previous Classwork/What do Ss know that prepares them for this lesson:

- Students should review all structure of argumentative essay.

Terminal lesson objective:

- Students can write an argumentative essay.

Enabling objective

- Students take the Post-test assessment.

Assignment:

- A Post-test of Argumentative essay writing

Procedures in class:

1. Warm-Up (5 minutes):

- Teacher greets Students to welcome them and make Students feel relax before starting the class.

2. Present (10 minutes)

- Teacher talks to Students about the purposes of the post-test.
- Teacher informs Students that they will be asked to do the post-test about Argumentative Essay.
- Teacher explains the instruction to Students and clarify if there are any questions about the test.

3. Pre-test Writing (1 hours and 30 minutes)

- Students will be asked to split their seats.
- Students take 1.30 hours to take the post-test assessment.

4. Self-evaluation (35 minutes)

- Teacher presents the QR code of self-evaluation on the screen.
- Students scan the QR code to enter to the google form.
- Students do the self-evaluation independently.

APPENDIX E
THE EXPERT'S EVALUATION ON LESSON PLANS WITH FC
INSTRUCTION

Unit	Objectives	Activities	Professors			Total
			1	2	3	
1. Writing Introductory Paragraph	(Online) Students explore the content about argumentative meaning, pattern, and model - Introductory paragraph and thesis statement.	- Study the model of argumentative essay: Argument for Zoo on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Study the argumentative essay, introductory paragraph, and thesis statement on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	0	1	0.66
		-Create the thesis statement about given topic: Should schools ban cell phones and other electronic devices? Why, or why not? On Edpuzzle application.	1	1	1	1
	(Onsite) Students write general statements, and thesis statement in introductory paragraph for argumentative essay.	-Work in class as THREE persons in ONE group to write introductory paragraph of argumentative essay including general statements and thesis statement with given topic: Should schools ban cell phones and other electronic devices. Why, or why not?	1	1	1	1
		-Edit and proofread introduction paragraph from teacher's comments	1	1	1	1
2. Writing Body Paragraphs	(Online) Students explore the content about argumentative meaning, pattern, and model - Body paragraph- topic and supporting sentences.	-Study the model of argumentative essay, Body paragraph- topic and supporting sentences on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Create TWO topic sentences about given topic: Should schools ban cell phones and other electronic devices? Why, or why not? on Edpuzzle application.	1	0	1	0.66

Unit	Objectives	Activities	Professors			Total
			1	2	3	
2. Writing Body Paragraphs	(Onsite) Students write topic sentence and supporting sentences in body paragraphs for argumentative essay.	-Work in class as THREE persons in ONE group to write body paragraphs of argumentative essay including topic sentences and supporting sentences with given topic: Should schools ban cell phones and other electronic devices? Why, or why not?	1	1	1	1
		-Edit and proofread body paragraphs from teacher's comments	1	0	1	0.66
3. Writing Conclusion Paragraph	Online) Students explore the content about argumentative meaning, pattern, and model - conclusion paragraph- restatement sentences and opinion sentences.	-Study the argumentative essay, conclusion paragraph- restatement sentences and final comment and supporting sentences on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Study and practice using transition words to connect their paragraphs (In conclusion, To summarize) and supporting sentences on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	0	1	1	0.66
	(Onsite) Students write restatement sentences and opinion sentences in conclusion paragraph for argumentative essay.	-Work in class as THREE persons in ONE group to write conclusion paragraphs of argumentative essay including restatement sentences and final comment with given topic: Should schools ban cell phones and other electronic devices? Why, or why not?	0	1	1	0.66
		-Edit and proofread conclusion paragraphs from teacher's comments	1	0	1	0.66

Unit	Objectives	Activities	Professors			Total
			1	2	3	
4. Using Factual details	(Online) Students explore the content about modal of argumentative essay using factual details to support the essay.	-Study Example of essay- Crops, Codes, and Controversy- , pattern of this essay, and using facts to support your opinion on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Create ONE thesis statement about given topic: Should we move on to more organic foods than GMO foods? Why, or why not? on Edpuzzle application.	1	1	1	1
	(Onsite) Students can write an argumentative essay using factual details to support the essay.	-Review some of the thesis statements about given topic: Should we move on to more organic foods than GMO foods? Why, or why not? collected from Students on Edpuzzle to the whole class.	1	1	1	1
		-Write essay about “Should we move on to more organic foods than GMO foods?”	1	1	1	1
		-Edit and proofread their first draft from some comments, and rewrite writing.	0	1	1	0.66
5. Using Reasons	(Online) Students explore the content about modal of argumentative essay using reasons to support the essay.	-Study the example of essay- Keeping In Secret -, pattern of reason essay, use reasons to support opinions, and conjunctions: because, as, so, and therefore: on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Create ONE thesis statement about given topic: Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with? on Edpuzzle application.	1	1	1	1

Unit	Objectives	Activities	Professors			Total
			1	2	3	
5. Using Reasons	(Onsite) Students can write an argumentative essay using reasons to support the essay.	-Review some of the thesis statements collected from Students on Edpuzzle to the whole class.	1	0	1	0.66
		-Write essay about Some people believe that humans are destroying Earth, while others argue that humans are making Earth better. What opinion do you agree with?"	1	1	1	1
		-Edit and proofread their first draft from some comments, and rewrite writing.	1	0	1	0.66
6. Using Relevant Details	(Online) Students explore the content about modal of argumentative essay using relevant details to support the essay.	-Study the example of essay- Behind Bars at the Zoo- , pattern of this essay, and using relevant details to support the essay on Edpuzzle application and answer some interrupted questions during watching the clip to check if students understand.	1	1	1	1
		-Create ONE thesis statement about given topic: Do you think zoos are necessary to our society? on Edpuzzle application	1	1	1	1
	(Onsite) Students can write an argumentative essay using relevant details to support the essay.	-Review some of the thesis statements collected from Students on Edpuzzle to the whole class.	1	0	1	0.66
		-Write essay about Do you think zoos are necessary to our society?	1	1	1	1
		-Edit and proofread their first draft from some comments, and rewrite writing.	1	0	1	0.66

.....
 (.....)

APPENDIX F
THE EXPERT'S EVALUATION ON THE ARGUMENTATIVE
ESSAY WRITING TESTS

Genre of test	Topic of Essay	Professors			Total
		1	2	3	
1.Pretest	Nowadays, there are a lot of online criminals, so people think their information is unsafe. They are trying to keep it privacy; however, when you would like to register some services, they need some your information to verify yourself for your information's security. What do you think security or privacy is more necessary to your daily life?	1	1	1	1
2.Post-test	Artificial Intelligence is the modern technology, so many companies has generated new applications like ChatGPT to help people work more conveniently and reduce their workload. In the field of education, these also help students generate their assignments without their practice. Do you think the use of AI technology like ChatGPT should ban in school?	1	1	1	1

APPENDIX F
THE EXPERT'S EVALUATION ON RUBRIC SCORE

Objective	Range	Content	Professors			Total
			1	2	3	
1.CLAIM	5	The introduction orients the reader sufficiently and effectively to the topic and to the author's thesis.	1	1	1	1
	4	The introduction addresses the topic clearly but may not be as effective as a rated paper in this category.	1	1	1	1
	3	The introduction addresses the topic clearly. Its parts are developed and organized in a way that orients the reader adequately to the topic and to the author's thesis, though some parts of the paragraph could have been better developed or elaborated.	1	1	1	1
	2	The introduction may be brief or inadequately developed and not orient the reader sufficiently to the topic and to the author's thesis, rendering the proposed solution somewhat practical and the problem somewhat real. Topic should be more focused with respect to audience and purpose. Some elements in the paragraph are underdeveloped.	0	1	1	0.66
	1	The introduction is brief and less than adequate and does not orient the reader sufficiently to the topic and to the author's thesis, making the feasibility of the proposed solution highly questionable or raising only superficial argument. Problem may not exist at all. Topic lacks clarity and focus and some elements are missing or undeveloped.	1	1	1	1
	0	The introduction lacks clarity and focus and does not orient the reader to the topic and to the arguable thesis.	1	1	1	1

Objective	Range	Content	Professors			Total
			1	2	3	
2.REASON	5	Supporting points and details are exceptionally well chosen and appropriate to audience and purpose and in amount and variety. Details are clearly and insightfully developed and organized providing the strongest possible justification for the claim. Where appropriate, use of resources provides strong, accurate, and credible support to the claim. Sources are well integrated and documented.	1	1	1	1
	4	Supporting points are strong, relevant, and important. Developmental details are well chosen, developed, and appropriate in amount and variety though may not be as effective as a 5-rated paper in this category. When needed, use of resources provides strong, accurate, and credible support to the claim. Sources are generally well integrated and documented.	1	1	1	1
	3	Support is relevant, important, and appropriate in amount and variety though some of which, relative to other reasons, may be less compelling or not strongly related to the claim. Some supporting details could have been better developed or made clearer. Documentation is used properly most of the time when appropriate.	1	1	1	1
	2	Support is relevant but some points may be weak, or unimportant. Developmental details may occasionally be descriptive, less than adequate, or not be varied enough. Some selected details are perhaps not consistently well chosen for audience and purpose, and may not be based on reliable sources. Documentation is sometimes used to cite sources of information.	1	1	1	1

	1	Support is attempted but developmental details are often limited in variety and amount, uneven, predictable, irrelevant, or unimportant. Most details may not be well grounded in credible resources; they may be based on biased or uninformed generalizations, or questionable sources of information. Documentation is frequently neglected or not used properly when appropriate.	1	1	1	1
	0	All the reasons stated are overly broad or simplistic, predictable, irrelevant or not grounded in credible resources.	1	1	1	1
3.REBUTTAL TO ARGUMENT COUNTER	5	Important counter-arguments are acknowledged and responded adequately and effectively.	1	1	1	1
	4	Important counter-arguments are generally well acknowledged and responded.	1	1	1	1
	3	Some important counter-arguments are stated and refuted adequately.	1	1	1	1
	2	Somewhat important counter-arguments are stated but may not be refuted adequately.	1	1	1	1
	1	Some relatively unimportant counter-arguments are stated but may not be refuted adequately.	1	1	1	1
	0	No possible counter-argument is identified.	1	1	1	1
4.ORGANIZATION	5	Essay contains the strong control of organization, uses a variety of cohesive devices effectively, and exhibits a smooth progression of ideas.	1	1	1	1
	4	Essay contains a recognizable organizational pattern, uses a range of cohesive devices appropriately although there may be some under-/over-use, and well organized with a clear beginning, middle, and ending.	1	1	1	1
	3	Essay contains a discernible organization, though often simple and obvious, cohesive devices are usually used to convey relationships among ideas, and well organized with beginning, middle, and ending, but one of those parts needs to be strengthened.	1	1	1	1
	2	Essay contains emerging ability to organize ideas in paragraphs with topic sentences, and some cohesive devices are inadequate, inaccurate, or over-used. •one part (beginning, middle, or ending) of the writing is weak.	1	1	1	1

	1	Essay contains limited ability to express ideas clearly in an organized pattern, uses a limited range of cohesive devices, and those used may not indicate a logical relationship between ideas. There are the beginning, middle, and ending all run together.	1	1	1	1
	0	The organization pattern is unclear and confusing and has very little control of cohesive devices and organizational features.	1	1	1	1



APPENDIX G
THE EXPERT'S EVALUATION ON QUESTIONNAIRE

Evaluation List	Professors			Professors
	1	2	3	
ความรู้ความเข้าใจในการเรียนและการเขียน Learning and Writing Development				
1. มีความรู้ความเข้าใจเกี่ยวกับการเขียนโต้แย้งก่อนเรียน 1. You understand argumentative writing before taking this course.	1	1	1	1
2. มีความรู้ความเข้าใจเกี่ยวกับการเขียนโต้แย้งหลังเรียน 2. You understand argumentative writing after taking this course.	1	1	1	1
3. สามารถอธิบายองค์ประกอบสำคัญของการเขียนโต้แย้งได้ 3. You can explain about the components of argumentative writing	1	1	1	1
4. สามารถเขียนโต้แย้งได้ 4. You can write argumentative essays.	1	1	1	1
วิธีการสอนและผู้สอน Instructional Method, Materials, and Instructor				
1. วิธีการสอนแบบห้องเรียนสลับด้านโดยใช้เอ็ดพัซเซิลมีความเหมาะสมกับการเรียนการเขียนโต้แย้ง 1. The FC method by using Edpuzzle is suitable for learning argumentative writing.	1	1	1	1
2. วิธีการสอนแบบห้องเรียนสลับด้านโดยใช้เอ็ดพัซเซิลสามารถช่วยให้นักเรียนเรียนรู้การเขียนโต้แย้งได้ 2. The FC method by using Edpuzzle can help you learn argumentative writing.	1	1	1	1
3. เอกสารประกอบการเรียนมีความเหมาะสมกับการเรียนการเขียนโต้แย้ง 3. The handout is suitable for learning argumentative writing.	1	1	1	1
4. ผู้สอนมีความเข้าใจการเขียนโต้แย้ง 4. The instructor understands argumentative writing.	1	1	1	1
5. ผู้สอนสามารถถ่ายทอดอธิบายรายละเอียดต่างๆ ได้ชัดเจนเป็นระบบ 5. The instructor can explain clearly and systematically about argumentative writing.	0	1	1	0.66
6. ผู้สอนให้นักเรียนฝึกปฏิบัติรวมทั้งให้คำแนะนำที่เป็นประโยชน์ 6. The instructor allows you to practice as well as providing useful suggestions.	0	1	1	0.66

Evaluation List	Professors			Professors
	1	2	3	
<p>ความพึงพอใจที่ได้รับจากการเรียน</p> <p>Learning Satisfaction and Overall Attitudes</p>				
<p>1. มีความพึงพอใจต่อวิธีการสอนแบบห้องเรียนสลับด้านโดยใช้เอ็ดพัซเซิล</p> <p>1. You are satisfied with The FC method by using Edpuzzle.</p>	0	1	1	0.66
<p>2. มีความพึงพอใจต่อผู้สอน</p> <p>2. You are satisfied with the instructor.</p>	1	1	1	1
<p>3. มีความพึงพอใจต่อบรรยากาศในชั้นเรียน</p> <p>3. You are satisfied with the classroom atmosphere.</p>	1	1	1	1
<p>4. มีความพึงพอใจต่อเอกสารประกอบการเรียน</p> <p>4. You are satisfied with the learning and teaching materials.</p>	1	1	1	1
<p>5. มีความมั่นใจในการเขียนโต้แย้ง</p> <p>5. You are confident in your argumentative writing ability.</p>	1	1	1	1
<p>6. มีพัฒนาการในการเขียนโต้แย้ง</p> <p>6. You have developed your ability of argumentative writing.</p>	1	1	1	1
<p>7. การเขียนโต้แย้งเป็นประโยชน์ต่อนักเรียน</p> <p>7. Argumentative writing is useful for you.</p>	1	1	1	1
<p>ความคิดเห็นเพิ่มเติม</p> <p>Additional Comments</p>				
<p>1. นักเรียนมีความคิดเห็นต่อการเรียนการสอนเรื่องความภาษาอังกฤษเชิงโต้แย้งตามแนวการสอนแบบห้องเรียนสลับด้านโดยใช้ แอปพลิเคชันเอ็ดพัซเซิลอย่างไร</p> <p>1. How do you think about learning argumentative essay writing through flipped classroom instruction by using Edpuzzle Application?</p>	1	1	1	1
<p>2. นักเรียนมีความคิดเห็นต่อเอกสารประกอบการสอนการสอนเรื่องความภาษาอังกฤษเชิงโต้แย้งตามแนวการสอนแบบห้องเรียนสลับด้านโดยใช้ แอปพลิเคชันเอ็ดพัซเซิลอย่างไร</p> <p>2. How do you think about learning material of argumentative essay writing through flipped classroom instruction by using Edpuzzle Application?</p>	1	1	1	1
<p>3. นักเรียนมีความคิดเห็นต่อครูผู้สอนอย่างไร.</p> <p>How do you think about the instructor?</p>	1	1	1	1
<p>4. นักเรียนแสดงความคิดเห็นอื่นๆ</p> <p>Other comments.</p>	1	1	1	1

APPENDIX H

SCORING OF PRE-POSTTEST AND ASSIGNMENTS

NO.	Pretest																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	3	1	2	2	3	1	3	2.3	4	0	3	2.3	4	3	0	2.3	14	5	8	9	4.6
ST2	3	2	2	2.3	3	2	2	2.3	3	1	3	2.3	4	3	3	3.3	13	8	10	10	2.5
ST3	4	1	3	2.7	4	2	4	3.3	4	1	3	2.7	3	1	2	2	15	5	12	11	5.1
ST4	4	1	2	2.3	3	2	3	2.7	4	1	3	2.7	3	2	2	2.3	14	6	10	10	4
ST5	2	1	2	1.7	3	1	2	2	3	1	2	2	3	1	2	2	11	4	8	7.7	3.5
ST6	3	1	2	2	2	1	2	1.7	3	0	1	1.3	3	3	1	2.3	11	5	6	7.3	3.2
ST7	3	2	3	2.7	3	2	4	3	4	1	4	3	4	3	3	3.3	14	8	14	12	3.5
ST8	4	1	3	2.7	4	2	3	3	4	1	3	2.7	4	2	3	3	16	6	12	11	5
ST9	3	0	2	1.7	3	1	3	2.3	3	0	2	1.7	3	2	3	2.7	12	3	10	8.3	4.7
ST10	3	1	2	2	2	2	2	2	3	1	3	2.3	3	2	2	2.3	11	6	9	8.7	2.5
ST11	3	1	2	2	2	1	3	2	4	1	4	3	4	2	3	3	13	5	12	10	4.4
ST12	1	1	1	1	2	0	1	1	2	0	2	1.3	1	0	1	0.7	6	1	5	4	2.6
ST13	1	2	3	2	2	1	2	1.7	2	0	2	1.3	1	0	1	0.7	6	3	8	5.7	2.5
ST14	2	2	1	1.7	2	1	2	1.7	2	1	2	1.7	2	1	1	1.3	8	5	6	6.3	1.5
ST15	2	0	1	1	2	1	2	1.7	2	0	2	1.3	1	1	2	1.3	7	2	7	5.3	2.9
ST16	3	2	1	2	4	2	3	3	3	1	2	2	2	1	3	2	12	6	9	9	3
ST17	1	1	1	1	1	0	1	0.7	1	0	1	0.7	1	1	1	1	4	2	4	3.3	1.2
ST18	2	1	2	1.7	1	1	2	1.3	2	0	2	1.3	2	1	2	1.7	7	3	8	6	2.6
ST19	3	2	2	2.3	3	1	2	2	3	0	3	2	2	1	2	1.7	11	4	9	8	3.6
ST20	1	1	1	1	1	1	1	1	1	0	1	0.7	1	0	1	0.7	4	2	4	3.3	1.2
ST21	4	2	2	2.7	3	1	3	2.3	4	0	3	2.3	4	4	3	3.7	15	7	11	11	4
ST22	2	1	1	1.3	2	1	2	1.7	2	0	2	1.3	2	1	2	1.7	8	3	7	6	2.6
ST23	1	0	1	0.7	1	0	1	0.7	1	0	1	0.7	1	0	0	0.3	4	0	3	2.3	2.1
ST24	3	2	3	2.7	3	2	2	2.3	3	1	2	2	2	1	2	1.7	11	6	9	8.7	2.5
ST25	3	2	2	2.3	2	1	2	1.7	3	1	2	2	3	1	2	2	11	5	8	8	3
ST26	4	3	2	3	4	3	3	3.3	4	2	4	3.3	3	4	2	3	15	12	11	13	2.1
ST27	2	2	2	2	2	1	1	1.3	1	0	1	0.7	1	0	2	1	6	3	6	5	1.7
ST28	3	2	2	2.3	3	1	2	2	2	0	3	1.7	2	0	2	1.3	10	3	9	7.3	3.8
ST29	2	1	1	1.3	2	0	1	1	2	0	1	1	2	1	2	1.7	8	2	5	5	3
ST30	2	1	1	1.3	2	0	1	1	1	0	0	0.3	1	1	1	1	6	2	3	3.7	2.1
X	2.6	1.3	1.8	1.9	2.5	1.2	2.2	1.9	2.7	0.5	2.2	1.8	2.4	1.4	1.9	1.9	10	4.4	8.1	7.5	3
SD	1	0.7	0.7	0.6	0.9	0.7	0.9	0.8	1.1	0.6	1	0.8	1.1	1.2	0.9	0.9	3.7	2.5	2.8	2.8	1.1

NO.	Posttest																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	5	3	3	3.7	4	4	5	4.3	5	3	4	4	5	5	5	5	19	15	17	17	2
ST2	4	3	5	4	4	4	3	3.7	5	3	3	3.7	5	4	5	4.7	18	14	16	16	2
ST3	3	3	4	3.3	3	3	3	3	4	2	3	3	4	3	4	3.7	14	11	14	13	1.7
ST4	4	3	5	4	3	4	4	3.7	4	3	4	3.7	4	4	5	4.3	15	14	18	16	2.1
ST5	4	4	5	4.3	4	4	4	4	4	3	5	4	4	4	5	4.3	16	15	19	17	2.1
ST6	4	3	5	4	4	4	4	4	4	4	5	4.3	5	4	5	4.7	17	15	19	17	2
ST7	4	4	5	4.3	4	4	4	4	4	3	5	4	5	4	5	4.7	17	15	19	17	2
ST8	4	3	3	3.3	3	4	5	4	4	4	4	4	5	5	5	5	16	16	17	16	0.6
ST9	3	3	3	3	3	3	3	3	4	3	3	3.3	4	4	3	3.7	14	13	12	13	1
ST10	4	3	5	4	4	4	5	4.3	4	4	5	4.3	3	4	4	3.7	15	15	19	16	2.3
ST11	4	3	4	3.7	4	3	3	3.3	4	3	3	3.3	3	4	5	4	15	13	15	14	1.2
ST12	4	4	5	4.3	5	4	5	4.7	4	3	4	3.7	5	5	4	4.7	18	16	18	17	1.2
ST13	3	4	5	4	3	3	5	3.7	4	3	5	4	4	4	5	4.3	14	14	20	16	3.5
ST14	4	3	4	3.7	3	4	4	3.7	4	3	4	3.7	4	4	4	4	15	14	16	15	1
ST15	4	4	5	4.3	4	5	5	4.7	4	4	5	4.3	4	5	5	4.7	16	18	20	18	2
ST16	4	4	5	4.3	4	4	4	4	4	3	5	4	4	4	5	4.3	16	15	19	17	2.1
ST17	5	3	3	3.7	4	4	5	4.3	5	4	5	4.7	5	5	5	5	19	16	18	18	1.5
ST18	4	4	4	4	5	4	4	4.3	5	4	4	4.3	4	5	4	4.3	18	17	16	17	1
ST19	4	3	4	3.7	4	4	4	4	4	4	4	4	4	4	4	4	16	15	16	16	0.6
ST20	5	5	5	5	4	5	4	4.3	4	4	5	4.3	5	5	5	5	18	19	19	19	0.6
ST21	5	4	5	4.7	4	5	5	4.7	5	4	5	4.7	5	5	5	5	19	18	20	19	1
ST22	5	5	5	5	5	5	5	5	5	4	5	4.7	5	5	3	4.3	20	19	18	19	1
ST23	4	3	5	4	4	3	4	3.7	4	3	5	4	4	4	3	3.7	16	13	17	15	2.1
ST24	5	4	5	4.7	4	4	5	4.3	4	4	5	4.3	5	5	5	5	18	17	20	18	1.5
ST25	4	4	5	4.3	4	4	4	4	4	3	5	4	5	5	5	5	17	16	19	17	1.5
ST26	4	4	5	4.3	4	4	4	4	4	4	5	4.3	5	4	5	4.7	17	16	19	17	1.5
ST27	4	4	5	4.3	4	3	3	3.3	4	3	3	3.3	4	4	5	4.3	16	14	16	15	1.2
ST28	4	4	5	4.3	4	4	4	4	4	4	5	4.3	5	5	5	5	17	17	19	18	1.2
ST29	5	3	5	4.3	4	3	5	4	5	3	5	4.3	5	5	4	4.7	19	14	19	17	2.9
ST30	5	5	3	4.3	4	4	4	4	5	4	5	4.7	5	5	5	5	19	18	17	18	1
X	4.2	3.6	4.5	4.1	3.9	3.9	4.2	4	4.3	3.4	4.4	4	4.5	4.4	4.6	4.5	17	15	18	17	1.6
SD	0.6	0.7	0.8	0.5	0.5	0.6	0.7	0.5	0.4	0.6	0.8	0.4	0.6	0.6	0.7	0.5	1.7	1.9	1.9	1.5	0.7

NO.	Assignment 1 (Banning Cellphone)																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	5	4	4	4.3	3	3	4	3.3	4	4	3	3.7	3	4	4	3.7	15	15	15	15	0
ST2	2	3	3	2.7	4	3	3	3.3	3	3	2	2.7	2	3	2	2.3	11	12	10	11	1
ST3	3	4	4	3.7	5	4	5	4.7	5	4	4	4.3	4	4	5	4.3	17	16	18	17	1
ST4	5	3	3	3.7	3	3	3	3	4	3	3	3.3	2	4	3	3	14	13	12	13	1
ST5	5	4	3	4	3	4	4	3.7	3	4	3	3.3	3	4	4	3.7	14	16	14	15	1.2
ST6	5	4	3	4	3	4	4	3.7	3	4	3	3.3	3	4	4	3.7	14	16	14	15	1.2
ST7	5	4	4	4.3	3	3	4	3.3	4	4	3	3.7	3	4	4	3.7	15	15	15	15	0
ST8	4	3	3	3.3	3	3	4	3.3	4	4	3	3.7	3	4	3	3.3	14	14	13	14	0.6
ST9	5	3	3	3.7	3	3	3	3	4	3	3	3.3	2	4	3	3	14	13	12	13	1
ST10	2	3	3	2.7	4	3	3	3.3	4	4	4	4	3	4	3	3.3	13	14	13	13	0.6
ST11	5	4	3	4	4	4	3	3.7	4	4	3	3.7	3	4	4	3.7	16	16	13	15	1.7
ST12	5	4	3	4	4	4	3	3.7	4	4	3	3.7	3	3	4	3.3	16	15	13	15	1.5
ST13	3	3	3	3	3	4	3	3.3	4	4	3	3.7	4	4	3	3.7	14	15	12	14	1.5
ST14	4	3	3	3.3	3	3	4	3.3	4	4	3	3.7	3	4	3	3.3	14	14	13	14	0.6
ST15	3	4	4	3.7	5	4	5	4.7	5	4	4	4.3	4	4	5	4.3	17	16	18	17	1
ST16	3	3	3	3	3	4	3	3.3	4	4	3	3.7	4	4	3	3.7	14	15	12	14	1.5
ST17	3	4	3	3.3	4	4	3	3.7	4	4	3	3.7	4	4	4	4	15	16	13	15	1.5
ST18	5	5	4	4.7	5	4	4	4.3	5	4	4	4.3	3	4	5	4	18	17	17	17	0.6
ST19	2	3	3	2.7	4	3	3	3.3	4	4	4	4	3	4	3	3.3	13	14	13	13	0.6
ST20	3	4	3	3.3	4	4	3	3.7	4	4	3	3.7	4	4	4	4	15	16	13	15	1.5
ST21	5	4	3	4	4	4	3	3.7	4	4	3	3.7	3	3	4	3.3	16	15	13	15	1.5
ST22	5	4	4	4.3	3	3	3	3	3	3	3	3	3	3	4	3.3	14	13	14	14	0.6
ST23	3	4	3	3.3	3	3	3	3	4	4	3	3.7	4	4	3	3.7	14	15	12	14	1.5
ST24	5	5	4	4.7	5	4	4	4.3	5	4	4	4.3	3	4	5	4	18	17	17	17	0.6
ST25	5	5	4	4.7	5	4	4	4.3	4	4	3	3.7	3	4	4	3.7	17	17	15	16	1.2
ST26	3	4	3	3.3	3	3	3	3	4	4	3	3.7	4	4	3	3.7	14	15	12	14	1.5
ST27	2	3	3	2.7	4	3	3	3.3	3	3	2	2.7	2	3	2	2.3	11	12	10	11	1
ST28	5	4	4	4.3	3	3	3	3	3	3	3	3	3	3	4	3.3	14	13	14	14	0.6
ST29	5	5	4	4.7	5	4	4	4.3	4	4	3	3.7	3	4	4	3.7	17	17	15	16	1.2
ST30	5	4	3	4	4	4	3	3.7	4	4	3	3.7	3	4	4	3.7	16	16	13	15	1.7
X	4	3.8	3.3	3.7	3.7	3.5	3.5	3.6	3.9	3.8	3.1	3.6	3.1	3.8	3.7	3.5	15	15	14	14	1
SD	1.2	0.7	0.5	0.6	0.8	0.5	0.6	0.5	0.6	0.4	0.5	0.4	0.6	0.4	0.8	0.5	1.7	1.5	2	1.6	0.5

NO.	Assignment 2 (Destroying Earth)																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	4	5	4	4.3	5	4	3	4	5	5	4	4.7	4	5	4	4.3	18	19	15	17	2.1
ST2	5	4	4	4.3	4	4	3	3.7	3	4	3	3.3	4	4	3	3.7	16	16	13	15	1.7
ST3	5	5	4	4.7	5	4	3	4	3	4	3	3.3	4	4	3	3.7	17	17	13	16	2.3
ST4	5	4	4	4.3	4	5	4	4.3	3	4	3	3.3	5	5	4	4.7	17	18	15	17	1.5
ST5	5	5	4	4.7	5	5	4	4.7	5	5	4	4.7	5	4	4	4.3	20	19	16	18	2.1
ST6	5	5	5	5	5	4	4	4.3	5	4	4	4.3	5	5	4	4.7	20	18	17	18	1.5
ST7	3	4	4	3.7	5	4	4	4.3	5	5	4	4.7	5	5	4	4.7	18	18	16	17	1.2
ST8	3	4	3	3.3	4	4	4	4	4	4	3	3.7	3	4	3	3.3	14	16	13	14	1.5
ST9	3	4	4	3.7	3	4	4	3.7	4	4	3	3.7	4	4	4	4	14	16	15	15	1
ST10	5	5	5	5	5	5	4	4.7	5	5	4	4.7	5	4	5	4.7	20	19	18	19	1
ST11	4	3	3	3.3	5	4	3	4	3	4	3	3.3	4	4	2	3.3	16	15	11	14	2.6
ST12	3	5	3	3.7	4	4	4	4	4	5	4	4.3	5	5	4	4.7	16	19	15	17	2.1
ST13	5	5	4	4.7	5	4	4	4.3	5	5	4	4.7	4	4	4	4	19	18	16	18	1.5
ST14	4	4	3	3.7	5	4	3	4	3	4	4	3.7	3	4	4	3.7	15	16	14	15	1
ST15	4	3	4	3.7	3	4	2	3	2	4	2	2.7	3	4	3	3.3	12	15	11	13	2.1
ST16	5	4	4	4.3	5	5	3	4.3	4	4	3	3.7	5	4	3	4	19	17	13	16	3.1
ST17	5	5	5	5	5	4	4	4.3	5	5	4	4.7	5	5	5	5	20	19	18	19	1
ST18	5	4	3	4	5	5	4	4.7	3	5	3	3.7	4	5	4	4.3	17	19	14	17	2.5
ST19	4	4	5	4.3	4	5	4	4.3	5	4	4	4.3	3	5	5	4.3	16	18	18	17	1.2
ST20	4	4	4	4	3	4	5	4	4	5	5	4.7	5	5	4	4.7	16	18	18	17	1.2
ST21	4	4	5	4.3	2	4	5	3.7	4	5	4	4.3	4	5	5	4.7	14	18	19	17	2.6
ST22	5	5	5	5	5	5	4	4.7	5	5	5	5	3	5	5	4.3	18	20	19	19	1
ST23	4	4	4	4	4	4	4	4	4	5	3	4	3	4	4	3.7	15	17	15	16	1.2
ST24	5	4	4	4.3	5	4	3	4	5	4	3	4	5	5	4	4.7	20	17	14	17	3
ST25	5	4	4	4.3	5	4	5	4.7	5	5	4	4.7	4	5	4	4.3	19	18	17	18	1
ST26	3	4	3	3.3	4	3	5	4	4	4	4	4	3	4	4	3.7	14	15	16	15	1
ST27	3	4	4	3.7	4	4	4	4	3	5	4	4	4	5	4	4.3	14	18	16	16	2
ST28	4	4	4	4	3	4	5	4	4	4	4	4	4	5	4	4.3	15	17	17	16	1.2
ST29	5	4	4	4.3	4	4	4	4	3	5	4	4	4	5	4	4.3	16	18	16	17	1.2
ST30	3	5	3	3.7	5	3	5	4.3	5	4	4	4.3	4	5	4	4.3	17	17	16	17	0.6
X	4.2	4.3	4	4.2	4.3	4.2	3.9	4.1	4.1	4.5	3.7	4.1	4.1	4.6	3.9	4.2	17	18	15	17	1.6
SD	0.8	0.6	0.7	0.5	0.8	0.5	0.8	0.4	0.9	0.5	0.7	0.6	0.8	0.5	0.7	0.5	2.2	1.3	2.1	1.5	0.7

NO.	Assignment 3 (GM Food)																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	2	2	4	2.7	4	3	4	3.7	4	4	4	4	4	4	5	4.3	14	13	17	15	2.1
ST2	3	4	4	3.7	4	4	4	4	4	4	4	4	4	4	4	4	15	16	16	16	0.6
ST3	5	5	3	4.3	5	5	4	4.7	5	5	4	4.7	5	4	3	4	20	19	14	18	3.2
ST4	5	4	3	4	5	5	4	4.7	5	5	3	4.3	5	5	4	4.7	20	19	14	18	3.2
ST5	3	3	4	3.3	4	3	5	4	5	4	3	4	3	4	4	3.7	15	14	16	15	1
ST6	5	5	4	4.7	5	5	4	4.7	5	5	4	4.7	5	5	4	4.7	20	20	16	19	2.3
ST7	5	5	3	4.3	5	5	5	5	5	5	4	4.7	5	5	4	4.7	20	20	16	19	2.3
ST8	2	3	2	2.3	4	3	3	3.3	3	4	3	3.3	4	4	3	3.7	13	14	11	13	1.5
ST9	4	3	4	3.7	3	3	4	3.3	3	4	2	3	4	4	3	3.7	14	14	13	14	0.6
ST10	5	4	3	4	5	5	4	4.7	5	5	5	5	3	5	3	3.7	18	19	15	17	2.1
ST11	5	3	4	4	3	4	3	3.3	4	4	5	4.3	4	4	4	4	16	15	16	16	0.6
ST12	5	4	4	4.3	4	4	3	3.7	3	4	4	3.7	5	4	4	4.3	17	16	15	16	1
ST13	5	4	4	4.3	5	4	4	4.3	4	5	4	4.3	4	4	3	3.7	18	17	15	17	1.5
ST14	4	5	3	4	4	4	4	4	4	5	4	4.3	5	4	3	4	17	18	14	16	2.1
ST15	5	4	5	4.7	5	4	4	4.3	4	4	4	4	4	4	5	4.3	18	16	18	17	1.2
ST16	5	5	4	4.7	5	5	4	4.7	5	5	4	4.7	5	4	4	4.3	20	19	16	18	2.1
ST17	4	5	4	4.3	5	5	3	4.3	5	4	4	4.3	5	5	4	4.7	19	19	15	18	2.3
ST18	3	4	4	3.7	3	4	4	3.7	3	4	4	3.7	5	5	4	4.7	14	17	16	16	1.5
ST19	4	5	4	4.3	4	4	3	3.7	4	5	3	4	4	5	4	4.3	16	19	14	16	2.5
ST20	5	4	4	4.3	4	4	4	4	5	4	5	4.7	5	4	5	4.7	19	16	18	18	1.5
ST21	5	5	4	4.7	5	5	5	5	5	5	4	4.7	5	5	5	5	20	20	18	19	1.2
ST22	5	5	5	5	3	4	4	3.7	3	4	3	3.3	5	5	4	4.7	16	18	16	17	1.2
ST23	2	5	3	3.3	4	5	4	4.3	3	4	3	3.3	4	5	3	4	13	19	13	15	3.5
ST24	5	4	4	4.3	5	4	4	4.3	3	4	4	3.7	5	5	4	4.7	18	17	16	17	1
ST25	4	4	4	4	3	4	4	3.7	3	4	3	3.3	3	4	3	3.3	13	16	14	14	1.5
ST26	3	4	3	3.3	2	4	4	3.3	3	5	4	4	4	4	3	3.7	12	17	14	14	2.5
ST27	4	5	4	4.3	5	4	4	4.3	5	4	4	4.3	5	4	4	4.3	19	17	16	17	1.5
ST28	5	5	4	4.7	5	5	4	4.7	3	5	3	3.7	5	5	3	4.3	18	20	14	17	3.1
ST29	5	4	3	4	4	4	4	4	3	4	4	3.7	4	4	4	4	16	16	15	16	0.6
ST30	4	5	4	4.3	4	4	3	3.7	3	4	3	3.3	4	5	3	4	15	18	13	15	2.5
\bar{X}	4.2	4.2	3.7	4.1	4.2	4.2	3.9	4.1	4	4.4	3.7	4	4.4	4.4	3.8	4.2	17	17	15	16	1.8
SD	1	0.8	0.6	0.6	0.8	0.7	0.5	0.5	0.9	0.5	0.7	0.5	0.7	0.5	0.7	0.4	2.5	2	1.6	1.6	0.8

NO.	Assignment 4 (ZOO)																				
	Reason				Claim				Rebuttal				Organization				Overall				
	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	R1	R2	R3	\bar{X}	SD
ST1	4	5	4	4.3	4	4	3	3.7	3	4	3	3.3	3	5	4	4	14	18	14	15	2.3
ST2	4	4	3	3.7	5	3	3	3.7	3	3	3	3	3	4	3	3.3	15	14	12	14	1.5
ST3	5	3	4	4	4	3	4	3.7	2	4	3	3	4	4	4	4	15	14	15	15	0.6
ST4	5	4	3	4	5	4	4	4.3	3	4	3	3.3	4	4	4	4	17	16	14	16	1.5
ST5	3	5	3	3.7	3	4	4	3.7	3	5	3	3.7	4	5	4	4.3	13	19	14	15	3.2
ST6	4	5	4	4.3	3	4	4	3.7	2	5	3	3.3	5	5	4	4.7	14	19	15	16	2.6
ST7	5	5	4	4.7	5	4	4	4.3	3	4	3	3.3	5	4	4	4.3	18	17	15	17	1.5
ST8	3	3	3	3	3	4	4	3.7	2	4	2	2.7	3	4	3	3.3	11	15	12	13	2.1
ST9	5	4	4	4.3	3	4	4	3.7	3	4	4	3.7	3	4	4	3.7	14	16	16	15	1.2
ST10	5	5	3	4.3	5	4	4	4.3	5	4	5	4.7	4	5	4	4.3	19	18	16	18	1.5
ST11	5	5	4	4.7	2	4	3	3	2	4	3	3	4	5	4	4.3	13	18	14	15	2.6
ST12	3	5	4	4	3	4	3	3.3	3	5	3	3.7	4	5	4	4.3	13	19	14	15	3.2
ST13	5	4	3	4	5	5	4	4.7	4	4	4	4	4	5	4	4.3	18	18	15	17	1.7
ST14	2	3	3	2.7	2	4	3	3	2	4	3	3	2	4	4	3.3	8	15	13	12	3.6
ST15	5	3	4	4	5	3	3	3.7	3	4	3	3.3	4	4	4	4	17	14	14	15	1.7
ST16	5	4	4	4.3	4	4	5	4.3	4	4	5	4.3	5	5	4	4.7	18	17	18	18	0.6
ST17	4	5	4	4.3	4	5	5	4.7	5	5	4	4.7	3	5	4	4	16	20	17	18	2.1
ST18	4	5	4	4.3	4	5	4	4.3	4	5	4	4.3	4	5	4	4.3	16	20	16	17	2.3
ST19	5	4	4	4.3	4	5	5	4.7	4	5	4	4.3	3	5	5	4.3	16	19	18	18	1.5
ST20	5	5	4	4.7	3	4	5	4	4	5	5	4.7	4	5	5	4.7	16	19	19	18	1.7
ST21	5	5	4	4.7	5	5	4	4.7	5	5	4	4.7	3	5	3	3.7	18	20	15	18	2.5
ST22	4	5	3	4	5	4	5	4.7	5	5	4	4.7	3	5	4	4	17	19	16	17	1.5
ST23	3	4	3	3.3	3	4	4	3.7	3	4	3	3.3	4	4	4	4	13	16	14	14	1.5
ST24	5	5	3	4.3	5	4	4	4.3	5	5	4	4.7	4	5	4	4.3	19	19	15	18	2.3
ST25	5	5	4	4.7	5	4	3	4	5	5	3	4.3	4	5	4	4.3	19	19	14	17	2.9
ST26	5	5	4	4.7	4	5	4	4.3	5	5	3	4.3	5	4	4	4.3	19	19	15	18	2.3
ST27	5	4	4	4.3	5	5	4	4.7	3	4	3	3.3	4	5	4	4.3	17	18	15	17	1.5
ST28	4	5	3	4	5	4	4	4.3	3	4	3	3.3	4	5	4	4.3	16	18	14	16	2
ST29	3	4	3	3.3	4	4	4	4	3	4	3	3.3	3	4	3	3.3	13	16	13	14	1.7
ST30	4	5	3	4	5	4	4	4.3	4	4	3	3.7	4	5	4	4.3	17	18	14	16	2.1
\bar{X}	4.3	4.4	3.6	4.1	4.1	4.1	3.9	4	3.5	4.4	3.4	3.8	3.8	4.6	3.9	4.1	16	18	15	16	2
SD	0.9	0.7	0.5	0.5	1	0.6	0.6	0.5	1	0.6	0.7	0.6	0.7	0.5	0.4	0.4	2.6	1.9	1.6	1.6	0.7

NO.	PRETEST					POSTTEST					ASSIGNMENT1					ASSIGNMENT2					ASSIGNMENT3					ASSIGNMENT4				
	R1	R2	R3	\bar{X}	SD	R1	R2	R3	\bar{X}	SD	R1	R2	R3	\bar{X}	SD	R1	R2	R3	\bar{X}	SD	R1	R2	R3	\bar{X}	SD	R1	R2	R3	\bar{X}	SD
ST1	14	5	8	9.0	4.6	19	15	17	17.0	2.0	15	15	15	15.0	0.0	18	19	15	17.3	2.1	14	13	17	14.7	2.1	14	18	14	15.3	2.3
ST2	13	8	10	10.3	2.5	18	14	16	16.0	2.0	11	12	10	11.0	1.0	16	16	13	15.0	1.7	15	16	16	15.7	0.6	15	14	12	13.7	1.5
ST3	15	5	12	10.7	5.1	14	11	14	13.0	1.7	17	16	18	17.0	1.0	17	17	13	15.7	2.3	20	19	14	17.7	3.2	15	14	15	14.7	0.6
ST4	14	6	10	10.0	4.0	15	14	18	15.7	2.1	14	13	12	13.0	1.0	17	18	15	16.7	1.5	20	19	14	17.7	3.2	17	16	14	15.7	1.5
ST5	11	4	8	7.7	3.5	16	15	19	16.7	2.1	14	16	14	14.7	1.2	20	19	16	18.3	2.1	15	14	16	15.0	1.0	13	19	14	15.3	3.2
ST6	11	5	6	7.3	3.2	17	15	19	17.0	2.0	14	16	14	14.7	1.2	20	18	17	18.3	1.5	20	20	16	18.7	2.3	14	19	15	16.0	2.6
ST7	14	8	14	12.0	3.5	17	15	19	17.0	2.0	15	15	15	15.0	0.0	18	18	16	17.3	1.2	20	20	16	18.7	2.3	18	17	15	16.7	1.5
ST8	16	6	12	11.3	5.0	16	16	17	16.3	0.6	14	14	13	13.7	0.6	14	16	13	14.3	1.5	13	14	11	12.7	1.5	11	15	12	12.7	2.1
ST9	12	3	10	8.3	4.7	14	13	12	13.0	1.0	14	13	12	13.0	1.0	14	16	15	15.0	1.0	14	14	13	13.7	0.6	14	16	16	15.3	1.2
ST10	11	6	9	8.7	2.5	15	15	19	16.3	2.3	13	14	13	13.3	0.6	20	19	18	19.0	1.0	18	19	15	17.3	2.1	19	18	16	17.7	1.5
ST11	13	5	12	10.0	4.4	15	13	15	14.3	1.2	16	16	13	15.0	1.7	16	15	11	14.0	2.6	16	15	16	15.7	0.6	13	18	14	15.0	2.6
ST12	6	1	5	4.0	2.6	18	16	18	17.3	1.2	16	15	13	14.7	1.5	16	19	15	16.7	2.1	17	16	15	16.0	1.0	13	19	14	15.3	3.2
ST13	6	3	8	5.7	2.5	14	14	20	16.0	3.5	14	15	12	13.7	1.5	19	18	16	17.7	1.5	18	17	15	16.7	1.5	18	18	15	17.0	1.7
ST14	8	5	6	6.3	1.5	15	14	16	15.0	1.0	14	14	13	13.7	0.6	15	16	14	15.0	1.0	17	18	14	16.3	2.1	8	15	13	12.0	3.6
ST15	7	2	7	5.3	2.9	16	18	20	18.0	2.0	17	16	18	17.0	1.0	12	15	11	12.7	2.1	18	16	18	17.3	1.2	17	14	14	15.0	1.7

NO.	PRETEST					POSTTEST					ASSIGNMENT 1					ASSIGNMENT 2					ASSIGNMENT 3					ASSIGNMENT 4				
	R1	R2	R3	X	SD	R1	R2	R3	X	SD	R1	R2	R3	X	SD	R1	R2	R3	X	SD	R1	R2	R3	X	SD	R1	R2	R3	X	SD
ST16	12	6	9	9.0	3.0	16	15	19	16.7	2.1	14	15	12	13.7	1.5	19	17	13	16.3	3.1	20	19	16	18.3	2.1	18	17	18	17.7	0.6
ST17	4	2	4	3.3	1.2	19	16	18	17.7	1.5	15	16	13	14.7	1.5	20	19	18	19.0	1.0	19	19	15	17.7	2.3	16	20	17	17.7	2.1
ST18	7	3	8	6.0	2.6	18	17	16	17.0	1.0	18	17	17	17.3	0.6	17	19	14	16.7	2.5	14	17	16	15.7	1.5	16	20	16	17.3	2.3
ST19	11	4	9	8.0	3.6	16	15	16	15.7	0.6	13	14	13	13.3	0.6	16	18	18	17.3	1.2	16	19	14	16.3	2.5	16	19	18	17.7	1.5
ST20	4	2	4	3.3	1.2	18	19	19	18.7	0.6	15	16	13	14.7	1.5	16	18	18	17.3	1.2	19	16	18	17.7	1.5	16	19	19	18.0	1.7
ST21	15	7	11	11.0	4.0	19	18	20	19.0	1.0	16	15	13	14.7	1.5	14	18	19	17.0	2.6	20	20	18	19.3	1.2	18	20	15	17.7	2.5
ST22	8	3	7	6.0	2.6	20	19	18	19.0	1.0	14	13	14	13.7	0.6	18	20	19	19.0	1.0	16	18	16	16.7	1.2	17	19	16	17.3	1.5
ST23	4	0	3	2.3	2.1	16	13	17	15.3	2.1	14	15	12	13.7	1.5	15	17	15	15.7	1.2	13	19	13	15.0	3.5	13	16	14	14.3	1.5
ST24	11	6	9	8.7	2.5	18	17	20	18.3	1.5	18	17	17	17.3	0.6	20	17	14	17.0	3.0	18	17	16	17.0	1.0	19	19	15	17.7	2.3
ST25	11	5	8	8.0	3.0	17	16	19	17.3	1.5	17	17	15	16.3	1.2	19	18	17	18.0	1.0	13	16	14	14.3	1.5	19	19	14	17.3	2.9
ST26	15	12	11	12.7	2.1	17	16	19	17.3	1.5	14	15	12	13.7	1.5	14	15	16	15.0	1.0	12	17	14	14.3	2.5	19	19	15	17.7	2.3
ST27	6	3	6	5.0	1.7	16	14	16	15.3	1.2	11	12	10	11.0	1.0	14	18	16	16.0	2.0	19	17	16	17.3	1.5	17	18	15	16.7	1.5
ST28	10	3	9	7.3	3.8	17	17	19	17.7	1.2	14	13	14	13.7	0.6	15	17	17	16.3	1.2	18	20	14	17.3	3.1	16	18	14	16.0	2.0
ST29	8	2	5	5.0	3.0	19	14	19	17.3	2.9	17	17	15	16.3	1.2	16	18	16	16.7	1.2	16	16	15	15.7	0.6	13	16	13	14.0	1.7
ST30	6	2	3	3.7	2.1	19	18	17	18.0	1.0	16	16	13	15.0	1.7	17	17	16	16.7	0.6	15	18	13	15.3	2.5	17	18	14	16.3	2.1
X	10.1	4.4	8.1	7.5	3.0	16.8	15.4	17.7	16.6	1.6	14.8	14.9	13.6	14.4	1.0	16.7	17.5	15.5	16.6	1.6	16.8	17.3	15.1	16.4	1.8	15.6	17.6	14.9	16.0	2.0
SD	3.7	2.5	2.8	2.8	1.1	1.7	1.9	1.9	1.5	0.7	1.7	1.5	2.0	1.6	0.5	2.2	1.3	2.1	1.5	0.7	2.5	2.0	1.6	1.6	0.8	2.6	1.9	1.6	1.6	0.7