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Effects of Inquiry-Based Learning on EFL Students' Academic Writing Performance, Critical Thinking Skills, and Motivation

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BAHIR DAR UNIVERSITY
FACULTY OF HUMANITIES
DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

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By

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January 2021

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EFFECTS OF INQUIRY -BASED LEARNING ON EFL
STUDENTS' ACADEMIC WRITING PERFORMANCE,
CRITICAL THINKING SKILLS, AND MOTIVATION

A DISSERTATION SUBMITTED TO THE FACULTY OF HUMANITIES,
BAHIR DAR UNIVERSITY, IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

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ABSTRACT

This study aimed at exploring the effects of inquiry-based learning on students' writing performance, critical thinking skills, and motivation towards academic writing. A quasi-experimental design that employed time-series design with single group participants was used. A total of 21 EFL undergraduate students who took advanced writing skills course were selected using comprehensive sampling method. Tests, group discussion, and student reflective journal were used to gather data. The participants were given three argumentative essay writing pre-tests and other three argumentative essay writing tests before and after the intervention, inquiry-based argumentative essay writing instruction. While the quantitative data were analysed using one-way repeated measures MANOVA, paired samples t-test, and descriptive statistics, the qualitative data were analysed through narration. The findings revealed that using inquiry-based learning enhanced students' writing performance, critical thinking skills, and increased students' motivation towards writing. This method developed students' writing performance in terms of task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. Besides, it enhanced students' interpretation, analysis, evaluation, inference, explanation, and self-regulation skills which are the core critical thinking skills. It also increased students' motivation towards writing which includes efficacy, goal orientation, belief and affect about writing. Therefore, inquiry-based learning is suggested as a means to improve students' writing performance, critical thinking skills, and increase students' motivation towards writing. Thus, this study recommends researchers, teachers, and students pay due attention to inquiry-based learning in their academic journey.

Keywords: Inquiry-based learning, Writing performance, Critical thinking skills, motivation

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List of Abbreviations and Acronyms

The following list of abbreviations and acronyms is taken from this research paper.

CLT = Communicative Language Teaching

CT = Critical Thinking

CTs = Critical Thinking Skills

EFL = English as a Foreign Language

ELT = English Language Teaching

ESL = English as a Second Language

IELTS = International English Language Testing System

IBL = Inquiry-Based Learning

KWHL = Know, Want, How, and Learn

MANOVA = Multivariate Analysis of Variance

SPSS = Statistical Package for Social Science

TEFL = Teaching English as a Foreign Language

WP = Writing Performance

WPS = Writing Process Sheet

4E X 2 = Engage, Explore, Explain, Extend, Assess, and Reflect

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Inquiry-Based Learning (IBL) is the act of gaining knowledge or skills by asking for information. It is a discovery method that starts learning by posing questions, problems or situations rather than presenting facts directly to students. It involves students in making observations, posing questions, examining sources, gathering and interpreting data, proposing answers, explanations and predictions, communicating findings through discussion and reflection, applying findings to the real situation, and following up new questions that may arise in the process (Lee, 2014 and Marshall, 2013).

IBL emphasizes students' abilities to critically view, question, and explore various perspectives and concepts of the real world. It takes place when the teacher facilitates and scaffolds learning rather than gives facts and knowledge so that students are engaged in investigating, questioning, and explaining their world in a student-centered learning environment. Students learn through probing questions, exploring information, discussing their ideas, discovering solutions, and applying their findings in the real world (Owen, 2006).

The pedagogical view of inquiry-based learning fits with the philosophy of constructivism because in both educational ideologies, students learn through participating and sharing another person's point of view, and teachers take an interactive role with students in challenging them to exceed (Kaye, 2014; and Vygotsky, 1986). In the emergence of constructivism, early in the 20th century, a prominent shift has been made within the field of language education in which emphasis was given to the learner and learning rather than teacher and teaching (Gairns

2001) because constructivism allows students to construct their understanding and knowledge of the world through questioning, exploring and reflecting ideas. It promotes students to take an active role in making discoveries and to become interested in question, investigate, discuss, and share ideas. As components of constructivism, making discoveries, questioning, investigating, discussing, and sharing ideas are central points of inquiry-based learning.

Dewey (1938) who introduced the inquiry method in his book *Logic: The Theory of Inquiry*, views the experiences of each learner should come from within each learner, and each experience should motivate each student. Instruction should be student-centered grounded on what students already know and need the teacher to facilitate learning rather than lecturing (Arthur, 2004; Barrow, 2006; Hardin, 2009; Henson, 2003; Young, 2013). However, the history of inquiry-based learning goes back to Socrates questioning. Socrates stated that a person would learn not by being told, but being asked. It was through the reasoning process that the individual asked would come to a conclusion for himself (Mabisi Learning, 2018).

During the late 1950s and early 1960s, intending to produce more scientists, Bruner (1961) and Schwab (1960) played a large role to change the United States conventional teaching method to inquiry-based teaching (Abrams, 2008; Young, 2013). Thus, the works of Bruner (1961), Dewey (1938) & Schwab (1960) had a major influence on the implementation of inquiry-based learning in the United States. In advancing the pathway, the American Association for the Advancement of Science (AAAS, 1999) recommended science curricula to engage learners in inquiry-based learning. On the other hand, Haurin and Oh (1993) and Young (2013) stated that inquiry-based learning started in the 1950s, particularly in science education; when the space race with the Soviet Union was increasing the necessity for the development of a more intense

science curriculum. More specifically, Barrow (2006) and Sweetman, (2013) claimed inquiry pedagogy as instructional design has begun since the 1960s.

The pedagogical thought of inquiry-based learning is primarily investigated in social science classrooms. For this, there are research findings that showed inquiry-based learning activities had positive impacts on students' academic performance, critical thinking, and motivation (Bryant, 2006; Chang and Mao, 1998; Jarrett, 1997; Hardin, 2008; Kaye, 2014). For instance, Bryant (2006) found that students' academic achievement and motivation were higher in inquiry learning classroom. Besides, Arthur (2004) showed that students who learn using the inquiry-based learning established collaborative work, developed reasoning skills, built confidence in their ability to ask and answer questions, and made connections to other experiences. A quasi experimental study conducted by Wain and Ulmer (2010) also indicated that sixth graders had an effective academic achievement in inquiry-based learning than the conventional learning method. Similarly, Brune (2010) revealed that inquiry-based instruction had significant effects on students' ability to solve problems, and improved students' attitudes towards the course. These researchers revealed that using inquiry-based learning in science classrooms empowered students' academic achievement, reasoning skills, and motivation to learn.

Apart from social science classrooms, the effectiveness of inquiry-based learning in English language classrooms has also been researched by previous ESL/EFL researchers including (2014), Boudreau (2017), Ulfah (2012), Godbee (2016), Escalante (2013), Irawan et al (2015), Demircioglu & Ucar (2015), Ermawati et al (2017), Skills (2016), Palupi et al (2020), Sandra & Karen (2019), Rezeq & Elmassri (2019), Sihes et al (2014), & Nurtalina (2013). The studies

showed that inquiry-based learning is an analogy for communicative approach. It stresses discovery and learner cognitive development to be achieved using thoughtful questions.

The principles of inquiry-based learning are compatible with Communicative Language Teaching because communicative approach focuses on communicative proficiency rather than mere mastery of structure to develop learners' communicative competence as a goal of learning. Inquiry-based learning is, therefore, a form of CLT that works to bring down the general principles of communicative approach, and implement it in language classrooms in an inquisitive and discovery manner (Lee, 2004; Ong, 2007, & Richards & Rodgers, 2001). While communicative approach is an umbrella of various active language learning methods, inquiry-based learning is part of the active learning methods that drive learning through inquisition and investigation. Although there are various active learning methods under communicative approach, IBL can be possibly used as an alternative language learning method in fulfilling the gaps of other active learning methods through inquisition and investigation.

Besides, a study conducted in Weir College, USA to assess students' feedback on the effectiveness of inquiry-based teaching in second language pedagogy showed that the method enhanced students' classroom engagement, and reinforced students' understanding of the course material (Lee, 2014). Similarly, action research conducted on improving students' ability in writing through inquiry-based learning revealed that inquiry-based learning improved students' writing ability in content, organization, vocabulary, grammar and mechanics, and made students more confident, and developed their critical thinking skills (Usfah, 2012). In the same manner, Ash and Kluger (2012) also found that by using inquiry-based learning in writing lessons, students can develop critical thinking skills, and learn how to generate and organize ideas

through investigation and discussion to find out alternative ideas, and produce written papers.

The way of instruction used in inquiry-based learning also promotes communication, collaboration, creativity, learner autonomy, and using authentic activities that have personal meaningfulness and relevance to students (Baker & Darling-Hammond, 2010). Having interesting questions that involve students to seek information from various sources, collaborate with colleagues, organize and integrate information with their interests increase motivation and engagement (Wright, 2014). In line with this view, a study conducted in Canada by Wright (2014) indicated that inquiry-based learning increased students' motivation and engagement and develop students' critical thinking skills to become more autonomous learners.

Inquiry-based learning empowers students' critical thinking skills because it helps them to develop interpretation, analysis, evaluation, inference, explanation, and self-regulation skills which are the core critical thinking skills. Empowering critical thinking skills among students in higher education through the integration of critical thinking into the teaching process is essential to improve students' problem solving decision making and communication skills which are needed for their future careers (Abdullah, 2014; Adege, 2016; and McLean, 2005). Besides, Hilsdon (2010) also stated that critical thinking is the ability to ask and answer insightful questions in a most productive way to reach a comprehensive understanding. Critical thinking is to interpret, analyse, evaluate, infer, and explain situations or events with self-regulation (Facione, 2011; Hilsdon, 2010; Facione & Facione, 1994 & Paul & Nosich, 1992). The crucial feature in incorporating critical thinking skills in academic writing instruction is to involve students to learn with their inquisitiveness and learner autonomy (Banyapatana, 2006;

and Frisby, 1991). Academic writing and critical thinking are intertwined together with making an argument, evaluating and synthesizing sources, developing a voice or stance, and analyzing data. Writing is a vehicle through which students can express critical thinking, and that writing seems to be an expression of critical thinking when students are empowered to use critical thinking skills consistently in writing (Abdullah, 2014; and Dixon, Casady, Cross & Williams, 2005). Therefore, integrating critical thinking into the teaching of academic writing through inquiry-based learning is relevant to foster students' critical thinking skills as far as the skills are helpful in their future working areas.

In inquiry-based writing instruction, students are engaged in prewriting tasks through generating ideas, narrowing and clarifying a topic; exploring information from various sources; explaining their discoveries or concepts gained from the exploration, and elaborating their thinking through transforming their understanding into the real-world situation. Therefore, when students undergo this distinct writing process in manipulating such tasks, their ability to analyse, synthesize, and evaluate issues can be empowered because this process is intended to develop students' critical thinking and writing skills.

However, some research findings such as Caputo (2014), Clark et al (2013), and Firssova et al (2014) revealed that using inquiry-based learning was less effective to develop students' academic performance, critical thinking skills, and motivation. For instance, Caputo (2014) also revealed that inquiry-based learning is challenging for learners who may, for various reasons, react negatively to some key aspects of the approach, such as the use of process-based instruction, the requirement for learner independence, and the increased linguistic load put on students. Learners also felt uncomfortable with new or unfamiliar pedagogic approaches.

unprepared: consequentially, this emotional discomfort impeded their learning of the target language. The students also resisted instruction that encourages learner autonomy and developed further hostility when they felt that they were unsupported. Moreover, for students whose skills in the language of investigation were still developing, confronting the high communicative requirements of a certain inquiry can be frustrating. Caputo (2014) suggested allowing students to use their first language when engaged in more cognitively demanding and communicative aspects of inquiry-based learning. Besides, where teachers are not familiar with students' first language, it is also suggested to make learners aware of the benefits and difficulties of inquiry-based learning.

In the same manner, Clark et al (2013) also found that there was no indication that inquiry learning had any significant effects on the treatment group in terms of motivation or perceptions of critical thinking. This finding provided evidence that using the method in language classrooms was not effective in increasing student motivation. The group of students who received conventional fully guided instruction showed a significant increase in motivation because the control group was assigned topics to research so that their instruction could be fully guided compared to the treatment group. The treatment group's reading materials were less monitored because they were given autonomy in their search for resources.

As a result of the minimally guided instruction, the students feel frustrated and experienced a decreased motivation for learning. The students engaged in inquiry-based learning were asked to find their resources for research and may have felt ill-equipped to determine their value, while students engaged in fully guided instruction were given all of their information resources and asked to determine what information would best support their purpose. As a result, these

researchers suggested that inquiry-based learning is valid with explicit instruction rather than leaving students alone with no teacher support. Finally, in contrast to the present study, Firssova et al (2014) also investigated the effects of using inquiry-based learning on students' motivation, and revealed that the students had a general decrease of interest, rather than to boost of motivation

Therefore, it can be summed up that although most researchers revealed that inquiry-based learning developed students' writing performance, critical thinking skills, and motivation, some other researchers have reservations about its effectiveness. However, since the effectiveness of the method in the Ethiopian context is not studied yet, the present study was designed to investigate its effectiveness in the local context. Accordingly, this study was designed to examine the effects of inquiry-based learning on EFL students' writing performance, critical thinking skills, and motivation in Ethiopian EFL classroom context. This is because using inquiry-based learning can be helpful towards the improvement of Ethiopian ELT in general and writing skills in particular since the method follows a discovery approach where students themselves discover knowledge through posing questions; examining sources; gathering, analysing, interpreting, and synthesizing data; proposing answers and predictions; communicating findings through discussion and reflection; applying findings to the real situation, and following up new questions that arise in the whole inquiry process.

1.2. Statement of the Problem

Mastering the fundamental ideas of a certain field including English language learning incorporates grasping general principles, attitudinal development toward learning and inquiry, and solving problems on one's competence (Bruder, 1991). However, previous studies in English language instruction revealed that most students are less effective in their English language academic achievement generally and writing competence specifically (Abdullah, 2014; Bekele, 2011; Dawit, 2013; Hamid, 2010; Hamid, 2011; Harris, 2015; Mesfin, 2013; Mohamed, 2015; Muhaimeed, 2013; and Paul & Elder, 2007). Writing is a demanding task that challenges students to set goals, generate and organize ideas, and produce texts with appropriate language considering their readers (MacArthur, Philippakos, and Graham, 2016). A study conducted on essay writing difficulties of Egyptian students revealed that planning, organizing, revising, and editing are the main problems of English language students (Hamid, 2011). Similar research conducted on students' problems with cohesion and coherence on EFL students' essay writing in Egypt showed that the students encountered cohesion and coherence problems, difficulties in writing introduction, thesis statement, topic sentence, and conclusion (Hamid, 2010). Likewise, Mohamed (2015) also studied university students' writing problems in English language, and revealed that students in Sudan have various problems including usage and mechanical mistakes, like spelling, punctuation and capitalization, and lacked several writing development skills.

Besides, researchers such as Alago (2007), Goodwin (2014), Melles (2009), Wette (2010), Abdullah (2014), Paul & Elder (2007), and Cavdar & Doe (2012) showed that ESL/EFL students' critical thinking is plunging. Students are most commonly challenged to support their

arguments by referring to and synthesizing academic sources due to poor reasoning and unsupported claims. Especially, synthesizing sources is a complex task for second and foreign language learners to comprehend, paraphrase, and summarize written texts (Alagozlu, 2007; Goodwin, 2014). Evaluating and synthesizing sources into their writing are the elements of critical thinking that students find challenging to express their academic thought (Melles, 2009; Wette, 2010). Abdullah (2014) revealed that most EFL students have low critical thinking skills. Paul and Elde (2007) also stated that the conventional way of teaching, the product approach, is criticized for its inadequacy to prepare university graduates to deal with existing complex situations because students are assumed to develop critical thinking skills independent of books, lecture notes, and handouts. It also led students to learn with a lack of interest in topics, receive rather than think critically and search for knowledge, and arrived at broad generalizations. Conventional writing assignments often fall short of addressing problems in college students' writing as too often these assignments fail to help students develop critical thinking skills and comprehension (Cavdar and Doe, 2012). However, in learning situations where critical thinking is emphasized, students aim to understand ideas with the exploration of sources and follow new leads; learn with curiosity or interest of topics, and arrive at implications.

Also, lack of students' motivation to be engaged in academic writing is another problem that is identified in previous second and foreign language studies. A study conducted by Elliot (1995) revealed that students lack motivation to write in a foreign language because most of them assume that writing is a boring and complex task. Wright (2012) also states that students become unwilling to engage in writing tasks when they are unable to do the assigned task when

classroom instruction does not engage them. Similarly, they also become reluctant when they lack confidence to do the activities and lack positive relationship with the teacher.

Local researchers like Daniel (2004) and Dawit and Yalew (2008) stated that conventional teaching methods are still in use though teachers are expected to use active learning methods. The lecture method which is considered as the conventional method of teaching is used in colleges whose teachers usually focus on giving lectures, and students depend primarily on lecture where discovery is not encouraged. The current approach to teaching writing specifically did not mostly involve students to observe their environment critically, question issues, investigate problems, and create new knowledge (Ferris and Hedgcock, 2013; Graham, MacArthur; Fitzgerald, 2013, and Yip, 2014). This is to imply the need to promote inquiry-based learning which is based on a discovery approach that mostly involves students in seeking, collecting, analyzing, synthesizing and evaluating information based on students' interest. This is because using inquiry-based learning promotes students' academic performance and makes students active, problem solver, autonomous, and lifelong learners. However, in Ethiopia, it seems to have been a missing feature of the conventional method of English teaching in general and writing skills in particular.

Local writing researchers such as Alemirew (2005), Alemu (2004), Bekele (2011), Dawit (2013), Harris (2015), Italo (1999), and Mesfin (2013) confirmed that students face difficulties in writing due to several factors including poor writing instruction, and lack of adequate writing practice. They showed that college-level students' scores in writing tests are very low, and students are not able to meet expectations in writing tasks because of different reasons such as poor writing instruction. For instance, Harris (2015) conducted a study on the status and challenges of

teaching English language in the Ethiopian context at Hawassa University. His research findings showed that there were English language proficiency problems in English language students ranging from their ability of English language to their view of the language. In support of this claim, Dawit (2013) notes that university students' level of English is plummeting very dramatically. More specifically, Bekele (2010, p.16) stated:

Most university teachers mainly give notes, and sometimes models, and ask students to read the notes and produce a written text in line with notes or the model given. They do not seem to be familiar with emerging techniques and approaches that could make students more active, responsible, confident, and eventually successful.

Thus, the literature showed that existing teaching writing methods do not seem to be able to address the challenges of writing tasks that students are facing. Also, the current researcher's teaching experience confirmed that EFL students at Woldia University had writing pitfalls in writing clear thesis statements, providing evidence and identifying claims and evidence. They were also in difficulty to produce effective written texts that addressed achievement coherence and cohesion, lexical resource, grammatical range and accuracy. Likewise, the students were not on the way to improve their critical thinking skills in writing classes since their discovery was limited to lecture

In other terms, the students' papers were not adequately developed due to lack of interpretation, analysis, evaluation, inference, explanation, and regulation. As a result, the students were not adequately improving their academic writing performance and critical thinking skills using the conventional method of learning. This is because the students did not mostly engage in discovery of their writing topics, search for information, evaluate the collected information, write

up their texts based on the information they gathered, discuss with colleagues and experts, and produce their final text considering the given comments. Finally, the students were also less motivated to perform the given writing tasks since they were asked to develop texts on topics given by the teacher, which may not be interesting to them.

However, as far as the present researcher's knowledge is concerned, there are no local studies conducted to investigate the effects of using inquiry-based learning in an EFL context. The current researcher assessed locally available documents and internet sources and found that there is no local research addressing the issue. Therefore, the present study examined the effects of using inquiry-based learning on EFL students' academic writing performance, critical thinking skills, and motivation. Inquiry-based learning is hoped to improve students' academic writing performance, critical thinking skills, and motivation because the method focuses on the process of knowledge discovery that involves students in seeking, collecting, analysing, synthesizing, and evaluating information, creating ideas, and solving problems through communication, collaboration, deep thinking, and learner autonomy, and ultimately helps them to empower their motivation towards writing, critical thinking, and academic writing performance. Thus, this study is designed to fill this research gap by exploring the effects of using inquiry-based learning on EFL students' academic writing performance, and critical thinking skills, and motivation.

1.3. Objectives of the Study

1.3.1. General Objective

This study was aimed at exploring the effects of inquiry-based learning on students' writing performance, critical thinking skills, and motivation.

1.3.2. Specific Objectives

More precisely, this study was designed to:

- investigate effects of inquiry-based learning on students' academic writing performance.
- explore effects of inquiry-based learning on students' critical thinking skills.
- find out effects of inquiry-based learning on students' motivation towards writing

1.4. Research Questions

Based on the aforementioned specific objectives, the following research questions were formulated:

1. What are the effects of inquiry-based learning on students' academic writing performance?
2. What are the effects of inquiry-based learning on students' critical thinking skills?
3. What are the effects of inquiry-based learning on students' motivation?

1.5. Significance of the Study

This study could contribute to the field of foreign language education by possibly leading to a more effective language learning theory and methodology. The findings of the study may have applicable significance to ELT teachers to understand the nature and implementation of inquiry-based learning.

When teachers are trained and start to implement inquiry-based learning techniques in writing classes, it helps learners to develop their writing performance, critical thinking skills and motivation beyond what is expected in the conventional approach. In other terms, the study will indirectly benefit English language students from the effective implementation of inquiry-based learning to enhance their motivation, critical thinking skills, and writing performance to produce sound written texts.

The study can also serve as a resource for teaching material developers and curriculum designers to incorporate the elements of inquiry-based learning into teaching materials. Finally, the study can serve as a stepping stone for future researchers who will be interested in researching inquiry-based language instruction.

1.6. Scope of the Study

This study has both conceptual and geographical delimitations. Conceptually, among various types of inquiry-based learning models, the study mainly concerned with exploring the effects of the *f4E X 2*, Inquiry Model because this model is more inclusive than other inquiry models such as the *f3E*, *f5E*, and *f7E*, since it gives due emphasis to Engagement, Exploration, Explanation, and Extension with Assessment and Reflection compared to others. Besides, the writing performance that focused in this study incorporated task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. Likewise, critical thinking skills also include interpretation, analysis, evaluation, explanation, inference, and synthesis. The elements of motivation towards writing including students' self-efficacy, achievement goals, beliefs about writing, and affect about writing are also the concerns of this study.

Geographically, the study was conducted at Woldia University with 21 second undergraduate English language department students who were enrolled in the course Advanced Writing Skills, for the researcher have seen the problem while teaching the course. Therefore, it can be understood that this study focused on the *4E X 2* Inquiry Model, and conducted at Woldia University.

1.7. Limitation of the Study

The intervention was given for twenty hours to second-year undergraduate English Language and Literature Department students, at Woldia University. Hence, the time given to the intervention was relatively small. However, it does not mean that the intervention was completely inadequate since the students practiced the whole inquiry process repeatedly. It is to mean that the findings of the study would have been more convincing if more time to the intervention had been used.

1.8. Operational Definition of Terms

Academic Achievement: Academic achievement in this study is students' attainment in motivation, critical thinking skills, and academic writing skills.

Academic Writing : Academic writing is a formal, unbiased and consistent form of writing written for specific audience. It is clear, precise and focused. In addition, it is well structured and evidenced. Academic writing incorporates essay, journal article, lab report, senior essay, thesis, dissertation, etc. Academic writing in this study, therefore, refers to students' written essays.

Conventional Teaching Method: It is defined as an approach that emphasizes lecture-oriented instruction in which the teacher is the source of knowledge and students are the recipients, and mostly deny learners from discovery and deep thinking and understanding. In this study, the product approach to teaching writing is referred to as the conventional method.

Critical Thinking Skills: Critical thinking skills cover interpretation, analysis, evaluation, explanation, inference, and self-regulation. In the current study, students were ~~given~~ ^{given} writing lessons and tasks that enhance their ability to apply these critical thinking skills. Thus, when students' written papers realize interpretation, analysis, evaluation, explanation, inference, and self-regulation, it can be considered as ~~the~~ ^{students} have developed their critical thinking skills.

Inquiry -Based Learning: Inquiry-Based Learning is the act of gaining knowledge or skills asking for information. It is a discovery method of learning that involves students in making observations; posing questions; examining sources; gathering, analysing, interpreting, and synthesizing data; proposing answers, explanations and predictions; communicating findings through discussion and reflection; applying findings to the real situation, and following up new questions that may arise in the process.

Writing Performance: Writing performance is the ability to express ideas through writing. The writing performance in this study, is therefore students' ability to write argumentative essays that addressed task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy.

Motivation towards Writing: Motivation refers to the students' behaviour, willingness and preference for writing. It covers students' self-efficacy, achievement goals, beliefs about writing, and affect about writing that are the main elements of motivation to be involved in writing tasks.

CHAPTER TWO : REVIEW OF RELATED LITERATURE

2.1. The Concept and Historical Background of Inquiry -Based Learning

Inquiry-based learning is a form of active learning method that starts learning by posing questions, problems, or situations rather than presenting facts directly to students. It used small scale investigations, projects, and research. In the process of inquiry-based learning, students identify and research issues to develop their knowledge, and the teacher facilitates the process of learning. Inquiry-based learning developed during the discovery learning movement in 1960s as a response to teacher-centred form of instruction (Barrow, 2006).

The origin of inquiry-based learning goes back to Socrates questioning. It includes a friendly conversation with a partner in which one would ask a question, the other would answer, the first would question the other's reply, and so on. Socrates felt this process of asking, answering, and asking again would eventually allow students to distil their knowledge to a point of greater understanding (Wabisabi Learning, 2018). However, from the root of Socratic questioning, Dewey came with inquiry-based learning in early 20th century. Before Dewey, most educators viewed people learn best through direct instruction and by connecting new information to what they already know (NRC, 2000). Dewey is the first to challenge the sole use of this method by emphasizing the importance of experiential learning using scientific inquisition method to best prepare students for the future.

Dewey's experiential learning pedagogy invites students to actively participate in authentic experiences to make meaning. Inquiry can be conducted through experiential learning because inquiry values the same concepts, which include engagement to the content in questioning, investigating and collaborating to make meaning. Dewey proposed that science should be taught

as a process and way of thinking rather than memorizing facts. It is by getting involved in the construction of knowledge, by transferring ideas and opinions into beliefs through inquiry, does one ever get knowledge of the method of knowing,, (Dewey, 1910, p. 17).

Apart from Dewey, other theorists like Bruner and Schwab encouraged the teaching of science through engagement in inquiry to produce more scientists, during the late 1950s and early 1960s. Bruner (1961) argued that students should practice science to develop an attitude towards learning and inquiry (Abrams, 2008). Schwab (1960) views that science could be a flexible and multi-directional inquiry-driven process of thinking and learning rather than identifying facts. published articles on inquiry by supporting the teaching of science through inquiry-based learning (Young, 2013).

The philosophy of inquiry-based learning can be considered part of constructivism developed by Bruner, Dewey, Piaget and Vygotsky among others. Constructivism appeared early in the 20th century and emphasizes learning with the roles of culture, interaction, cognitive development, experience, and meaning-making. Constructivism encourages students to use their prior knowledge and experience to gain new knowledge and develop understanding (Moring, 2013, and Jeremy, 2014). Inquiry-based learning which fosters reasoning and problem-solving skills is embedded in the theory of constructivism (Hardin, 2009). The constructivist theory supports inquiry-based learning because the students are encouraged to actively and collaboratively involve in their learning by connecting prior experiences with new information (Ozmon and Craver, 2008). The learning process and knowledge construction of inquiry-based learning is a result of individuals' interaction in social settings. It means inquiry-based learning

lies in constructivism where discovery and collaborative learning are emphasized (Vygotsky, 1986).

Inquiry-based learning is the method of gaining knowledge through curiosity, developing questions, researching, and finding out answers to questions. It involves making observations; posing questions; examining sources to see what is already known; planning investigations; gathering, analysing and interpreting data; proposing answers, explanations and predictions; and communicating findings, applying to the real situation, and perhaps following up on new questions that arise in the process (Salovala, 2005). Students take responsibility for their learning by analysing and organizing their discoveries and communicating their findings. This type of learning is closely associated with the nature of scientific discovery, where learners inquire using their background knowledge and construct new knowledge using the inquiry process (Hardin, 2009 & NRC, 2000).

2.2. Inquiry-Based Learning Methods

In the view of constructivism in general and inquiry-based learning in particular, students come to class with their prior knowledge. Having this notion as a baseline, identification of students' background knowledge, how much it is accurate, is a key to the beginning of inquiry-based teaching-learning process (Reaume, 2011). The techniques or principles used in the process of inquiry-based learning are making observations; posing questions; examining sources; gathering, analysing, interpreting, and synthesizing data; proposing answers, explanations and predictions; communicating findings through discussion and reflection; applying findings to the real situation, and following up on new questions that may arise in the process.

multiple methods such as case studies, investigations, field works, individual and group projects, and research projects.

Considering these techniques as a common ground, there are specific instructional models for the application of inquiry-based learning. The most commonly used models are the 3E, 5E, 7E, and 4E X 2 model. Originally, Atkin and Karplus (1962) introduced the learning cycle (3E model) with exploration, invention, and discovery phases; later Bybee (2002) introduced the 5E instructional model, which includes Engagement, Exploration, Explanation, Elaboration, and Evaluation. Then, Eisenkraft (2003) added two more phases into the 5E model called Elicitation and Extension and designed the 7E learning cycle that includes Elicit, Engagement, Exploration, Explanation, Elaboration, Extend, and Evaluation. Considering the gaps in 5E and 7E models Marshall (2013) developed the 4E X 2 inquiry model incorporating four main phases, Engagement, Exploration, Explanation, and Extension with Assessment and Reflection.

2.3. Levels of Inquiry-Based Learning

Although some educators believe that there is only one true method of inquiry, which would be described as *open inquiry*, inquiry-based learning includes different levels of inquiry depending on the learning environment. While open inquiry may be the most authentic for inquiry, there are other low levels of inquiry that students should develop before this high level of inquiry (Marshall, 2013 & Smolleck et al., 2006). Therefore, researchers of the field have developed an inquiry continuum that classifies the process of inquiry-based learning into different levels from confirmation to open inquiry. Among various forms of inquiry levels, the most commonly used form is the four levels of inquiry instruction which incorporates confirmation, structured guided, and open inquiry. As Smolleck et al. (2006) state, the inquiry

level is determined by the students' and teachers' level of involvement in a given lesson or activity. The students' and teachers' involvement in each level of inquiry-based learnings is shown in figure 2.1.



Figure 2.1. Levels of Inquiry-Based Learning (Smolleck et al., 2006)

In the confirmation inquiry level, the teacher has taught a particular writing theme or topic. Then, he or she develops questions and procedures that guide students through an activity where the results are already known. Students are expected to confirm a principle through an activity in which the results are known. This method is used to introduce concepts to students, and to follow procedures, collect and record data to confirm and deepen understanding. In the second inquiry

level, structured inquiry, the teacher provides an initial question with an outline of the procedure by taking the solution away. Then, students investigate a teacher-presented question through a prescribed procedure. In guided inquiry which is the third level of inquiry, the teacher provides only the topic for students. Students are responsible to design and follow their procedures to investigate the teacher-presented question. In the last level of inquiry that is called ...open or true inquiry, the teacher facilitates situations for students to investigate their own questions. This means, students formulate their questions, design appropriate procedure, and follow through the developed procedure, and reached their conclusions, and implications (Schwab, 1960; Herron, 1971; Kiernan, 2015; Jeremy, 2014, and Alake, 2014).

Researchers like Banchi and Bell (2008) suggests that to develop students' critical thinking skills, teachers should begin the inquiry instruction from the lower level, and go ahead towards open inquiry because open inquiry activities are successful when students become more intrinsically motivated, and when they are equipped with the skills to formulate their insightful questions and appropriate procedures to follow. The current study also replicates this assumption and began the inquiry instruction from confirmation and proceed towards open inquiry to empower students' critical thinking and writing skills considering students' level of performance and motivation.

2.4. Effects of Inquiry-Based Learning on Motivation towards Writing

Motivation refers to the reason that underlies behavior that is characterized by willingness and preference. It involves a collection of closely related beliefs, perceptions, values, interests, and actions (Emily, 2011). Among various factors that influence motivation and engagement in a task, the main constraints of motivation to be involved in writing tasks such as self-efficacy,

achievement goals, beliefs, and affect about writing the focuses of this study (MacArthur, Philippakos, and Graham, 2016).

Self-efficacy is an individual's confidence in his or her ability to organize and perform a given task (Eccles and Wigfield, 2002). The current study uses self-efficacy scale for common essay writing tasks such as generating topics; strategies for planning, organizing, and revising, and editing (adapted from MacArthur, Philippakos, and Graham, 2016). The factor of motivation, concerned in this study, is the achievement goal which is related to reasons for engaging in a task. Achievement goals scale includes items for mastery, performance approach, and performance avoidance goals (MacArthur, Philippakos, and Graham, 2016). Students holding mastery goals are more likely than those holding performance goals to be involved in challenging tasks (Emily, 2011).

Beliefs about the nature of writing also affect students' motivation. Students, who believe that writing is a way to explore ideas, and devote more effort to writing than students who see writing as primarily a matter of producing text with correct conventions are more effective in writing (Graham, Schwartz, and MacArthur, 1993 cited in MacArthur, Philippakos, and Graham, 2016). The last important component of motivation, focused in this study, is students' affective response, liking or/and disliking to writing. Individuals who like to write may engage in writing tasks. Affect incorporates items such as liking writing and finding it satisfying (MacArthur, Philippakos, and Graham, 2016). In the improvement of students' motivation, therefore, teachers and researchers are expected to consider students' self-efficacy, achievement goals, beliefs about writing, and affect about writing and should use appropriate instructional strategies such as using collaborative learning, creating a supportive classroom environment, increasing student

autonomy and choice, focus on using verbal appreciation or praise than tangible rewards (Pintrich, 2003).

Emily (2011) suggests that teachers should attempt to give students more autonomy or control over their learning by allowing them to make choices and use collaborative or cooperative learning methods. Young (2013) also recommends teachers to use authentic activities that have personal meaningfulness and relevance to students because it provides students with a motivation to learn new concepts. Shu (2009) examined the outcome of an inquiry project completed by students in Hong Kong, and showed that students who learned in the inquiry method were more motivated and academically successful compared to students learned through the conventional approach.

In line with teaching writing specifically, Kizza (n.d) argued that the best writing tasks are those which are student-generated rather than teacher-generated where students develop their writing topics and assessment strategies. This can be done through brainstorming with students to compile writing topics, first as individuals, then in small groups, then class list. Finally, students can choose topics from the list to write their essays based on their choice of interest. Raffini, and James (1993) and Kizza(n.d) view that allowing students to experience choice, involving them in the structuring assignments, and making them feel responsible are powerful techniques to enhance their intrinsic motivation because choice and involvement lead to commitment (Kizza, n.d). In this study where inquiry-based learning is used; therefore, students pick out topics that are interesting to them; share ideas with friends, and finally, write essays on their choice. Such teaching writing method is intended to increase students' motivation (Edward, 1983).

2.5. Empowering Critical Thinking Skills through Inquiry -Based Learning

The concept of critical thinking is rooted in the work of Dewey (1997) who first discussed reflective thinking in his book *How We Think*. Dewey defines critical thinking as *reflective thought*, which he sees as a chain of thought that aims at a conclusion and requires inquiry. He states that reflection involves a consecutive order of ideas where each determines the next as its proper outcome, while each outcome in turn, leans back on, or refers to, its predecessors. Developing critical thinking is fundamental to education because it helps learners to be active citizens of the world. Critical thinking educators recommend teachers to improve higher education students' critical thinking skills because they find it a necessary outcome of 21 undergraduate education. Integrating critical thinking with current knowledge and empowering students' critical thinking skills is, therefore, essential to students to develop problem solving, decision making and communication skills which are needed in their future careers (Moore, 2004, and McLean, 2005).

Critical thinking scholars such as Borich, 2008 & Zaida, 2013 suggest some kinds of critical thinking skills as a framework to be incorporated in language classrooms. These skills are Comparing identifying similarities and differences of various elements, Classifying categorizing items based on their characteristics, Analysing, separating a whole into parts and understanding the interrelationships among those parts, causal, determining causes of events; Predicting, making inferences about effects of events, Evaluating, making judgments about something. These critical thinking skills, therefore, can be embedded in the process of inquiry based learning to teach academic writing because the skills can be incorporated in the inquiry based writing lessons.

The beginning of inquiry is questioning and the process of questioning implies an opened process. In writing essays, therefore, while students ask or/and answer descriptive questions including what, who, where, and when, it helps them to introduce their writing topic. When learners get into a more complex description and ask and respond to how, why, and what questions, they get into analysis like examining, reasoning, comparing and contrasting which are incorporated in the body part of an essay. Finally, when students ask and answer what is next, and so what questions, they evaluate thoughts, justify their position, and develop conclusion or/and recommendation which is the end matter of most academic written materials (Hilsdon, 2010).

The level of thinking depends on the level of questioning as long as the questioning leads to new perspectives (Ikuenobe, 2008, Lian, 2005). Further, it is concluded that the idea of the classroom as a dialogical community of inquiry depends mainly on the quality of questions raised by students and the teacher as the level of thinking is influenced by the quality of questions asked (Beyer, 2001). It is claimed that when students learn to ask their-thought provoking questions in and outside the classroom and provide explanatory answers, they are well on the way to self-regulation of their learning (Buranapatana, 2006).

According to Beyer (2001) and Buranapatana (2006), the ability to think critically is enhanced by engaging in questions that require critical thinking such as questions call for reason, judgments of relevance and accuracy, clarity of statements, and definition of terms. In the view of academic writing critical thinking is the ability to analyse a situation or text and make thoughtful decisions based on the analysis. Writers think through ideas, problems, and issues; identify and challenge assumptions; and explore multiple ways of understandings, and look for

evidence and reasons before accepting or believing whether something is true (Hillsdon, 2010).

2.6. Effects of Inquiry-Based Learning on Academic Writing Performance

Inquiry-based learning is suggested as a means to improve students' academic performance because the method incorporates active learning, critical thinking, logical arguments, and teamwork. Lin (2007) notes conventional teaching methods may be effective when the learning objectives are to achieve lower thinking skills like, to recall facts. However, inquiry-based learning is appropriate when deep discipline knowledge; higher thinking skills or strategies including reasoning skills; adequate motivational beliefs or attitude value are intended as learning outcomes. Similar studies reveal that students who learned in inquiry based methods score higher on assessments, improve their science process skills, and have more positive attitudes toward science (Gibson and Chase, 2012, and Kaye, 2014).

Researchers like Hillocks (1986) found inquiry-based mode of writing instruction has positive effects on students writing performance. This means that the teacher provides clear and specific objectives about the writing, chooses rich materials to engage students in the thinking that sits in the writing, and creates activities like small group problem-centered discussions that invite high levels of peer interaction. Inquiry-based writing instruction stresses ...learning writing by doing with little explicit instruction contrary to lecturing students on how to write.

2.7. The Theory and Classroom Application of Inquiry-Based Learning

The inquiry-based learning method, especially the 4E X 2 Inquiry Model, improves students' motivation, critical thinking skills, and academic writing performance. In the process of this 4E X 2, learning model in general, Assessment and Reflection are regarded as integrated elements to be implemented in each of the following four phases. In this means, students assess their performance and way of learning at every four steps, and reflect to colleagues, teachers, experts, and parents. The first stage of this model is the Engagement phase which sets out to generate students' interest and share their prior experience. The Initiation phase includes activating students' prior knowledge or probing students' conceptions. The teacher facilitates students to brainstorm possible questions, ideas and issues, to keep asking themselves, each other, and the teacher.

The role of questioning is to arouse students' interest and encourage responses as to what students know or think about the topic (Warner and Myers, 2014; Jewell, 2002; Owen, 2006, & Marshall, 2007). In the engagement phase, therefore, students visualize the whole inquiry process; determine topic areas for inquiry; discover possible information sources; identify audience and writing format; assess their engagement, reflect on it (Marshall, 2007). In the process of learning writing using this model, at the engagement step, students engaged in prewriting tasks using topic discovery Writing Process Sheets (WPS) which help them to activate their prior knowledge, and open questions for topic discovery (Edward, 1983). In other terms, students get started the learning process through generating ideas, narrowing and clarifying a topic using WPS that guide them to discover, choose, and clarify topic. (See Appendix • J).

In exploration, students think about the information they have and the information they need, and actively search for information from different sources related to their writing topic. They manipulate materials, make interviews and observations, gather evidence, and discuss with colleagues. Students explore or gather information on their writing topics from various sources with the help of WPS which guide them to discover and incorporate personal, social, and library sources (Edward, 1983). The teacher provides scaffolding by observing, questioning, and guiding. The students, then, think about the relevance of the information, evaluate the information gathered, and select the relevant information.

In the explanation phase, students are provided opportunities to show their understanding, process skills, or behaviours. They explain their discoveries or concepts gained from the exploration using their own words. Students interpret and analyse data, provide evidence, communicate ideas, and justify conclusions (Marshall, 2013). That means students organize the information gathered and create their written product considering their audience. They thoroughly write drafts by evaluating, selecting, combine, and synthesizing their collected data. The students compare, contrast, organize and sort, make connections of ideas, and draw inferences from their findings (Alberta Learning, 2004). They revise and edit their written product to make their creation clear, concise, consistent and appropriate for the audience. Students revise their drafts for unity, coherence, and completeness, proofread for mechanical problems (Edward, 1983). In doing so, students work with peers, teachers, and experts to enhance the written product with feedback. The teacher provides feedback about the strengths and weaknesses of their draft; comment on what things would further enhance the creation and why (Alberta Learning, 2004). The teacher introduces relevant concepts, principles, and theories

to help students develop a deeper understanding (Llewellyn, 2002; Dawit, 2013, and Warner & Myers, 2014). Incorporating the feedback gained from others, students complete their final creation or essay.

In the Extension or Elaboration stage, students are provided opportunities to elaborate their thinking, transfer learning to real-world situations beyond the school settings (Marshall, 2013, Alberta Learning, 2004). The extension phase helps students to set their conceptual understanding and develop a more permanent mental representation; thus, identify alternate explanations; create connections between new concepts, principles, and theories to real world experiences, and apply them to new situations. The teacher facilitates this entire process while students extend their learning into real-world situations. The application of this new knowledge provides an opportunity for students to move beyond memorization to a deeper understanding of what they have learned, and be lifelong learners. The assessment in the Extension phase is both summative and formative because students are required to assess the whole process of the inquiry learning, and at the same time, they need to think more deeply about their work and address weaknesses in the application of the new knowledge into the real-life situation. In this extended stage; therefore, students need to produce sound written materials or essays on real-life situations like what researchers and/or professional writers produce academic texts.

2.8. Theoretical and Conceptual Framework

2.8.1. Theoretical Framework

Inquiry-based learning is the methodology of constructivism. Constructivism is a theory of learning where students construct meaning through exploration. Inquiry-based learning is, therefore, a delivery system that makes constructivism happen. Constructivism is an educational philosophy based on the notion that humans develop knowledge and meaning when using their prior knowledge and current experiences in combination with their exploration, experimentation, and discovery.

The development of constructivism school of thought is greatly influenced by esteemed community of advocates such as Dewey, Piaget, Bruner, and Vygotsky. Dewey (1982) believed that when learners get involved in real-world practical activities than rote memorization, they tend to gradually construct their own meanings or knowledge of the world (Dewey, 1938, and Dewey, 1982). He notes that knowledge of the method of knowing is achieved when the learner gets involved in the construction of knowledge and transformation of ideas into beliefs through

inquiry (Dewey, 1910). He stated that inquiry is not something that takes place in one's mind alone, rather in a direct engagement of the world.

The other pioneer of constructivism called Piaget developed the theory of cognitive development. Piaget (1973) suggested that children deepen their understanding of the world by acting and reflecting on the effects of their prior knowledge. Bruner came up with the theory of discovery learning to constructivism which assumes learners generate knowledge by forming and testing assumptions (Bruner, 1961). Vygotsky developed social constructivism based on the assumption where social interaction and critical thinking are essential to learning (Liu and Chen, 2010). He also established the concept Zone of Proximal Development (ZPD), which is described as students have some skills to perform tasks independently, and lack some other skills that can be learned through assistance from a knowledgeable adult or more advanced learner (Jones and Bradbury, 2002; Llewellyn, 2005, Reaume, 2011, and Lister, 2015). Constructivism is; therefore, an educational approach to learning that requires students to construct their own knowledge through such as asking scientifically oriented questions and searching for evidence in responding to questions.

Asking scientifically oriented questions and searching for evidence are also the principles of the 4E x 2 inquiry model which is the theoretical framework of this study. The 4E x 2, (read as four E by two) inquiry model embraces a melting pot of constructivist ideas because it incorporated ideas that come out from constructivism (Gardner, 2012). Focusing on three major constructs of learning, the 4E x 2 model incorporates formative assessment, inquiry instruction, and reflection (Marshall, 2003).

Figure 2.2: Theoretical FrameworkThe 4E X 2, Instructional Model (Marshall, 2003)

The 4E X 2, inquiry-based learning model, shown in figure 2.2, includes four basic steps called Engage, Explore, Explain, and Extend with two inclusive elements named Assess and Reflect. The two constructs, assessment and reflection are considered essential and recommended to be integrated with each of the four phases of the inquiry learning process. Formative assessment encompasses feedbacks performed by teachers and students which can be used to the modification of the teaching and learning process. Students assess their learning using a KWHL chart by asking questions including, What do I "Know"?; What do I want to know?; "How" do I find out?, and What have I learned? (See Appendix J). Reflecting on the process is the core component of the 4E X 2 inquiry model and part of every phase. In reflection, students review their process of learning at the end of a lesson, day or week, and write in a journal or log about their feelings and strategies during the inquiry process; share with peers, teachers, parents, etc. Thus, the 4E X 2, learning model is the theoretical framework of the study under constructivism.

2.8.2. Conceptual Framework

The concept of this study was using inquiry-based learning through the $f(4E \times 2)$, instructional model to improve students' writing performance, critical thinking skills, and motivation.

Figure 2.3 Conceptual Framework

Source: Researchers Construct, 2018

Figure 2.3 shows the conceptual framework or the relationship between the independent and dependent variables of the study. The independent variable is the inquiry-based learning method, $f(4E \times 2)$, instructional model, situated in the center. The dependent variables are students' writing performance, critical thinking skills, and motivation which are positioned around the independent variable. The intended effects of the independent variable (IBL) on the dependent variables are shown with arrows pointing towards each dependent variable.

CHAPTER THREE : RESEARCH METHODOLOGY

3.1. Research Design

This study was aimed at examining the effects of inquiry-based learning on students' academic writing performance, critical thinking skills, and motivation. The research design of the study was quasiexperimental that employed a time series design with single group participants. Single group quasiexperimental design helps examine an effect a group of participants alleviates data contamination between different groups and controls other extraneous variables (Matowe et al., 2003). In this study; therefore, single group quasiexperimental design was used to investigate the effects of inquiry-based learning on students' writing performance and critical thinking skills.

Time-series design involves repeated observations before and after intervention. Especially, in interrupted time series analysis, the researcher makes multiple assessments of the dependent variables before the treatment in order to establish a baseline for comparison (Matowe et al., 2003). Then, the treatment, independent variable, is introduced followed by additional assessments of the dependent variables to determine whether the treatment altered the baseline of the dependent variables. Thus, in the present study, the participants were given a series of essay writing pre-tests before the intervention, inquiry-based writing instruction, and other similar series of essay writing post-tests. Finally, the results gained from the pre-tests and post-tests showed the effects of inquiry-based learning on the students' writing performance, critical thinking skills, and motivation.

3.2. Samples and Sampling Techniques

In the main study, a total of 21 EFL second-year undergraduate students who were enrolled in Advanced Writing Skills, course in the Department of English Language and Literature, Woldia University were selected using comprehensive sampling method. While most of the participants, 13 students (61.9%) were males, the remaining 8 participants (38.1%) were females.

Thus, it can be understood that the majority of the participants were males though gender is not the main focus of the current study. Besides the pilot study, 20 EFL second-year undergraduate students who were enrolled in Advanced Writing Skills, course in the Department of English Language and Literature, Bahir Dar University were also selected using comprehensive sampling method.

3.3. Data Gathering Instruments

In this study, tests, questionnaires, focus group discussion and student reflective journal were used to collect data on students' writing performance, critical thinking skills, and attitude.

3.3.1. Test

The test that comprises both pre-tests and post-tests was used to gather data on students' writing performance and critical thinking skills. Three consecutive argumentative essay writing tests were given to understand the students' existing writing performance and critical thinking skills. Likewise, other three consecutive argumentative essay writing tests were also given to determine the effects of the intervention, whether students' writing performance and critical thinking skills were improved. In other words, a total of six argumentative essay writing tests

were given to the students (See Appendix A-F). The tests were developed by the researcher considering the students' local context and their background knowledge.

The students' essays were scored using two rubrics that focused on academic writing performance, and critical thinking skills. The writing performance rubric used to evaluate the students' argumentative essays was adapted from British Council International English Language Testing System (IELTS) Writing Task 2 descriptors (2018) that incorporate Task Achievement, Coherence and Cohesion, Lexical Resource, Grammatical Range and Accuracy. Besides, the critical thinking skills rubric was adapted from Facione (2015), *What It Is and Why It Counts*, (from APA Report: Expert Consensus Statement on Critical Thinking) incorporating common critical thinking skills including interpretation, analysis, evaluation, inference, explanation, and self-regulation. The rubric is a four-point scale from one to four that refers to poor, good, very good, and excellent respectively (See Appendix M). Two experienced EFL university teachers marked students' argumentative essays independently based on the given criteria. Training on the use of the rubrics was given to the raters. Besides, inter-rater reliability was calculated for the raters. Hence, the Pearson's correlations (Pearson's r) reliability was 0.8 which implies that the test was reliable. The face and content validity of the tests were ascertained by EFL experts: two supervisors, and three university ELT teachers who were PhD students.

3.32. Questionnaire

The questionnaire was used to collect data on students' motivation toward academic writing. It incorporated a total of twenty-four items related to self-efficacy, ten; achievement goals, five; beliefs about writing, five, and affect about writing, four items because as MacArthur,

Philippakos, and Graham (2016) stated, these are the main factors that motivate students' motivation. (See Appendix -G). The questionnaire was adapted from MacArthur, Philippakos, and Graham (2016). While the nature of the questionnaire items was closed, they were used to gather quantitative data on students' academic motivation. The items were a five-point Likert type questions ranging from strongly agree to strongly disagree. The questionnaire was distributed both before and after the intervention. When the pre-intervention questionnaire was used to understand students' existing motivation towards academic writing before the intervention, the post-intervention questionnaire was used to see if there were changes in students' motivation towards writing after the intervention.

The validity of the questionnaire was ascertained by the two supervisors and three university ELT teachers who were PhD students. Besides, the reliability coefficient of the questionnaire items was calculated with Cronbach Alpha data analysis method. McMillan and Schumacher (1997) stated that Cronbach Alpha is the most appropriate method to check the reliability of instruments with several possible answers for each item, like a five-point Likert type question. The reliability coefficient of the questionnaire was 0.92 which indicates that it was reliable.

3.3.3. Focus Group Discussion

The focus group discussion was needed to gather qualitative data from the students to voice the effects of inquiry-based instruction on their learning. It was used to support the data gained from the test and the questionnaire regarding students' writing performance, critical thinking skills, and motivation. The validity of the focus group discussion items was ascertained by the two supervisors and three university ELT teachers who were PhD students.

The focus group discussion was conducted with eight randomly selected students. The students were asked to forward their views on the relevance of inquiry-based learning to enhance their writing performance, critical thinking skills, and motivation. Specifically, the discussion focused on the effectiveness of using inquiry-based learning on students' academic writing performance, critical thinking skills, and motivation. In addition, the students also discussed the benefits and challenges of using inquiry-based learning, and possible measures to be taken for the enhancement of the teaching-learning process (See Appendix H).

3.3.4. Student Reflective Journal

Reflective journal which is also known as diary analysis provides researchers to understand daily feelings, thoughts and experiences of participants (Donyai & Afshar, 2019). The student reflective journal, in this study, was used to collect qualitative data about students' feelings, thoughts, and experiences on inquiry-based writing instruction. This method was used to triangulate the data gained from questionnaire and focus group discussion regarding students' academic writing performance, critical thinking skills empowerment and motivation. The students' reflective journal was collected throughout the intervention to gain data on students' reactions while working on the inquiry-based writing tasks. Thus, a checklist was designed to guide students' reflection about the effectiveness of daily lessons, and ways which should be improved. (See Appendix I)

The student reflective journal has focused on the effectiveness of students' ways of learning writing skills, students' motivation towards academic writing, effectiveness of the teaching material used in the inquiry-based learning process, students' feelings on their capability to accomplish writing tasks, the contributions of the writing tasks to the development of their

critical thinking skills and writing performance, the major problems encountered in the inquiry based writing classes, and measures to be taken to alleviate the problems encountered. The validity of the student reflective journal items was ascertained by the supervisors and three university ELT teachers who were PhD students

3.4. Data Collection Procedure

Before the whole data collection process, the data gathering instruments including tests, questionnaire, student reflective journal items, and focus group discussion items were prepared. In addition, the teaching material was prepared before data gathering. Then, all the data gathering instruments and the teaching material were piloted at Bahir Dar University. Based on the pilot study, the necessary modifications like merging and deleting some redundant items were made to the data gathering instruments and the teaching material. Afterward, the main study was conducted at Woldia University.

As it is mentioned above, a teaching material used to teach argumentative essay writing skills was prepared using the literature following inquiry-based learning, critical thinking skills, and argumentative essay writing techniques. The teaching materials were developed in a way that enables students to make observations; pose questions; examine sources; gather, interpret, and synthesize data; propose answers, explain and predict; communicate findings through discussion and reflection; apply their findings to the real situation, and follow up new questions that arise in the process because these are the focuses of inquiry learning. In other terms, the teaching material specifically considered the steps of (4E X 2) Inquiry Model which include Engagement, Exploration, Explanation, and Extension with Assessment and Reflection. (See Appendix-J).

On the other hand, the teaching material was also developed in a way that enabled students to interpret, analyse, infer, evaluate, explain, and self-regulate which are the core critical thinking skills. In sum, the teaching material was prepared considering the components of inquiry-based learning and critical thinking skills. Likewise, the material also focused to enhance the students' writing performance in achieving their writing tasks, coherence and cohesion, lexical resource, and grammatical range and accuracy. As mentioned above, the data gathering instruments and the teaching material were piloted before the main study.

In the main study, first, the participants were given a pre-intervention questionnaire to determine their existing motivation towards academic writing. Following this questionnaire, three consecutive argumentative essay writing tests were administered to identify the students' critical thinking skills and writing performance before the intervention. Next to the completion of the pretests, the intervention was given by the teacher-researcher. When the intervention was given, the students' reflection journal was collected from the students.

After the completion of the teaching-learning process, the participants were given three consecutive argumentative essay writing tests which were identical (but not the same as the pre-tests). (See Appendix A-F). The posttests were needed to determine whether the inquiry-based writing instruction made improvements on students' critical thinking skills and writing performance. By the completion of the posttests, post-intervention questionnaire was distributed to determine whether there were changes in the students' motivation towards academic writing. Finally, the focus group discussion was also conducted with the selected participants to gather data on the students' academic writing performance, critical thinking skills, and motivation. By

the completion of the data gathering process, the data analysis was made using both quantitative and qualitative methods.

3.5. The Intervention

The intervention was an inquiry-based argumentative essay writing instruction delivered for twenty hours using the aforementioned teaching material by the teacher-researcher. In the teaching-learning process, the students were engaged in writing tasks including discovering their writing topics, discovering supportive information, discovering arrangements of ideas, discovering stylistic choice to write introduction and conclusion, using style to promote unity, specificity and coherence, and producing the final draft of their essays (See Appendix J). In other terms, the students discovered topics, explored data on their topics, elaborated their writing, and extended their learning into the real situation with integrated assessment and reflection. These phases were done in line with the four inquiry levels considering the students' level of understanding and ability to undertake the inquiry skills called asking questions, designing appropriate procedures to collect and analyse data, following procedures, drawing their conclusions, and implications.

The students performed their writing tasks in small groups, pairs, and individually. They mostly use the Think-Pair-Share active learning technique to think individually, work in pairs, and discuss in small groups. Accordingly, the students have practiced argumentative essay writing tasks using inquiry-based learning techniques. In the teaching-learning process, the teacher was facilitating the learning process in assisting the students to do their writing tasks. In other words, the teacher connected the topic to the learner, discussed and reflected on actions, and

students to probe questions, explore information, discuss ideas, discover solutions, and apply their findings in a real situation.

3.6. Data Analysis Methods

The data which were gathered through quantitative and qualitative data gathering methods were analysed in both quantitative and qualitative data analysis methods based on the nature of the data. The quantitative data which were gained through tests analysed with one-way repeated measures Multivariate Analysis of Variance (MANOVA), using the Statistical Package for Social Science (SPSS) version 26, the qualitative data were analysed through narration. According to Hinton, et al. (2004) in repeated measures MANOVA there are repeated measures on the dependent variable(s) with no grouping variable. Especially, one-way repeated measures MANOVA is used to analyse the effect of one independent variable on two or more dependent variables in a single group study. In the current study, one-way repeated measures MANOVA was used to show the effects of inquiry-based learning (independent variable) on students' critical thinking skills and writing performance (dependent variables).

Similarly, the questionnaire data were also analysed using paired sample t-test to compare the students' motivation before and after the intervention, using inquiry-based learning in their advanced writing skills course. The students' level of motivation was measured in four measurement criteria: self-efficacy, goal orientation, belief about writing, and affect about writing.

On the other hand, the qualitative data gained through student reflective journal, focus group discussion, and textual analysis were analysed through narration. Particularly, the textual

analysis was made on students' written essays to provide further evidence regarding the effects of using inquiry-based learning on the students' writing performance and critical thinking skills. Accordingly, sample pre-test and post-test argumentative essays written by the students were randomly chosen and analysed to triangulate the statistical findings presented on students' writing performance. The textual analysis has focused on students' writing performance and critical thinking skills. The textual analysis that focused on writing performance was made using British Council International English Language Testing System (IELTS) writing task descriptors (2018). The IELTS Task2 writing descriptor has four scales under nine bands. The four scales are Task Achievement, Coherence and Cohesion, Lexical Resource, and Grammatical Range and Accuracy. (See Appendix K). On the other hand, the textual analysis that focused on critical thinking skills was made based on the core critical thinking skills identified by American Philosophical Association Expert Consensus. The core critical thinking skills recognized by the experts are interpretation, analysis, evaluation, inference, and explanation (Facione, 2001). (See Appendix • M).

3.7. Ethical Considerations

This study, among other considerations, addressed the necessary ethical considerations such as voluntary participation, no harm to participants, no invasion of privacy, and no deception. In the beginning, all of the participants were informed about the purpose of the study. Then, the participants were provided with the opportunity to make autonomous and informed decisions regarding whether to participate in the study. Besides, the participants were also told that the research could lead them to possible improvements in academic writing and critical thinking skills. They were also informed that the study could bring possible influences on the teaching of writing. Understanding this opportunity, the participants took part in the study voluntarily.

They were reassured that their responses were treated as confidential and used for research purposes only. To keep the privacy confidential, names of participants were not asked throughout the tests, though some participants wrote their names on the test papers. However, their names were not mentioned in the research report; instead, randomly assigned codes were used in the data analysis. In other terms, anonymity and confidentiality of the given information concerning recordings and data were ensured.

When the study was conducted, there was no harm to the participants of the study. To put it in other words, the participants were not harmed or abused, both physically and psychologically, during the research. Rather, the researcher attempted to create and maintain a conducive learning environment that made the students learn freely and to acquire the skills unconsciously.

Finally, the sources used in this study were acknowledged appropriately, and facts and opinions were made clear. Therefore, in this study, necessary ethical issues were carefully considered and addressed at each phase of the study.

3.8. A Brief Report of the Pilot Study

The pilot was used to assure the reliability and validity of data gathering instruments. It involves small-scale testing of the data collection instruments, data analysis techniques and procedures that the researcher plans to use in the main study (McMillan & Schumacher, 1997).

The purpose of the piloting was to check if the research design that was proposed could be implemented the way it was planned. Besides, it was needed to check the reliability of the data gathering instruments. In this study; therefore, the data gathering instruments including test, questionnaire, student reflective journal and focus group discussion, and the teaching material were piloted.

Hence, to clear up any potentially arising problems during the period of the study, a pilot of the research design was done. For the sake of avoiding data contamination, the pilot study was conducted at Bhir Dar University, which is a different site from the main study. While the participants were 21 second-year undergraduate English Department students enrolled in an advanced writing skills course, the intervention of the pilot study was for twelve hours by the teacher-researcher. In order to assess the internal consistency of instruments, reliability analysis was calculated. Once the reliability and validity matters were maintained, the main study was conducted.

Lessons Learned from the Pilot Study

Based on the pilot study, some important insights were gained. Accordingly, modifications such as adding, deleting, and rewording of items were done to maximize the clarity of the instruments. For instance, a few items from the questionnaire were merged as they were redundant, and a few others were revised in terms of content and language. For instance, while item three and four were merged, item eleven and fifteen were revised. Apart from these, the opened items were later deleted for their similarity with focus group discussion items. See Appendix U. The reflection questions were first redundant and vague but then after receiving comments from supervisors, they were revised to make them easy to understand. Besides, some essay writing tests and focus group discussion items were not clear to the students. Thus, the instruments were modified accordingly. Modifications were also made to the teaching material since there were some confusing instructions and essays. For example, instructions given to write essays based on the local context was not clear, later it became clear while it was modified. In addition, further real model texts were also added into the teaching material. So, the teaching material was better detailed, and illustrations were also added so that the student could understand it. In sum, for the researcher, conducting the pilot study helped to check the instruments and to see the ability and manageability of writing tasks.

CHAPTER FOUR: RESULTS AND DISCUSSION

This chapter presents the results and discussion of the collected data. The data were gathered through tests, questionnaires, student reflective journal and focus group discussion the effects of inquiry-based learning on students' academic writing performance, critical thinking skills, and motivation

4.1. Results of the Study

4.1.1. Writing Performance and Critical Thinking Skills

This section presents the results on the effects of inquiry-based learning on students' writing performance and critical thinking skills. The data which were gathered through essay writing tests, focus group discussion and student reflective journal are presented respectively. Besides, sample textual analysis is also presented in this section.

4.1.1.1. Test Results on Students' Writing Performance and Critical Thinking Skills

The participants were given three argumentative essay writing pretests and other three identical, but not the same argumentative essay writing posttests to measure their writing performance and critical thinking skills before and after the intervention. Accordingly, this subsection presents the students' test results gained from the pre and posttests which were analysed using one-way repeated measures Multivariate Analysis of Variance (MANOVA)

Table 4.1 Descriptive Statistics: Students' Test Scores before and after the Intervention

Tests	M	SD	N
Writing Performance Pretest 1	36.86	2.869	21
Writing Performance Pretest 2	38.05	3.186	21
Writing Performance Pretest 3	38.62	3.500	21
Writing Performance Posttest 1	48.48	2.960	21
Writing Performance Posttest 2	50.24	3.330	21
Writing Performance Posttest 3	51.10	3.048	21
Critical Thinking Skills Pretest 1	33.14	1.957	21
Critical Thinking Skills Pretest 2	34.05	2.479	21
Critical Thinking Skills Pretest 3	34.67	3.152	21
Critical Thinking Skills Posttest 1	44.57	2.712	21
Critical Thinking Skills Posttest 2	44.90	3.048	21
Critical Thinking Skills Posttest 3	45.48	2.400	21

The descriptive statistics result presented Table 4.1 shows the potential differences of the students' test scores for both writing performance and critical thinking skills before and after the intervention. Accordingly, the mean and standard deviation of the students' writing performance test results before the intervention were (pre-test1, M = 36.86, SD = 2.869; pre-test2, M = 38.05, SD = 3.186, and Pre-test3, M = 38.62, SD = 3.500) which showed that the results have no significant differences. Likewise, the mean and standard deviation of the students' writing performance posttest scores were (post-test1, M = 48.48, SD = 2.960; post-test-2, M = 50.24, SD = 3.330, and post-test3, M = 51.10, SD = 3.048) which indicated that the results have no significant differences. From these test results, we can understand that the students' scores in the pretests were similar though there were some improvements. Likewise, even though there were some improvements, the students' scores in the posttests were also similar. However, when the mean scores in the pretests and posttests were compared, they have significant differences. In other words, the students' scores in the posttests were higher

than those of the pretests. It implies that the students' writing performance has been improved after the intervention, using inquiry-based writing instruction.

In the same manner, the table also showed that the students' critical thinking skills results before the intervention (pretest1, $M = 33.14$, $SD = 1.957$; pretest2, $M = 34.05$, $SD = 2.479$, and pretest3, $M = 34.67$, $SD = 3.152$) were comparable. Similarly, the students' critical thinking skills posttest meanscores (posttest1, $M = 44.57$, $SD = 2.712$; posttest-2, $M = 44.90$, $SD = 3.048$ and posttest-3, $M = 45.48$, $SD = 2.400$) were also similar each other. Thus, the critical thinking skills results indicated that the students' mean scores in the pretests have no significant differences though there were some improvements among the pretests. Likewise, the students' mean scores in the posttests have no significant differences though there were some improvements among the posttest results. However, when the meanscores in the pretests and posttests were compared, they have significant differences. In other words, the students' critical thinking skills posttest result meanscores were higher than those of the pretests. The results therefore indicated that the students' critical thinking skills have been improved when they used inquiry-based learning in their writing classes.

Overall, we could observe that the writing performance posttest Meanscores were greater than those of the pretest Mean scores. Similarly, the critical thinking posttest Mean scores were greater than those of the pretest Mean scores. As the two sets of students' scores (writing performance and critical thinking skills) were measured on different rubrics, it is inappropriate to compare the writing performance and critical thinking skills scores. However, it can be summed up that the intervention given to the students made differences in both writing performance and critical thinking skills posttest mean scores. Thus, it is possible to understand that the inquiry

based argumentative essay writing instruction has positive effects on the students' writing performance and critical thinking skills.

Table 4.2: Multivariate Tests Effects of IBL on WP and CTs, together

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Within Subjects	IBL Pillai's Trace	.995	208.993	10.000	11.000	.000	.995	2089.932	1.000
	Wilks' Lambda	.005	208.993	10.000	11.000	.000	.995	2089.932	1.000
	Hotelling's Trace	189.994	208.993	10.000	11.000	.000	.995	2089.932	1.000
	Roy's Largest Root	189.994	208.993	10.000	11.000	.000	.995	2089.932	1.000

a. Design: Intercept

Within Subjects Design: IBL

b. Exact statistic

c. Computed using alpha = .05

The main finding of the MANOVA test result is shown in the Multivariate Tests Table 4.2. The important information in the Multivariate Tests result is the Wilks' Lambda test statistic. As it can be seen in the table, the Wilks' Lambda test statistic is significant (.000), which would indicate that overall, there is a significant effect of inquiry-based learning on both dependent variables (writing performance and critical thinking skills). In other words, there was a significant effect of inquiry-based learning on students' writing performance and critical thinking skills ($F(10, 11) = 208.993$, $p = .000$, Wilks' Lambda = 0.005, $\eta^2 = .995$, observed power = 1.000).

Therefore, the result of the multivariate tests indicated that the use of inquiry-based learning in advanced writing classes had significant effects on the students' writing performance and critical thinking skills. Besides, the within-subjects effects also showed that the intervention had a significant effect on the dependent variables.

Table 4.3: Tests of Within Subjects Effects

Within Subjects Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^e
Pillai's Trace	1.079	23.410	10.000	200.000	.000	.539	234.100	1.000
Wilks' Lambda	.018	125.857	10.000	198.000	.000	.864	1258.567	1.000
Hotelling's Trace	47.866	469.083	10.000	196.000	.000	.960	4690.830	1.000
Roy's Largest Root	47.756	955.113	5.000	100.000	.000	.979	4775.565	1.000

a. Design: Intercept

Within Subjects Design: IBL

b. Tests are based on averaged variables.

c. Exact statistic

d. The statistic is an upper bound on F that yields a lower bound on the significance level.

e. Computed using alpha = .05

In the within subjects effects table, Table 4.3 the Wilks' Lambda row is the important information for the assumptions were met. As can be seen, the Wilks' Lambda test statistic (0.000) is significant since the sig. value is less than 0.05. In other terms, the ~~one~~ repeated measures MANOVA is statistically significant. Thus, it indicates that overall, there is a significant effect of inquiry-based learning on both dependent variables (writing performance and critical thinking skills). It showed that there was a significant effect of inquiry-based learning on students' writing performance and critical thinking skills ($F(10,198) = 125.857, p = 0.000$; Wilks' Lambda = .018, $\eta^2 = 0.864$, observed power = 1.000)

Table 4.4: Univariate Tests: Effects of IBL on WP and CTs, Separately

Source	Measure		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Time	WP	Sphericity Assumed	4717.111	5	943.422	569.852	.000	.966	2849.262	1.000
		Greenhouse-Geisser	4717.111	3.974	1186.906	569.852	.000	.966	2264.760	1.000
		Huynh-Feldt	4717.111	5.000	943.422	569.852	.000	.966	2849.262	1.000
		Lower-bound	4717.111	1.000	4717.111	569.852	.000	.966	569.852	1.000
	CT	Sphericity Assumed	3866.992	5	773.398	518.452	.000	.963	2592.259	1.000
		Greenhouse-Geisser	3866.992	3.510	1101.715	518.452	.000	.963	1819.752	1.000
		Huynh-Feldt	3866.992	4.349	889.238	518.452	.000	.963	2254.568	1.000
		Lower-bound	3866.992	1.000	3866.992	518.452	.000	.963	518.452	1.000
Error (Time)	WP	Sphericity Assumed	165.556	100	1.656					
		Greenhouse-Geisser	165.556	79.486	2.083					
		Huynh-Feldt	165.556	100.000	1.656					
		Lower-bound	165.556	20.000	8.278					
	CT	Sphericity Assumed	149.175	100	1.492					
		Greenhouse-Geisser	149.175	70.199	2.125					
		Huynh-Feldt	149.175	86.973	1.715					
		Lower-bound	149.175	20.000	7.459					

a. Computed using alpha = .05

The Univariate Tests result (Table 4.4) which shows each of the dependent variables individually also indicated that there were significant effects of the intervention on the dependent variables. The important rows in the table are the Sphericity Assumed rows because the MANOVA assumptions, including Mauchly's Test of Sphericity, were met. (See Appendix -R). Accordingly, the table indicated that there is a significant effect for the variable time on the two dependent variables, writing performance and critical thinking skills. It was found that there is a significant main effect for the factor *f*Time on the dependent variable WP (Writing Performance), $F(5,100) = 569.852$, $p < 0.05$, $f^2 = 0.966$, observed power = 1.000. Similarly, it was also found that there

is a significant main effect for the factor f_{Time} , on the dependent variable $f_{Critical\ Thinking\ Skills}$, $F(5,100) = 518.452$, $p < 0.05$, $f^2 = 0.963$, observed power = 1.000)

Table 4.5: Grand Mean Students' WP and CTs Scores

Measure	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Writing Performance	43.889	.639	42.555	45.222
Critical Thinking Skills	39.468	.526	38.371	40.565

The Grand Mean of the dependent variables shown in Table 4.5, depicted that the writing performance mean scores and Standard Error were larger than that of the critical thinking skills. Accordingly, while the Grand Mean and Standard Error of students' writing performance results, were ($M = 43.889$; Std. Error = 0.639), the critical thinking skills results were ($M = 39.468$; Std. Error = 0.526). However, as the writing performance and critical thinking skills rubrics were different, it was difficult to conclude that the students outperformed in their writing performance compared to their critical thinking skills.

Table 4.6: Estimates: Students' WP and CTs Pre and Posttest Scores

Measure	Time	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Writing Performance	Pretest1	36.857	.626	35.551	38.163
	Pretest2	38.048	.695	36.598	39.498
	Pretest3	38.619	.764	37.026	40.212
	Posttest1	48.476	.646	47.129	49.824
	Posttest2	50.238	.727	48.722	51.754
	Posttest3	51.095	.665	49.708	52.483
Critical Thinking Skills	Pretest1	33.143	.427	32.252	34.034
	Pretest2	34.048	.541	32.919	35.176
	Pretest3	34.667	.688	33.232	36.101
	Posttest1	44.571	.592	43.337	45.806
	Posttest2	44.905	.665	43.517	46.292
	Posttest3	45.476	.524	44.384	46.569

The estimates result in Table 46 also presents Standard Error rather than the Standard Deviation for the different conditions, unlike the Descriptive Statistics tables. As it is shown, the mean and standard error in the students' writing performance results before the intervention were (Pretest1, M = 36.857, Std. Error = 0.626; Pretest2, M = 38.048, Std. Error = 0.695, and Pretest3, M = 38.619, Std. Error = 0.764) which showed that the results have no significant differences. Likewise, the Mean and Standard Error in the students' writing performance post test scores were (Posttest1, M = 48.476, Std. Error = 0.646; Posttest2, M = 50.238, Std. Error = 0.727, and Posttest3, M = 51.095, Std. Error = 0.665) that indicated the results have no significant differences.

From these test results, we can understand that the students' Mean scores in the pretests were similar though there were some improvements. Likewise, even though there were some improvements, the students' Mean scores in the Posttests were also similar. However, when the Mean scores in the pretests and posttests were compared, they had significant differences. In other words, the students' Mean scores in the posttests were higher than those of the pretests. On the other hand, the Standard Error results in the pretest and posttest scores were most likely related. This implies that the students' writing performance was improved after the intervention, using inquiry-based writing instruction.

In the same manner, the table also shows that the students' critical thinking skills results before the intervention (Pretest1, M = 33.143, Std. Error = 0.427; Pretest2, M = 34.048, Std. Error = 0.541, and Pretest3, M = 34.667, Std. Error = 0.688) were comparable. Similarly, the students' critical thinking skills Posttest Mean scores (Posttest1, M = 44.571, Std. Error = 0.592; Posttest-2, M = 44.905, Std. Error = 0.665 and Posttest-3, M = 45.476, Std. Error = 0.524) were

also alike each other. Thus, the critical thinking skills results indicated that the students' mean scores in the pretests have no significant differences, although there were some improvements among the pretests. Likewise, even though there were some improvements in the posttests, the students' mean scores in the posttests were also similar. However, when the mean scores in the Pretests and Posttests were compared, they showed significant differences. In other words, the students' critical thinking skills post result mean scores were higher than those of the pre-tests. On the other hand, the standard error results in the pretest and posttest scores were most likely related. The results indicated that the students' critical thinking skills have been improved when they used inquiry-based learning in their writing classes.

As it is presented in the Tests of Within-Subjects Effects result (Table 43), the students' test scores showed differences based on time, but the differences in all times were not the same. Thus, in order to identify the difference among each of the test scores, it was necessary to see the pairwise comparisons (with Bonferroni adjustment) and paired samples t-test.

Table 4.7: Pairwise Comparison Students' WP and CTs Pre and Posttest Scores

Measure	(I) Time	(J) Time	Mean Difference (U)	Std. Error	Sig. ^b
Writing Performance	Pretest1	Pretest2	-1.190	.335	.030
		Pretest3	-1.762	.408	.005
		Posttest1	-11.619	.405	.000
		Posttest2	-13.381	.428	.000
		Posttest3	-14.238	.447	.000
	Pretest2	Pretest1	1.190	.335	.030
		Pretest3	-.571	.342	1.000
		Posttest1	-10.429	.356	.000
		Posttest2	-12.190	.400	.000
		Posttest3	-13.048	.341	.000
	Pretest3	Pretest1	1.762	.408	.005
		Pretest2	.571	.342	1.000
		Posttest1	-9.857	.421	.000
		Posttest2	-11.619	.485	.000
		Posttest3	-12.476	.476	.000
	Posttest1	Pretest1	11.619	.405	.000
		Pretest2	10.429	.356	.000
		Pretest3	9.857	.421	.000
		Posttest2	-1.762	.358	.001
		Posttest3	-2.619	.381	.000
Critical Thinking Skills	Posttest2	Pretest1	13.381	.428	.000
		Pretest2	12.190	.400	.000
		Pretest3	11.619	.485	.000
		Posttest1	1.762	.358	.001
		Posttest3	-.857	.326	.240
	Posttest3	Pretest1	14.238	.447	.000
		Pretest2	13.048	.341	.000
		Pretest3	12.476	.476	.000
		Posttest1	2.619	.381	.000
		Posttest2	.857	.326	.240
	Pretest1	Pretest2	-.905	.292	.085
		Pretest3	-1.524	.412	.021
		Posttest1	-11.429	.461	.000
		Posttest2	-11.762	.478	.000
		Posttest3	-12.333	.422	.000
	Pretest2	Pretest1	.905	.292	.085
		Pretest3	-.619	.327	1.000
		Posttest1	-10.524	.321	.000
		Posttest2	-10.857	.404	.000

	Posttest3	-11.429	.417	.000
Pretest3	Pretest1	1.524	.412	.021
	Pretest2	.619	.327	1.000
	Posttest1	-9.905	.358	.000
	Posttest2	-10.238	.308	.000
	Posttest3	-10.810	.388	.000
Posttest1	Pretest1	11.429	.461	.000
	Pretest2	10.524	.321	.000
	Pretest3	9.905	.358	.000
	Posttest2	-.333	.340	1.000
	Posttest3	-.905	.358	.300
Posttest2	Pretest1	11.762	.478	.000
	Pretest2	10.857	.404	.000
	Pretest3	10.238	.308	.000
	Posttest1	.333	.340	1.000
	Posttest3	-.571	.305	1.000
Posttest3	Pretest1	12.333	.422	.000
	Pretest2	11.429	.417	.000
	Pretest3	10.810	.388	.000
	Posttest1	.905	.358	.300
	Posttest2	.571	.305	1.000

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 4.7 displays the pairwise comparisons of the pretest and posttest scores. The pairwise comparison and the paired samples t-test carried out multiple comparisons between every possible combination of pairs for the conditions. Since the results gained from the pretest were similar, the Bonferroni adjustment was reported to avoid repetition. As was stated above, while the Tests of Within-Subjects Effects result showed that there was a significant effect of using inquiry-based learning, the pairwise comparisons result, Table 4.7, presented exactly which pairs of conditions were significantly different from one another.

In order to understand whether the comparisons were significant, it was necessary to look at the Sig. column (and the asterisks in the Mean Difference column). The p-value needs to be less than

.05 to be significant. Accordingly, the value of most comparisons was .000 in both writing performance and critical thinking skills results. However, the value of some comparisons under the writing performance test comparison including pretest1 and pretest2 (0.30); pretest2 and pretest3 (0.100), and posttest2 and posttest3 (0.240) were above 0.05. In the same vein, the p-value of some comparisons under critical thinking skills test comparison including pretest1 and pretest2 (0.085); pretest2 and pretest3 (1.000); posttest1 and posttest2 (1.000); posttest1 and posttest3 (0.300), and posttest2 and posttest3 (1.000) were above 0.05. It showed that these comparisons were insignificant. The remaining comparisons were less than 0.05 and there are asterisks in the Mean Differences column which shows that there were significant differences. Thus, it implied that even though there were test score differences among the pretests and posttests, the improvement was not that much high compared to the test score differences made between the pretests and the posttests.

Therefore, even though the students writing performance and critical thinking skills scores had shown improvements among the pretests and the posttests, the improvements were not that much high compared to the test score improvements made between the pretests and the posttests. In sum, based on these results, one can deduce that inquiry-based learning intervention improved the students' writing performance and critical thinking skills.

The Descriptive Statistics results showed that the students' Mean scores in the posttests were greater than those of the pretests which imply that the students' writing performance and critical thinking skills have been improved after the intervention, using inquiry-based writing instruction. In addition, the results of the multivariate tests indicated that the use of inquiry-based

learning in writing classes had significant effects on the students' writing performance and critical thinking skills.

The Within Subjects Effect also showed that there was a significant effect of inquiry-based learning on students' writing performance and critical thinking skills. The Univariate Tests result also indicated that there was a significant effect for the variable time on the two dependent variables, writing performance and critical thinking skills. Likewise, the Grand Mean of the dependent variables revealed that the writing performance meanscores and Standard Error were larger than that of the critical thinking skills. However, as the writing performance and critical thinking skills rubrics were different, it is difficult to conclude that students outperformed in their writing performance compared to their critical thinking skills.

As to the Descriptive Statistics results, the Estimates result also indicated that the students' Mean scores in the posttests were greater than those of the pretests, implying that the students' writing performance and critical thinking skills have been improved after the intervention, using the inquiry-based writing instruction. In the same vein, the pair wise comparisons result also showed that even though the students writing performance and critical thinking skills scores had shown improvements among the pretests and the posttests, the improvements were not that much high compared to the test score improvements made between pretests and the posttests. Therefore, the descriptive statistics and one-way repeated measures MANOVA test results revealed that inquiry-based learning had positive effects on the students' writing performance and critical thinking skills.

4.1.1.2. Textual Analysis Resultson Students' Writing Performance

The textual analysis of students' written essays was made to provide further evidence regarding the effects of using inquiry-based learning on the students' writing performance. Accordingly, sample pretest and posttest argumentative essays written by the students were randomly chosen and analysed to triangulate the statistical findings obtained from the students' writing test results

The textual analysis that focused on writing performance was made using British Council International English Language Testing System (IELTS) writing task descriptors (2018). The IELTS Task 2 writing descriptor has four scales under nine bands. The four scales are Task Achievement, Coherence and Cohesion, Lexical Resource, and Grammatical Range and Accuracy. Based on the analysis, the posttest intervention student written essays were better in terms of task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy compared to the pretest intervention student written essays. It indicates that the students had outperformed in the posttest after they used the inquiry-based writing instruction in their writing performance. Accordingly, the textual analyses showed that the students enhanced their writing performance in terms of task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy after using inquiry-based learning.

Pre-test-1 Essay of Student5

As can be seen in this essay, Student5 did not exhibit most of the good qualities of essay writing before the inquiry-based learning intervention. To put it in other words, the essay written by Student5 does not meet the IELTS Writing Task descriptors in terms of achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. The essay did not answer all parts of the task, did not extend and support ideas about the writer's clear position. It failed to incorporate referencing and had faulty sentences and mechanical linkage. The student used a limited range of vocabulary and sentence structures.

The essay was organized into four paragraphs, however 250 words, indicating that the text has met the minimum word requirement. However, the issues posed in the prompt were not discussed. It addressed the task only partially by discussing the merits of using Facebook. For instance, in the second and third paragraphs, it is stated that many people use Facebook for everyday activities to, deliver message, find missing friends or families, watch funny videos and urgent information, and make online shopping. It is interesting to present the advantages of Facebook using such examples. However, in such argumentative writing, it is essential to discuss both sides. In other words, the demerits of Facebook were not presented in this essay.

The student established a position but the development was not clear, and no strong conclusion was drawn. As can be seen in the essay, the student supported using Facebook, but the ideas were not clearly stated and supported. Besides, the essay had no clear concluding remark that could summarize the thesis statement. The essay presented some main ideas that supported the merits of using Facebook, but these were limited and not sufficiently developed. For example, in the third paragraph, it was stated that people who use Facebook are the happiest persons.

without adequate supportive ideas that could develop this main point. Thus, the main ideas were not well developed and there was a lack of focus on supporting ideas.

There was also a tendency to overgeneralize when the student stated *f*, without using Facebook our [life] will be difficult,,. Similarly, in the third paragraph was also stated *f* The people who use Facebook [are] the happiest person,,. Finally, in the same paragraph the writer noted that *f*, the most important thing in this earth is seating wherever you want , and use Facebook,,. It, therefore, showed overgeneralization which is not acceptable in academic writing.

The essay contained ideas that were not directly related to the main issue. For instance, in the last paragraph the writer noted: *f*, using Facebook is the best thing in my life, to live a better life, it better [to] use Facebook,,. This is related to the essay, but it didn't directly answer the question when presented in this way. In sum, though the essay showed the topic, it did not address the given task, lacked well supported relevant main points and had no strong conclusion.

The essay presented information and ideas, but these were not arranged coherently. For example, even though the advantages of Facebook were mentioned, they were stated here and there with no logical flow of ideas. It showed lack of clear development in the response. The essay was written in paragraphs, but its use was confusing to understand the main ideas. Thus, the ideas were not logically organized into paragraphs and lacked logical connections to the rest of the text. The text did not present a clear central topic in each paragraph. Apart from this, the vague central points had no adequate supportive ideas. The essay, in general, had poor paragraphing.

The student used some basic cohesive devices like and, also, so, and to size. However, most of them were inaccurate and repetitive. As can be seen in the essay, there was lack of using

cohesive devices to connect ideas and achieve coherence of thoughts. As a result, there were no obvious connections between each sentence and each paragraph. This essay was developed with no clear thesis statement that had no adequate supportive ideas. The body paragraphs had no clear topic sentences. The student used few cohesive devices and discourse markers to communicate ideas. Lastly, though the paragraphs had concluding ideas, they were repetitive and vague. From this, we can understand that the essay did not achieve the writing task descriptors particularly coherence and cohesion. It indicates that the student did not show good writing performance while writing his/her pretest 1 essay writing.

The essay was written with only a very limited range of words and expressions with very limited control of word formation. It did not use sufficient vocabulary to allow precision. As a result, the text was not easy to understand the message. Instead, very common lexical items were used. Moreover, there were frequent errors in spelling (like using and videos).

It was written with inappropriate vocabulary and poor paraphrasing, and the writing errors distorted the message. In addition, there was lack of words and phrases to develop ideas on the demerits of using Facebook. Therefore, this essay was not easy to read and did not convey a clear meaning. For this reason, the textual analysis showed that the student had writing deficiencies related to lexical resource before the inquisitive learning intervention.

Predominantly, the grammatical range and accuracy used in the essay were in question. The writer used only a very limited range of structures and only rarely used subordinate clauses. The paragraphs were mostly developed in simple sentences without using compound and complex sentences for variety. For example, sentences like Facebook is the best social media, around

the world,, and fusing Facebook is the best thing in my life,, are simple sentences taken from the text. Most of the sentences were also similar in structure.

Some structures were accurate, but most of the sentences were full of punctuation errors. The most serious writing faults that could hinder understanding the text were punctuation and capitalization. In almost all paragraphs, there were too long sentences which should have been broken up into a number of short and clear sentences. For example, paragraph three seemed a single sentence with eight lines since there was no punctuation mark except for the last full stop. Similarly, there were no capital letters that could help spot the beginning of sentences in this paragraph. As a result, it is hard to understand this paragraph. The remaining paragraphs had also similar problems. In the essay, different grammar tenses (such as conditionals, perfect, past, future, relative clauses, and modal verbs) were not frequently used to add sentence variety. Accordingly, the essay lacked sentence variety and good control of grammar.

In brief, the student mostly used incorrect grammar, punctuation and capitalization in this essay. It can be inferred that the student in the pre-test 1, had writing problems related to grammatical range and accuracy. In general, the textual analysis made of the pre-test-1 essay of Student 5 showed that the student mostly used inappropriate language and did not understand argumentation. Consequently, the analysis revealed that the student had no good command of academic writing (like task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy) before using inquiry-based learning.

The same student (Student 5), however, produced a better essay after the implementation of inquiry-based learning. Below is the essay that this student wrote after learning writing skills through inquiry-based learning.

Posttest-1 Essay of Student5

This essay which was developed by Student 5 after the intervention of inquiry-based learning revealed that the student showed improvements in terms of achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy compared to the essay written by the same student before the intervention. The essay was organized into five paragraphs with over 250 words supporting the view of Females' affirmative action should stop., It met both the minimum word requirement and the issues posed in the prompt. The essay addressed the necessary parts of the task, and the ideas were fully developed. It also presented a clear position throughout the essay.

The essay supported the thesis statement with relevant main ideas. As it was stated in the first paragraph of the student's essay, the thesis statement was mentioned as: "Even though people argue that females' affirmative action should not stop, I believe that this practice should legally stop because it reduces women's self-confidence, competitive power, and increases discrimination.,,. The three main ideas of each supportive paragraph are affirmative action reduces women's self-confidence, it decreases competitive power, and it increases discrimination clearly stated in the thesis statement. The main ideas of the essay were logically organized and discussed in separate paragraphs. Accordingly, the main points including reducing self confidence, decreasing competitive power, and increasing discrimination were discussed in the second, third, and fourth paragraphs, respectively. When the opinions mentioned in the essay were supported in the paragraphs, the supporting points were in line with the main ideas. It showed that the essay presented, extended, and supported the main ideas.

However, there was a tendency to overgeneralize when the writer stated: "Our society still has no good thought about women.,,, in the second paragraph. Likewise, the introductory paragraph

also overgeneralized that women were only being needed for house care and growing up children. These ideas were generalized as if it works the same to the whole society, which is not acceptable in academic writing. The ideas were well developed but there was lack of focus with some supporting ideas. For instance, it was stated that the essence of affirmative action goes to the past time and reminds racism that brings discrimination. Hence, the point related to racism was not described in detail and seemed to be far from the main idea of the paragraph. Besides, some ideas were not directly associated with the main argument. For example, in the essay the student mentioned: "As a woman, this practice makes me feel inferiority." This was related to the essay, but it didn't directly answer the question when presented in this way. In sum, the student in the post-test 1 essay has addressed the given task with clear thesis statement, well supported relevant main points, clear position, strong conclusion though it had some limitations.

The ideas in the essay were logically organized into paragraphs with clear main points and logical connections to the rest of the text. The text presented a clear central topic within each paragraph. The main points and supportive ideas in each paragraph could have flowed together throughout the essay to show clear progression. For instance, the first main idea mentioned in the second paragraph: "People claim that affirmative action gives women chance to get a better place, but in my view it reduces females' self-confidence," was clearly stated. In the same paragraph, two supportive ideas that were "adding some point to women in examinations," and "lack of good thought about women" were given and further explained to develop the central point of the paragraph: "Affirmative action reduces females' self-confidence."

In the same way, the second main point that was stated in the third paragraph reads that "affirmative action does not allow women to be competitive." This central idea was elaborated

with two examples that questioned why the required pass mark to girls is lower than required pass mark for boys in examinations, and why people wrongly deduce as females simply pass job interviews while there are many females who outperform males. Finally, the third central point mentioned in paragraph four stated that, the essence of affirmative action goes to the past time and reminds racism that brings discrimination. The remaining sentences in the paragraph were developed to support the main idea that affirmative action is used inappropriately for only females who are already in a good position. It shows that the essay had good paragraphing.

Besides, the writer used a range of cohesive devices or linking words like as a result, however, even though, but, like, for example, for instance, and, as, also, in addition, since, finally, so, in general, and thus appropriately. The writer also used reference such as this, that, those, and it. There were obvious connections between each sentence and each paragraph. However, some cohesive devices including and, but, for example, and like were overused. On the other hand, transitional sentences that connect paragraphs were rarely used in the essay.

All in all, the essay was developed with a clear thesis statement that related body paragraphs. Each body paragraph had a topic sentence that clearly stated the main point discussed throughout the paragraph. The rest sentences of each paragraph set forth the evidence supporting that main point. The student used a variety of cohesive features and discourse markers that could help communicate ideas clearly and logically. Finally, the main point of each paragraph was summarized at the end of each paragraph. It implies that the student showed writing performance improvements on the posttest 1 essay in terms of coherence and cohesion.

The essay was produced with vocabularies that were used naturally. In other words, it used a sufficient range of vocabulary to allow some flexibility and precision. Consequently, the text was easy to understand. In the essay, less common lexical items such as *crave*, *empower*, *legally*, *inferior*, *immoral*, *proving*, *competitive*, *racism*, *it's*, *declare*, and *seeker* were used with some awareness of style and collocation. Nonetheless, there were only occasional or rare errors in spelling (*affermative*, *inappropriate*, and *discrimination*), and word formation (such as *implys*, and *women who can undastand*).

It was most likely written with appropriate vocabulary and good paraphrasing. Besides, a range of words and phrases (like *opportunities*, *advantages*, *inferiority*, *competitive power*, *-self confidence*, *discrimination*, *house care*, *growing kids*, *lower pass mark*, *thought about women*, and *benefited over men*) that were appropriate for the topic were used to develop the essay. Therefore, the essay appeared to be reader-friendly since it had grammatically accurate and meaningful sentences. The student mostly employed a wide range of vocabulary precisely, appropriately, and accurately. It indicates that the student had often used words in their right context with the correct meaning and grammar. Consequently, this textual analysis showed that the student has improved his/her writing performance in terms of lexical resource.

The essay was most likely written with a range of sentence structures, proper use of tenses, right punctuations, simple as well as complex statements with clear ideas, and a good control over grammar. A variety of sentence structures like simple and complex structures were accurately and appropriately used. For example, sentences such as *f Affirmative action does not allow women to be competitive,,* and *f It shows that affirmative action reduces the competitive power of women,,* are simple sentences used in the essay. Besides, some other complex sentences including

Though affirmative action can have advantages in its right place, women these days are already as competitive, smart and strong as men,, and Even though people argue that females€ affirmative action should not stop, I believe that this practice should legally stop,, are also constructed in the text.

Different grammar tenses (like conditionals, perfect, past, future, relatives, and modal verbs) were used to make a variety of sentence structures. From the sentences that constructed with conditionals, If some points are added to women to pass a certain exam, like national examination, it indirectly implies that women are inferior compared to men,, can be taken as an example. The sentences like In ancient times, women were not accepted as equal as men,, and They were only being needed for house care and growing kids,, were formed with the past tense. Some sentences were also constructed with relative clauses. For examples, the sentences like The same feeling also happens in women who can understand this inappropriate practice,,, there are girls who work hard as boys,,, the women who are already in better places are being benefited over men due to affirmative action,,, and Such practice is a form of discrimination that the right people are not in their right place,, are formed with relative clauses. In addition, sentences such as I believe that this practice should stop,,, girls in rural areas, and maybe boys too, should get various opportunities,,, The same feeling also happens in women who can understand this inappropriate practice,,, and We could say that some part of the world still needs affirmative action,, were some of the example sentences that were developed with modal verbs.

There were also a variety of sentences that were formed with passive and active voices. Among various passive form sentences, women were not accepted as equal as men,,, They were on

being needed for house care and growing kids,,, and *f*Women are appreciated to work, learn, and empower themselves,, can be taken as examples. On the other hand, the active form sentences like *f*, affirmative action gives women chance to get better place, Our society still has no good thought about women,,,,, and *f*Women these days are already as competitive, smart and strong as men,, were also used in the essay. Lasting sentence structures that were formed with connectors (like as a result, in addition, finally, thus, etc.), coordinators (and, but, so, etc.), and subordinators (even though, as, that, if, since, because, etc.) were used in the essay.

Accordingly, the essay was developed with a variety of sentence structures, tenses, good control of grammar, and occasional grammar errors. Common grammar errors like articles, plural nouns, uncountable nouns, and word order were not frequently seen in the text. In other words, the student mostly used correct grammar, punctuation and capitalization in the essay. It implies that the student in his/her post-test1 essay has achieved better writing performance in terms of grammatical range and accuracy.

On the whole, the textual analysis made on the post-test1 essay of Student5 revealed that the student used appropriate language quite well in most situations and exhibited clear understanding of detailed argumentation. The analysis revealed that the student achieved good command of academic writing in particular with task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. Consequently, the textual analysis made on the pre-intervention and post-intervention essays of Student5 showed that using inquiry-based learning had enhanced the student's writing performance.

Pre-test-2 Essay of Student16

The above text is an argumentative essay written by Student before the implementation of inquiry-based learning. As can be seen in the essay, it was inadequate to the quality of a good persuasive essay. This is because the essay did not meet the IELTS Writing Task descriptors including task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. Initially, the essay showed the writer's clear position throughout the text that the student believed that smoking cigarettes should be legally abolished. However, it did not entirely fulfil all parts of the task achievement since the ideas were not well supported and extended. The text lacked to use referencing, and had faulty sentences and mechanical linkage errors. In addition, it also lacked to use a wide range of vocabulary and sentence structures.

The essay has minimally achieved task achievement. As it can be seen, the essay was developed into three paragraphs with around 185 words indicating that the text had not met the required number of words and paragraphs, which had to have above 250 words and four or five paragraphs. While the first paragraph seemed to be an introduction, the remaining two paragraphs were supportive ideas that contained the proponent and opponents separately. However, the essay was incomplete for it had no concluding paragraph. The proponent and opponent ideas posed in the prompt were not well treated in the text since it lacked adequate evidence.

The first paragraph of an argumentative essay is expected to present the argument clearly, but in this essay, it did not provide strong introductory information, and it had no clear thesis statement. The second paragraph of the essay discussed ideas about whether smoking cigarettes should be legally abolished. It is interesting to present supportive ideas to the proponents' point of view. However, the reasons presented in support of the proponents' view were not clear and convincing. For instance, the writer noted: 'I have many reasons for saying smoking cigarettes

should be legally abolished. because family can control their children 100% they can not see them every place. Smoking cigarette affects Manages,,. This idea seemed to be a reason forwarded to support the argument that smoking cigarette should be legally abolished,, but it had sentence faults and was not convincing. In addition, the student also mentioned: f smoking cigarette affects our helth allso our breathing system. for smoking cigarette we will waste a lot of mony so that is bad,,. Similar to the above idea, it also lacked clarity of sentences that were not strong to persuade readers. At the end of the second paragraph, the student mentioned f we had our mind adopted the cigarette If we lost that thing our mind will be abnormal,,. As can be seen, this sentence is difficult to understand since it had writing problems. Thus, one can deduce that no adequate evidence was given to convince readers the claim that smoking cigarette should be legally banned

The third or the last paragraphs of the student's essay presented supportive ideas to bolster the main idea: f Smoking cigarette should not be legally abolished,,. However, it had no strong reasons and evidence to convince readers that smoking cigarette should not be legally abolished. To substantiate it with examples, the student stated f finally, some people say that smoking cigarette should not be legaly abolish. They say If It affect our self we dicied by our self. It is our human right,,. The idea given in these faulty sentences seemed to support the opponents' perspective that smoking cigarette should not be legally abolished, but it was difficult to understand the main point. Also, it was also mentioned f If some one wants to smoke he/she can smoke. they know It affect their selfs. so they say smoking cigarette should be legally abolished. In the same manner, these choppy sentences were not clear and strong to convince readers and convey the opponents' point of view. Therefore, it is possible to say that the essay

had no adequate and strong reasons and evidence to persuade that smoking cigarette should not be legally abolished. As was stated above, the essay was incomplete for it had no concluding paragraph that summarizes the main points of the essay.

The student has expressed his/her position but the development was not clear and there was no conclusion drawn. In other words, the writer supported that smoking cigarette should be abolished, but the ideas were not well stated and supported. The essay presented some main ideas that supported the argument for smoking cigarette should be legally abolished,, but these were limited and not sufficiently developed. The student responded to the task initially and vaguely. The format used to organize the essay was also inappropriate for it lacked a concluding paragraph. The writer presented his/her position but this was not well supported. Some main ideas were presented, but they were difficult to identify. In sum, though the essay clearly showed the writer's position, it did not address the given task, lacked well supported main points, and had no strong conclusion.

In terms of coherence and cohesion, the essay presented ideas but these were not arranged coherently. Even though there were some choppy sentences about smoking cigarette should be legally abolished, they had no logical flow through the essay. Similarly, there were also some other sentences which were given to support claim that smoking cigarette should not be legally abolished, but the sentences lacked clarity and logical flow. Therefore, indicates that there was lack of strong progression of ideas through the text. Though the essay was written in paragraphs, it was confusing to read and understand the main ideas of paragraphs. Thus, the sentences were not logically organized and lacked logical connections among themselves. Each paragraph had no clear topic sentence and lacked adequate supportive ideas.

The student used a limited range of cohesive devices ~~as~~ because, also, and finally. However, even these used cohesive devices did not indicate a logical relationship ~~ideas~~. In other words, there ~~was~~ lack of using cohesive devices to connect sentences and achieve the coherence of ideas. The ~~writer~~ ~~used~~ insufficient cohesive devices and discourse markers to communicate ~~ideas~~. As a result, there ~~were~~ no noticeable connections between ~~each~~ sentence for the student ~~who~~ did not organize ideas logically. The text lacked to have ~~a~~ clear thesis statement and ~~adequate~~ supportive paragraph ~~Besides~~ the body paragraphs had no clear topic sentences. Finally, though the paragraph ~~had~~ concluding ideas, they ~~were~~ vague. It implies that the student did not achieve coherence and cohesion in his/her essay ~~to~~ ~~sp~~ ~~2~~

This text was developed with ~~only~~ a limited range of words and expressions with limited control of word formation and spelling. It did not use sufficient vocabulary to allow precision. As a result, the text was difficult to understand for many ~~errors~~ ~~severely~~ distorted the message. In the ~~essay~~, very common lexical items were used. Moreover, there ~~were~~ frequent errors in spelling and capitalization as can ~~been~~ in the essay. Besides ~~adequate~~ words and phrases ~~were~~ used to develop ideas that smoking cigarette ~~should~~ be legally abolished. Consequently, the essay was difficult to understand and ~~convince~~ readers of the given reasons and evidence. It, therefore, indicates that the student in his/her ~~pre~~ ~~2~~ had writing problems regarding lexical resource.

The grammatical range and accuracy used in the ~~essay~~ mostly demanding because the student had frequent sentence faults. The student ~~written~~ sentence forms that could distort meaning as they were full of errors in grammar, punctuation, and capitalization. The essay lacked sentence variety and good control of grammar. It ~~showed~~ that the student had writing challenges in grammatical range and accuracy. Altogether, the textual analysis revealed that

Student16 had mostly used inappropriate language and did not understand the argumentation while writing the essay for pretest2. Consequently, it is possible to conclude that the student had no good command of academic writing (in terms of task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy) before the implementation of inquiry-based learning. Nevertheless, after the intervention of inquiry-based learning, this student (Student16) had drafted a better text as shown below.

Posttest-3 Essay of Student16

The above essay that was developed by Student 16 after the implementation of inquiry-based learning in writing classes presumably shows improvements in task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy compared to the essay written by the same student before the intervention. To begin with the achievement task of achievement, the essay was drafted into five paragraphs using 250 words in favour of the argument 'Universities should control their students' way of life,,. Hence, the essay met the minimum word requirement, and the main issues posed in the prompt were also discussed. It addressed the necessary parts of the task because the ideas on both sides were developed in a good manner. The writer's position was also clearly presented throughout the text.

The student has presented the thesis statement of the essay as can be seen in the introductory paragraph. The main ideas which developed the thesis statement were also logically organized and discussed in the essay. Accordingly, the main points that strengthen the proponent's point of view were introduced in the first paragraph and mainly presented in the second and third paragraphs. For instance, it was mentioned that 'university students are not kids that need care and control of others; rather they are matured enough to control themselves,,. Besides, the writer also specified: 'People argue that the students identify what is useful and harmful to them, and they can perform what they want, Moreover, the student noted: 'The opponents assume that students should be free of control to taste the real world early before they graduate and directly go into the society,,.

In the same way, the proponent's thoughts were also supported with sufficient reasons in the essay. For example, it was pointed out that even though university students are not kids, they are adults, who want to test and do many things that are either important or not. In addition, it also

further elaborated as if university life, there are various internal and external influences like peer pressure that initiated students to do unnecessary things including drinking alcohol, chewing chat, smoking cigarette, being commercial sex worker, etc. The student strengthened this idea when it is noted that the students need to be advised and punished when following bad directions that negatively affect the students' life, their families and country. Moreover, the student backed this standpoint as university students are adults, who are able and need to pass more time in entertainment places than to make them pay less attention to their education. Thus, these supportive sentences or reasons given to the proponent and opponent views are in line with the main ideas.

However, it seems that the opposing side of the argument was loosely stated because the reasons and explanations given to this view were not as detailed as that of the proponent's view. To put it in other terms, the proponent's point of view that the writer claimed was strongly argued in the essay compared to the justification given to the opponent's outlook. Accordingly, there was a tendency to be biased on the argument when handling the two opposing points. Hence, such way of writing minimizes the quality of the text as long as it is academic writing. Student 16 in this essay had addressed the given task with clear thesis statement, supported relevant main points, clear position, and strong conclusion though the student had some limitations in treating the opponent's view.

The student had logically organized ideas into paragraphs with clear main points. The main ideas and supportive sentences in each paragraph flow smoothly throughout the essay to show progression. As can be seen, the first paragraph introduced the point of the argument with a clear informative statement that appraises readers that universities are responsible to produce graduates,

who are knowledgeable, ethical and responsible. It also stated that universities should control their students to produce such graduates although there are people who are opposed to the claim. Thus, it showed that the main topic of the argument has been introduced in the introductory paragraph. The first main idea with its supporting sentences and rebuttal ideas were presented in the second paragraph. It was mentioned that: "opponents argue that university students can identify what is useful and harmful to them, and they are able to perform what they want". Following this, its rebuttal ideas and some further explanations were also given in the same paragraph. This point of view was disproved in the essay when the student pointed out that "even though such students are matured and have their own choices, the students need to be advised and punished when they follow bad directions that negatively affect their own life, and later proceed to socioeconomic impacts on their families and country". Furthermore, this reason has been substantiated with practical examples that university students faced various internal and external factors like peer pressure that initiate them to do unnecessary things such as drinking alcohol, chewing chat, smoking cigarette, and being commercial sex worker.

By the same token, the second main idea was stated in the third paragraph with its explanation and refutation. Here, it was mentioned as "opponents assume that students should be free of control to early taste the real world before they graduate and directly go into the society". This claim is disproved in the essay when the student stated that "although making students free to get real-life experience is important, controlling them is also equally needed to shape their wrong doings". The writer added that as long as university students are adults, who are age-fit, there are such students who need to pass more time at entertainment places, and pay less attention to their education. While the student asserted this point by forwarding that if the students are not

controlled, they can be added, misbehaving, unethical, and dishonest that can make them either dependent on their family or dangerous to one's country. Therefore, we can understand that the supportive paragraphs are organized with relevant ideas.

Besides, the student has summarized the whole idea of the essay and presented it in the concluding paragraph. Hence, it was noted that when students are controlled in their university stay, they can become successful in their education, and discover many things that provide services to society. The writer also mentioned that if universities effectively control the students, the graduates can come up with various practical solutions for social, economic, and political challenges. Moreover, the student forwarded that such controlled graduates can be globally competitive in various discoveries like science and technology.

Finally, the concluding paragraph was closed with a question: "Do not you think that universities should control their students' way of life for the benefit of students, parents, and the country at large?," concluding essays with such questions can be interesting to readers since it leads them to take time and think over the argument for their better understanding. Accordingly, it is possible to claim that the student has achieved this achievement, which is one of the essay writing qualities.

The second focus of the textual analysis is coherence and cohesion that concerns whether the writer used adequate and appropriate cohesive devices in the text. In this regard, the student used a range of cohesive devices or linking words such as, either, or, like, in addition, also, however, as long as, even though, in order to, though, otherwise, if, since, when, hence, so, thus, and in conclusion properly. In addition, the student also used reference words such as this, that, their, they, and these in the essay. Obvious connections between sentences and each paragraph

were also made in the text. However, some cohesive devices including but, and like were over-used while transitional sentences that would connect paragraphs were infrequently used. So, one can see that the essay was developed with a clear thesis statement that has related main ideas. The body paragraphs had clear topic sentences that were well developed with supportive sentences. The writer used a variety of cohesive features and discourse markers that communicate ideologically. The main points of the supportive paragraphs were also summarized at the end of the paragraphs to draw the conclusion. It can be, therefore, inferred that Student 16 had a good performance of coherence and cohesion on test 3.

In the third place, the text was written with vocabularies that were used in a natural way which indicates that the writer had good writing performance in lexical resources after using inquiry based learning. The writer has used a sufficient range of vocabulary to show flexibility and precision. For instance, less common lexical items such as alumnae, peer pressure, real life, restrict, harmful, matured, taste, shape, large, extended, combat, discover, and competitive are used with some awareness of style.

The essay was presumably written with appropriate vocabulary for a range of words and phrases that were appropriate to the topic are used. For instance, suitable words and phrases (including responsible, peer pressure, internal and external influence, harmful practices, practical rules and regulations, wrongdoings, education, student controlling mechanisms, pass extended leisure times, good citizens, addictive, misbehaved, unethical, and dishonest, social, economic, and political challenges) were incorporated in the essay. Hence, the writer often used a wide range of vocabulary precisely, appropriately, and accurately. However, there were only infrequent errors in spelling (knowledgeable, harmful, entertainment, and unethical). In general, since the student has

often used words in their right context, the text was clear and understandable. Consequently, the textual analysis revealed that the student was good at lexical resource

Finally, the essay was well in grammatical range and accuracy. It was drafted with a range of sentence structures, proper use of tenses, right punctuations, and simple as well as complex statements with clear ideas and control over grammar. In other words, a variety of sentence structures like simple and complex structures were accurately and appropriately used. To substantiate it with examples, the sentences "These students need to be shaped in their university stay" and "Graduates can be globally competitive in various discoveries like science and technology" were simple sentences used in the text.

Besides, some other complex sentences such as "Though making students free to get their own experience is important, controlling them is also equally needed to shape their wrong doings," and "When students are controlled in their university stay, they can become successful in their education, and discover many things that provide services to the people of the country," were also used in the essay. Different grammar tenses (like conditionals, perfective clauses, and modal verbs) were used to make a variety of sentence structures. Among the sentences that were constructed with conditionals, "If the students are not controlled, they can be addictive, misbehaved, unethical, and dishonest," can be taken as an example.

Some sentences were also constructed with relative clauses. For example, sentences like "University students are adults, who want to test and do many things which are either important or not," and "The graduates can be ethical personnel who can combat racism and corruption," were formed with relative clauses. In addition, sentences such as "Universities should control their students' way of life with strong rules and regulations," "They can be either dependent on

their family or dangerous to one's country,, and fThey can also come up with practical solutions for their country's social, economic, and political challenges that improve the citizens' quality of life,, were constructed with modal verbs. There were also a variety of sentences that were written with passive and active voices. Amongst the passive form sentences used in the texts, fThe students need to be advised and punished when they follow bad directions that negatively affect their own life,, and fThese students need to be shaped in their university stay,, can be taken as examples.

On the other hand, the ~~act~~ form sentences like fThere are such students who need to pass more time in entertainment places, and pay less attention to their education,, and fThe graduates can be ethical personnel who can combat racism and corruption,, are also used in the essay. Finally, various sentence structures ~~there~~ were formed with connectors (including ~~ing~~ addition, as a result, finally, thus, etc., coordinators (but, and, so, etc.), and subordinators (though, even though, as, that, if, since, because, etc.) were used ~~in the t~~

Therefore, one can understand that the essay ~~was~~ developed with a variety of sentence structures, tenses, good control of grammar, and occasional grammar errors. On grammar errors like articles, plural nouns, ~~countable~~ uncountable nouns, and word order were not frequently seen in the text. In other terms, the writer often used correct grammar, punctuation, and capitalization in the essay. It suggests that the student ~~this~~ /her posttest3 essay has achieved better writing performance in grammatical range and accuracy.

Generally, the textual analysis conducted on the ~~post~~ test3 essay of Student16 showed that the student used appropriate language in most situations ~~showed~~ a clear understanding of detailed argumentation. Accordingly, Student16 had achieved a good command of academic

writing in particular with task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy after using inquiry-based learning. All in all, the results of the textual analysis made on the students' pre and post essays revealed that the students had outperformed in the post essays compared to the pre essays in their writing performance including task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy due to using inquiry-based learning.

4.1.1.3. Focus Group Discussion Results on Students' Writing Performance

In support of the textual analysis, the focus group discussion results also indicated that using inquiry-based learning in academic writing classes enhanced the students' writing performance. (See Appendix - Q). As the students reported, the inquiry-based learning used in advanced writing classes improved their writing skills in terms of producing essays with adequate content, coherence and cohesion, lexical resource, and grammatical range and accuracy, and clear topic sentences and thesis statements. The students replied that they used to write essays before the intervention, but their essays were not clear to read and understand. However, after they have learned the ways of producing effective essays through inquiry-based learning, they have written better essays with good grammar usage, vocabulary, and flow of ideas. For instance, one of the focus group discussion participants reported

Before learning through this method I used to write argumentative essays, but I did not know the techniques that used to write argumentative essays. After learning now, I know how to write argumentative essays because it helped me to know more about argumentative essay such as how to write it, and how to persuade my audiences using various techniques. So, learning through inquiry-based learning really supported me to write effective argumentative essays.

In the same manner, another student also mentioned

I have been writing different argumentative essays since last year, but they were not persuasive. But, after I ~~learn~~^{learned} in this method, I could come to identify the opponents' ideas, and how to counter attack my opponents' point of view. As a result, this method enhanced my argumentative essay writing performance.

Similarly, one of them also replied that before she ~~used~~^{used} inquiry-based learning, she did not know how to write and evaluate argumentative essays, but, after learning through ~~based~~^{inquiry-based} learning, she knew the clue about how to write ~~analyse~~^{analyse} argumentative essays. Likewise, the other focus group discussion ~~members~~^{members} also reported that the ~~inquiry~~^{inquiry}-based learning methods help them to know different techniques such as how to discover writing topics, gather relevant data on their topic, evaluate the collected data, and write up argumentative essays by incorporating feedback from colleagues and experts.

The students ~~also~~^{also} mentioned that the ~~argumentative~~^{argumentative} essays that they produced using ~~inquiry~~^{inquiry}-based learning were better than their previous experience in terms of stating the main points and substantiating them with rich supportive ideas. In addition, they asserted that they were trying to achieve the essay writing tasks to produce texts with adequate coherence, lexical, ~~and~~^{and} source accuracy. These ~~results~~^{results} indicated that the ~~inquiry~~^{inquiry}-based learning used in the teaching ~~learning~~^{learning} process was effective to enhance the ~~students'~~^{students'} academic writing skills.

Most of the students confirmed that the learning method initiated them to investigate their writing topics through inquisition. When the students elaborated, they replied that in the

teaching/learning process they discovered their argumentative essay writing topics, discovered supportive information, analysed and evaluated the collected data, wrote various drafts, discussed with colleagues, and produced final essays considering their audience.

Thus, it can be deduced that the inquiry-based learning techniques that the students were using in their writing journey were helpful to enhance the students' writing performance. This is because in the process of inquiry-based writing instruction, students were engaged in pre-writing tasks through generating ideas, discovering and clarifying writing topics, exploring information on their writing topics from various sources, explaining their discoveries or concepts gained from the exploration, and elaborate their thinking through transforming their understanding into their real-world situation. Therefore, when the students passed through this inquisition process, their writing performance had been enhanced.

Finally, the focus group discussion participants mentioned that the teaching material that they used in the teaching/learning process was helpful to inquire on how to discover writing topics, search for relevant information from personal, social and library sources, evaluate and organize the collected data, prepare drafts, and produce essays based on feedback. The participants said that the essay writing techniques incorporated in the teaching material helped to write argumentative essays on their writing topic. Besides, they reported that the teacher was also supporting them by providing feedback and explanation in the whole text production process. In inquiry-based writing instruction, the teacher facilitates the whole writing process and scaffolded students to produce effective texts (See Appendix Q). The focus group discussion account, therefore, implied that the students viewed that the inquiry-based learning used in advanced writing skills classes was effective to develop their writing performance.

4.1.1.4. Student Reflective Journal Results on Students' Writing Performance

The data gained from the students' reflective journal revealed that the students thought that using inquiry-based writing instruction helped them to enhance their writing performance. The students noted that in the teaching-learning process, they were asking questions on their writing topics, investigating data, past and present, connecting the topic to their experience, discussing with colleagues and experts, and reflecting on their learning process.

Thus, they stated that these inquiry skills were helpful to them to work on their writing tasks effectively. The students forward that the inquiry-based writing tasks contributed to the enhancement of their academic writing performance. The students added that they have practically learned the writing skills beginning from discovering writing topic to producing final drafts of essays with adequate feedback, rather than receiving writing rules from the teacher. One of the students noted

The lessons that we have learned in this course are helpful to improve my writing skills. In the lessons, we have used different essay writing techniques in question form that help to find writing titles, collect information, share ideas, and present the essay in class.

The students noted that in the inquiry-based argumentative essay writing instruction, they have learned how to discover, choose and clarify writing topics; discover supportive information; organize controversial ideas in an essay; discover stylistic choices to develop strong introduction, supportive ideas and conclusion; and use style to promote unity, specificity, and coherence in producing argumentative essays. As they reported, the students understood the nature of argumentative essay, gained knowledge of essay writing techniques, analysed written

argumentative essays, and produced their argumentative essays. They confirmed the result of the writing tasks given in the inquiry-based learning, they addressed the writing task in good manner, used cohesion in such a way that it attracts readers, used a wide range of vocabulary, and used a variety of structures with flexibility and accuracy. The other student stated:

, now, I can write good essays that can convince my readers because I tried to incorporate different reasons in my argumentative essays. Before this time, I could not write essays in this way, but now I know how to write introduction, body, and conclusion with strong evidence. In addition, the use of transitional words and phrases, and grammar rules are clear to me.

A reflective journal account taken from another participant reads as follows:

In the lesson the teacher helps us in a good way to write essays. He advised us to think and get our topic of writing. He also guides us to discuss in group on our topics and to collect data from other persons and internet. The hand out that he gave us is also good because the material has important techniques and questions that help to write the essay from the title to the end. But, getting information on our topic is not easy because some persons are not ok to give information.

Therefore, based on the students' reflective journals, we can conclude that the students believed that their writing performance was developed through inquiry-based learning in their writing classes.

In general, the results gained from tests, textual analysis, focus group discussion and student reflective journal on students' writing performance revealed that inquiry-based learning had positive effects on the students' writing performance. Students have outperformed in the posttest essays compared to the pretest essays in their writing performance including task

achievement, coherence and cohesion, lexical resource, grammatical range and accuracy as a result of using inquiry-based learning. To put it in other terms, using inquiry-based writing instruction developed the students' academic writing skills in terms of content, organization, language usage or accuracy, vocabulary or diction, and mechanics. This is because the students used good diction, sentence structure, and mechanics, and they were also able to develop good topic sentences, thesis statements, and supportive ideas when they wrote essays. Besides, the students also viewed that using inquiry-based learning in advanced writing skills classes had been effective to develop their writing performance since its techniques were helpful to produce sound academic texts.

4.1.1.5 Textual Analysis Results on Students' Critical Thinking Skills

The present textual analysis on student-written essays was made to provide further evidence regarding the effects of using inquiry-based learning on the students' critical thinking skills. Accordingly, sample pre-test and post-test argumentative essays written by the students were randomly selected and analysed to triangulate the statistical findings presented on students' critical thinking skills. Based on the textual analysis made, the post-intervention student-written essays were better in terms of interpretation, analysis, evaluation, inference, and explanation compared to the pre-intervention essays. The result implies that the students had outperformed in the post-tests when they used inquiry-based learning.

Pre-test-3 Essay of Student20

Recalling from the essay that student20 drafted before using inquiry-based learning, it was possible to realize that the student did not consistently exhibit critical thinking skills. The essay lacked to provide full interpretation because the student, in this essay, did not clearly express the meaning and significance of the argumentation topic that living in country side versus in cities,,. In addition, the student's judgment was not clearly shown in the text. This point could be stated in the thesis statement, but since the essay had no clear thesis statement, the student was unable to show clear judgment.

The introductory paragraph of the essay began with an overgeneralized statement that Country side is the source of everything. People who live in cities cannot survive, it was also stated that country life is better than city life because there are no traffic and noise in the morning and afternoon. However, it would have been better if this paragraph had begun with an interesting statement, and introduced the thesis statement that held the main ideas of the upcoming supportive paragraphs, but it failed to do so. As a result, the theme of the argumentation was not well described; rather some main points were mentioned here and there confusingly.

The student tried to show the proponent and opponent ideas whether living in countryside is better than cities, but the ideas were not categorized in paragraphs to develop the essay coherently. In other words, both proponent and opponent ideas were presented together rather than to discuss them separately for clear understanding. To show some examples, the second paragraph mentioned that But in the cities there are more jobs than in the country side. In the cities are also more shops. The access for food in the city is easier, but in the country side the food is more easy and healthier. The reasons or/and evidence were not presented in the text.

The student seemed to present reasons to convince readers, but the salient reasons in both arguing sides were not identified. To this end, opinions were presented superficially without adequate evidence. For instance, in paragraph three the writer noted: fcountry sides are many advantages/country sides has its advantages and levels five of them. Fresh air, more peace and quiet, lots of space fkids, and more fresh air are advantages of country side,,.

The student did not adequately explain the merits and demerits of living in country sides and cities to easily convince readers. Especially, the opponents' point of view that living in cities is better than in country sides seem to be forgotten because little discussion was given to it in the essay. So, we can see that the student presented the argument poorly. Consequently, it is possible to say that the student did not adequately comprehend and expressed the meaning of the argumentation issues to provide clear judgments in the essay. The student did not sufficiently recognize the core elements or reasons of the argumentation and describe them in the text. The student also lacked to contrast categories of proponent and opponent ideas presenting them. Accordingly, the quality of this student's written essay indicated that the student lacked interpretation skills before the intervention.

Even though the essay seems to show the relationship of ideas, the student inadequately recognized the intended and actual differential relationships among statements to express beliefs. That is, the opponents' ideas were not fully discussed, and there were no strong rebuttal ideas that could convince readers and identify the writer's position. In the essay, the proponent and opponents' arguments on living in country sides and cities were not fully examined, detected and analyzed. The writer insufficiently identified the similarities and differences between opposing ideas to develop the essays. Besides, there were loose relationships between sentences in

paragraphs, and there were also redundant ideas among paragraphs. The paragraphs have definite main ideas that are interlinked to the main topic of the essay.

Besides, the student constructed doubtful reasons to support the proponent's perspective, and lacked to criticize the opponent's view about living in cities is better than country sides. The concluding paragraph was not also strong enough to summarize the main ideas of the argumentation. It incorporated some repeated sentences that were taken from previous paragraphs. The concluding paragraph has stated as: "Finally country side is the source of everything, quiet and peaceful certainly not as contained with toxic pollutants as the city, so country side is many advantages and disadvantages. So country side is better than in cities,,. These sentences showed that the writer provided incomplete conclusion due to lack of convincing reasons that support the proponent's ideas and criticized the opponent's thoughts.

Therefore, the student did not fully identify the intended and actual inferential relationships among statements to express views in the text. The student also lacked to adequately examine ideas, detect and analyze arguments. The students did not construct substantial reasons to support and criticize ideas to arrive at clear conclusion. Therefore, it could be said that the student had lacked the analysis skill before using inquiry-based learning.

As was stated above, the student did not recognize the relevant factors of the argument because the essay lacked to discuss the merits and demerits of living in country sides and cities. While the statements presented on the proponent's side were not that convincing, the opponent's ideas were also discussed lightly. It indicates that the student did not assess the credibility of statements mentioned in the proponent and opponent sides. The ideas presented in the text were redundant,

and adequate rebuttals were not given to the opponent's arguments. It confirms that the student incompetently assessed the logical relationship of statements.

The ideas stated in both proponent and opposites lacked strong evidence which showed that the student had loosely judged the relevance of ideas. Lastly, the student did not provide strong evidence to convince that living in country sides is better than cities. To this effect, it can be understood that the student had lack of evaluation skills which is among the critical thinking skills.

The relevant thoughts needed to draw a strong conclusion were not fully presented in the essay. The student did not form conjectures and lacked proficiency to consider relevant information and deduce conclusions based on evidence. The student did not fully formulate a synthesis of related ideas into a coherent perspective to produce the essay. Accordingly, it indicates that the student lacked inference skills while writing this essay.

The essay did not entirely describe the proponent and opponent's point of view, reasons, and concluding remarks about the pros and cons of living in country sides and cities. In other words, the main argumentative points, related ideas, and reasons were not adequately presented in a cogent and coherent manner. The student seemed to be unable to provide a full picture of the argumentation since contextual factors were not justified with adequate reasons. That is, the student lacked the skill to justify reasons why living in country sides is better than cities. However, claims were presented roughly without strong evidence and conclusion.

Besides, it would have been better if the essay had stated ideas to strengthen that living in country sides is better than that of cities. The student did not show clear implications for

future reference that living in country sides is better than cities. This textual analysis, therefore, concludes that the student was short of explanation skills before the intervention of inquiry-based learning. In sum, the textual analysis done on Student 20's pretest essay showed that the essay was limited to address the critical thinking skills including interpretation, analysis, evaluation, inference, and explanation. On the other hand, the same student (Student 20) wrote a better essay after the implementation of inquiry-based learning. Below is the essay that this student produced after learning writing skills through inquiry-based learning.

Posttest-2 Essay of Student20

The above essay was written by Student20 after using inquiry-based learning. The student expressed the meaning and significance of condom and presented clear judgment in the essay. This point was presented in the first paragraph: "Condom is a sheath commonly of rubber worn over penis so as to prevent venereal infection during sexual intercourse." The theme of the argumentation was also described in the same paragraph: "It is irrelevant to make available condoms in colleges though other people argue that condoms should be available in colleges because it protects pregnancy, prevents venereal infection, and decreases sexually transmitted diseases." The student also constructed categories of proponent and opponent ideas and used them for the development of the essay.

The opponents' ideas were stated in the essay as "other people argue that condoms should be available in colleges because it protects pregnancy, prevents venereal infection, and decreases sexually transmitted diseases." Besides, the proponent ideas were also presented in the supportive paragraphs that using condom is not trustworthy since it can be easily torn, allows sperm to enter into womb to make conception; it increases venereal infection due to friction as long as the condom puts between penis and vagina during sexual intercourse, and condom cannot completely control sexually transmitted diseases since it is supposed to protect sexually transmitted diseases only 95%.

The student also identified salient reasons in both arguing sides and described them in the text without bias. To show this, the student has based the main ideas on the opponents' main reasons rather than the proponents' ideas which can show that the writer tried to be unbiased. As it was mentioned in the essay, "other people argue that condoms should be available in colleges because it protects pregnancy, prevents venereal infection, and decreases sexually transmitted diseases."

The student clarified the merits and demerits of making condoms available in colleges. To explain the merits as part of the opponents' view, it was stated that condoms protect pregnancy, prevent venereal infection, and decrease the probability of being infected with sexually transmitted diseases. On the other hand, the demerits were also discussed in that making condoms available in colleges by itself is opening the compound for sex; it has negative impacts on college students' academic achievement and their future life; the condom can be left in vagina and cause another problem on college students who are not matured enough to handle condom.

Therefore, it is possible to say that the student comprehended and expressed the meaning of the argumentation issues and provided judgments in the essay. The student recognized the core elements of the argumentation and described them in the text. The student constructed categories of proponent and opponent ideas for argumentative essay development. Accordingly, the accomplishment of these critical thinking writing tasks indicates that the student developed the interpretation skill (one of the core critical thinking skills) through using inquiry-based learning.

The student identified the intended and actual inferential relationships among statements express beliefs in the essay. In other words, the opponents' actual reasons like condoms protect pregnancy, prevent venereal infection and decrease sexually transmitted diseases, which were intended to strengthen the availability of condom in colleges were presented in the essay. In the same manner, the actual rebuttal ideas including condoms are not trustworthy because it can be easily torn, increases venereal infection due to high friction, and cannot completely control sexually transmitted diseases that imply to avoid condoms from colleges were also discussed in the essay.

The student examined ideas, detected and analyzed the proponent and opponent arguments in the essay on the availability of condoms in colleges. The student identified the similarities and differences between opposing ideas in developing argumentative essays. That is the essay, it is mentioned that the student understood the importance of putting condoms in colleges, but had reservations on its trustworthiness. Besides, the student made a strong relationship between each sentence and each paragraph and interlinked each main idea to the thesis statement of the essay. Hence, the three main ideas including protecting pregnancy, preventing venereal infection and decreasing sexually transmitted diseases were presented in the second, third and fourth paragraphs with rebuttal ideas, respectively which show their linkage to the main purpose of the essay. The sentences drafted in each paragraph strengthened the ideas posed at the beginning of each paragraph.

Finally, the student constructed convincing reasons to support the proponents' perspective, criticize the opponents' view on the availability of condom in colleges and reach a strong conclusion. In the conclusion of the essay it was stated that providing condom to college students by itself is opening the room for sex. It has negative impacts on students' academic achievement and future life. The condom may remain in vagina and cause another problem for students who are not matured enough to use it. The higher educational institutions of the country should teach their college students to stay away from having sex in college time rather than making condoms available. These statements show that the student derived a strong conclusion based on convincing reasons that support the proposition and criticize the opponents' thoughts.

Overall, the student identified the intended and actual inferential relationships among statements to express beliefs in the essay. The student also examined ideas, detected and analysed arguments. The student identified the similarities and differences between opposing ideas in developing the essay. The student had constructed convincing reasons to support and criticize ideas and arrived at a strong conclusion. Therefore, it appears that the student enhanced the analysis skill which is one of the core critical thinking skills. Thus, it shows that using inquiry based learning in writing classes enabled the student to enhance analysis skill.

The student recognized the salient features of the argument because the aspects that determine the merits and demerits of making condoms available in colleges were discussed in the essay. The statements presented in both arguing sides were strong which imply that the writer had assessed the credibility of statements that account for the proponent and opponent beliefs. The ideas discussed in the essay were interrelated, and rebuttals to the opposing arguments were appropriate. It shows that the student assessed the logical relationship of statements, and compared the strengths and weaknesses of alternative interpretations.

The evidence used in the text did not contradict each other but supported the conclusion which confirmed that the student had judged the relevance of ideas correctly. The conclusion was also drawn from its correct premises. Finally, the student had judged that the argument was applicable and had implications for higher educational institutions of the country to teach college students refrain from having sex in college time rather than making condoms available. Therefore, from these results, one can deduce that the student developed the evaluation skill which is one of the core critical thinking skills.

The student has identified pertinent thoughts needed to draw reasonable conclusions in the essay. The writer formed conjectures and considered relevant information and deduced consequences based on the evidence. The student questioned the evidence, conjectured alternatives, and concluded to stop making available condoms in colleges. The student had constructed meaning from the reasons and claims, and formulated a synthesis of related ideas into a coherent perspective to produce the essay. The achievement of these writing tasks indicates that the student had inference skills which is one of the critical thinking skills. It shows that the student improved inference skills when using inquiry-based learning.

As it can be seen in the essay, the student has described the proponent and opponent point of view, reasons, and conflicting ideas on the main issue of Condoms should/ should not be available in colleges. In other terms, the arguing point, related claims, and reasons were presented in a cogent and coherent way. It was explained what the student thought about making available condoms in colleges and raised out claims with evidence to arrive at a clear conclusion. The student was able to give a full look at the big picture of the argument because the reasons were stated and justified through evidence and contextual considerations. The student stated and justified the reasons why condoms should not be made available in colleges in terms of evidential and contextual considerations upon which the claims were based. The reasons were presented in the form of persuasive arguments.

The student cited the contextual factors related to college students' awareness of using condom to judge the quality of reasons forwarded by opponents. For example, the student cited evidence to convince readers that it is exemplified that there are college students who are not able to use condoms properly, and it is into problems when the condom left in vagina. In addition, to

convince readers, the student also stated research results that condom is supposed to protect sexually transmitted diseases only 95%, and it cannot completely control sexually transmitted diseases. The student's current thinking was also stated for future reference that making condoms available in colleges by itself is opening the compound for sex, and has negative impacts on students' academic achievement and future life. As a result, the student recommended that universities should advise college students not to have sex in college, rather than making condoms available.

The essay denoted that the student developed the explanation skill among the core critical thinking skills. This is because the student had accurately presented the topic of argumentation, evidence, and statements; identified the salient arguments (reasons and claims) pro and con; thoughtfully analysed and evaluated major alternative points of view; drawn warranted, judicious, and not fallacious conclusions and impartially followed where evidence and reasons lead. Thus, it is possible to conclude that using inquiry-based learning in writing classes was effective to enhance the student's explanation skill.

All in all, based on the textual analysis made on Student's pretest and posttest essays, we can deduce that the student's essay written before the intervention of inquiry-based learning had not fully addressed interpretation, analysis, evaluation, inference, and explanation which are the core critical thinking skills. On the other hand, the student's essay written after the intervention of inquiry-based learning had addressed the aforementioned critical thinking skills. It indicates that using inquiry-based learning in writing classes developed the student's critical thinking skills.

Pre-test-1 Essay of Student#11

The above essay that was written by Student before the intervention, did not adequately address the critical thinking skills including interpretation, analysis, evaluation, inference, and explanation. The essay presented the opponents' side only, not the proponents' views. It was also incomplete for it had no concluding paragraph. The text did not provide a complete interpretation of the topic of the argumentation. In other words, the meaning of facebook was not expressed in the text even though its significance was mentioned. Besides, the essay had no clear thesis statement that could show the main point of the argumentation.

The first paragraph of the essay compared the role of facebook in past and present times. It was stated as: *"Before 10 years ago Facebook is the only and the best social media in the world but now a day it brings the worst social media because human minds change through evolution and every thing into worst."* This expression seems an introductory idea, but it did not clearly introduce the topic of the argumentation and the main points that should have been developed in the supportive paragraphs. In addition, in the introductory paragraph, the writer noted that *"Now this day facebook have more than billions of users in the world and every one share their ideas photos comments and events and wrong information too."* In these choppy sentences, the writer tried to state the significance of facebook. However, it would have been better if the student had specified the thesis statement with interesting introductory sentences. Thus, the subject of the argumentation was not well described in the introductory paragraph.

The student tried to present the opponents' ideas that facebook is the worst social media, but it did not explain the proponents' view. It indicated that the writer lacked to develop the essay with complete evidence. In addition, the opponents' views were also not categorized into paragraphs.

to develop the text coherently. The ideas were presented rather than discussing them separately with clear main topics. To exemplify, in the second paragraph it was noted:

In this generation face book is being a tool for civil wars conflict and speeches some arrogant people write down some false information and the rest of the people share that information and started a hate speech after that conflict will start if we dig every conflict in the world.

As can be seen, the reasons and subsequent evidence were not presented in this text. The salient reasons in both arguing sides were not identified. To this end, opinions were presented sketchily without adequate evidence.

The student partly explained the demerits of using facebook but did not present its merits. Particularly, the proponents' point of view that facebook is the best social media seems to be overlooked because almost none was stated about it in the text. So, we can see that the student presented the argument incompletely. Accordingly, it is possible to say that the student did not adequately comprehend and express the meaning of the argumentation issues to provide clear judgments in the text. The student did not sufficiently recognize the core elements of the argumentation and describe them in the essay. The writer also lacked to construct categories of proponent and opponent ideas to present them logically. Accordingly, the quality of this student's written essay indicated that the student lacked interpretation skills before the intervention.

In this essay, the student has partly identified the relationship of ideas, and inadequately recognized the intended and actual inferential relationships among statements to express views. Since the proponents' ideas were not discussed in the text, almost no rebuttal ideas were given to convince readers. In the essay, the opponents' viewpoint about the claim: Facebook is the worst social

media,, was not fully examined, detected and analyzed. Moreover, as it is stated above, the proponents' point of view about the argument that facebook is the best social media was not explained. The writer insufficiently identified the similarities and differences between opposing ideas to develop the essay. Besides, there were loose relationships between sentences in paragraphs. The paragraphs had no clear main ideas and were interlinked to the thesis statement.

The student has constructed uncertain reasons that were not supported with clear evidence. Also, a concluding paragraph was not written to summarize the main ideas of the essay. The written text shows that the writer has written an incomplete essay. Therefore, the student did not fully identify the intended and actual inferential relationships among statements to express views in the essay. The student also lacked to adequately examine ideas, detect and analyze arguments about using facebook. The student did not construct substantial reasons to support and criticize ideas. Therefore, it looks that the student lacked the analysis skill before the intervention of inquiry-based learning in writing classes.

As stated previously, the writer did not recognize the relevant features of the argument because the essay failed to discuss the merits of using facebook. While the statements presented on the opponents' side were not convincing, the proponents' views were also discussed lightly. It shows that the student had not assessed the credibility of statements mentioned on the proponents' and opponents' sides. While the ideas presented in the text were inadequate, there were no rebuttals to the ideas which are given to the proponents' argument. It implies that the student incompetently assessed the logical relationship of statements. The ideas stated in the opponents' sides lacked clear evidence, and there were no opponents' sides which show that the student had loosely judged the relevance of ideas in the argument. The student did not provide strong evidence to

convince that facebook is the worst social media. As a result, one can conclude that the student had lack of evaluation skills while writing the essay.

In the essay, the pertinent thoughts needed to conclude were not fully discussed. The student did not form conjectures and lacked to consider relevant information to deduce conclusion based on evidence. The student did not comprehensively formulate a synthesis of related ideas into a coherent perspective. Thus, it shows that the student lacked inference skill.

The student, in this essay, lacked to comprehensively describe the proponent and opponent views, reasons, and concluding remarks about the pros and cons of facebook. That is, the thesis statement, related ideas, and reasons were not sufficiently presented in a cogent and coherent manner. The student was unable to provide a full picture of the argumentation since contextual factors were not justified with adequate reasons. The writer did not state and justify the reasons why facebook is the worst social media. Claims were presented incompletely without clear evidence and conclusion. Moreover, the student also did not adequately discuss implications for the future to show that facebook is the worst social media. Hence, the student had lack of explanation skill before the implementation of inquiry-based learning. Overall, this textual analysis implies that Student 11 had deficiency of interpretation, analysis, evaluation, inference, and explanation skills while writing pre-intervention essay.

The same student (Student 11), instead, produced a better academic text after learning writing skills using inquiry-based learning. The student's essay of post-intervention which was written after the intervention was presented below for comparison. The essay was well written in terms of interpretation, analysis, evaluation, inference, and explanation compared to previous essay written by him before the intervention of inquiry-based learning.

Posttest-3 Essay of Student11

The above essay which was the post-3 essay of Student-11 seemingly achieved interpretation because the student has expressed the meaning and significance of university at the very beginning. It was presented in the introductory paragraph that reading universities are higher

education institutions where students join after completing their grade twelve education,,. Besides, the subject of the argumentation was also presented in the same paragraph when the student noted:

Many people say that it is the first time that students apart from their families and start to live alone. As a result, they argue that universities should control their students' way of life for three reasons though the reasons are not convincing.

Categories of proponent and opponent ideas were also constructed and used as themes to develop the whole text. As the writer mentioned in the thesis statement, the opponents' ideas were expressed as 'other people argue that universities should control students' way of life for three reasons though the reasons are not convincing,,. These three reasons are being exposed to health-related and financial problems and academic achievement that are later developed in the supportive paragraphs with each reason. On the other hand, the proponents' ideas were also discussed in the supportive paragraphs that controlling students cannot protect them from disease and abduction, rather counselling students the way how to protect themselves from health problems and other obstacles are best mechanisms. It was stated that as long as universities build students in different dimensions including financial management apart from their academic achievement; the students should freely practice how to handle independently to pave the way for their later life. The writer mentioned that universities need to train students on how to study hard and prepared for exams rather than to watch out the students' day to day practices shows that the student has recognized salient reasons in both arguing sides, and described them in the text without bias.

The merits and demerits of controlling university students were explained in the essay. Among the merits that the writer discussed, ...to save the students' health, to make them conscious of financial management, and to enable them to achieve better academic performance' can be mentioned as examples. In addition, the demerits were also discussed in the essay that controlling students in their university time does not enable them to be successful in their academic goal; rather it makes students dependent and decrease their self that affects their future decision ability. Consequently, one can say that the writer has comprehended and expressed the subject of the argumentation, and provided judgments in the text. The student recognized the core elements of the argumentation and described them in the text. The student had constructed categories of proponent and opponent ideas to develop the essay. Thus, the achievement of these tasks in writing implies that the student developed his/her interpretation skill.

The student in this essay had achieved the analysis skill because the intended and actual inferential relationships among statements to express beliefs identified. To put it in other words, the opponents' main reasons including being exposed to health-related and financial problems and poor academic achievement were presented in the essay to strengthen the argument that universities should control their students. Simultaneously, the proponent ideas were also given that as university students are at puberty stage, and face different internal and external influences which instigate them to do hazardous activities like sexual practices, controlling the students only cannot protect them from health-related problems. It was also stated that in university, students build themselves in different dimensions including financial management; rather than being extravagant. Lastly, the writer noted that rather than controlling students from

their daily activities, universities should train them on how to study hard and become effective in their education.

The student has examined ideas, detected and analyzed proponent and opponent arguments in the essay about the topic controlling university students. The similarities and differences between opposing ideas were identified in the essay. In addition, the student has made a strong relationship between each sentence and each paragraph and interlinked each main idea to the thesis statement of the text. Hence, the three main points including saving students from health related and financial problems, and increasing academic achievement were discussed in the second, third and fourth paragraphs with rebuttal ideas, respectively which shows their linkage to the thesis statement of the essay. In addition, the sentences drafted in each paragraph strengthened the main ideas posed at the beginning of each paragraph.

Lastly, the student constructed convincing reasons to support the proponents' perspective, criticized the opponents' point of view about controlling university students and arrived at a strong conclusion. In the conclusion of the essay, it was stated that controlling students in their university time is not a good way to save students from health related and financial problems, and to increase their academic achievement. The writer forwarded that university students should move freely and exercise whatever they want because they know what to do and how to do things at higher education level. These statements show that the student came up with a strong conclusion through convincing reasons that support the proponents' ideas and criticized the opponents' thoughts. In sum, the student has identified the intended and actual inferential relationships among statements to express views. The student also examined ideas, detected and analyzed arguments in the essay. The student has constructed convincing reasons to support and

criticize ideas and reached a clear conclusion. Therefore, it shows that the student enhanced the analysis skill which is one of the critical thinking skills, thus indicates that using inquiry based learning enabled the student to enhance analysis skill.

The writer recognized the salient features of the argument because the essay discussed the aspects that determine the merits and demerits of controlling university students. The statements presented in both arguing sides were clear that in fact the writer assessed the credibility of statements which account for the proponent and opponent views on controlling students. The ideas presented in the essay were interrelated each other, and appropriate rebuttals were also given to the opponents' arguments. It implies that the student has assessed the logical relationship of statements, and compared the strengths and weaknesses of alternative interpretations regarding controlling university students' life

Besides, most of the evidence given in the essay did not contradict each other; rather they supported the conclusion which confirms that the student was able to judge the relevance of ideas. The conclusion was also followed with certainty from its premises. Lastly, the student has judged that the argument was applicable and has implications for universities to make students aware of the way how to protect themselves from health-related problems and other obstacles, advise them on how to study hard to become effective in their education; rather than controlling the students' way of life. The writer also forwarded that university students should move freely and exercise whatever they want because they know what to do and how to do things at higher education level. Accordingly, we can conclude that this student had developed the evaluation skill after the intervention of inquiry-based learning.

The student had identified pertinent thoughts needed to draw reasonable conclusions on whether universities should control their students' way of life or not. The writer had formed conjectures and considered relevant information and deduced consequences based on the evidence. The writer also questioned the evidence, conjecture alternatives, and concluded that universities should not control their students' way of life. The student has constructed meaning from the reasons and claims and formulated a synthesis of related ideas into a coherent perspective to produce the above text. The attainment of these writing tasks shows that the student has developed inference skill among critical thinking skills. This, therefore, indicates that the student improved his/her inference skill after the intervention of inquiry-based learning in writing classes.

Finally, as it was stated before, the student has described the proponent and opponent views, reasons, and concluding ideas on the main topic: "Universities should/ should not control their students' way of life.". That is, the arguing point, related claims, and reasons on the topic were presented in a cogent and coherent way. The student explained the students' view on controlling university students' way of life and reasoned with evidence to draw a strong conclusion. The writer was able to provide a full look at the big picture of the argument because the reasons were stated and justified through evidence. The writer stated and justified the reasons why universities should not control the students' way of life based on evidence upon which the results were made. The reasons were also presented in the form of persuasive arguments.

The student has discussed his/her current thinking for future reference in that controlling students only cannot protect them from health-related and financial problems; it does not enable them to be successful in their academic goal, and continuous control of students make them

dependent and decrease their self-esteem that affects their future decision ability. As a result, the student recommended that universities should be aware of their students about the ways of protecting themselves from obstacles and health-related problems, advise them how to study hard and become effective in education, and train them on self-management; rather than controlling the students' way of life.

The sample essay of Student 11 indicates that the student developed explanation skill. This is because the student has accurately interpreted the topic of the argument, evidence, and statements; identified the salient arguments (reasons and claims) and pros; thoughtfully analysed and evaluated major alternative points of view; drawn warranted, judicious, and non fallacious conclusions and firmly followed where evidence and reasons lead. Therefore, we can understand that the implementation of inquiry-based learning was effective to empower the student with an explanation skill.

Taking all points into account, based on the textual analysis made on pre and posttest 3 essays of Student 11, we can deduce that the student's essay written after the intervention of inquiry-based learning did not fully address interpretation, analysis, evaluation, inference, and explanation which are the core critical thinking skills. On the other hand, the student's essay written after the intervention of inquiry-based learning has addressed the aforementioned critical thinking skills. This is to mean the student has outperformed in his/her posttest essay writing compared to the pretest 1 essay. This indicates that using inquiry-based learning in writing classes was effective in developing the student's critical thinking skills. In sum, the results of the textual analysis made on the students' pre and posttest essays revealed that the students have outperformed in the posttest essays compared to the pretest essays on their critical

thinking skills including interpretation, analysis, evaluation, inference, and explanation compared to the pre-intervention essays.

4.1.1.6 Focus Group Discussion Results on Students' Critical Thinking Skills

The focus group discussion result showed that using inquiry-based learning writing classes empowered the students with critical thinking skills necessary for effective academic writing. The participants described that they had developed their critical thinking skills including interpretation, analysis, evaluation, inference, explanation, and self-regulation after they used inquiry-based learning in their writing process.

For instance, one of the participants reported:

My critical thinking skills is very good now. Especially, when I pick two points from these points, analysis and evaluation, I analyse and evaluate written arguments because of the current learning. So now, I can easily interpret, analyse and evaluate data, and even regulate myself to write my argumentative essay to persuade my audience.

The students specified that the inquiry-based writing instruction enabled them to comprehend and express their writing contents (interpretation); identify and examine arguments and claims (analysis); identify the core claims, estimate alternatives, and draw reasonable conclusions (inference). In the same manner, the students also replied that they enhanced the writing skills that could help them assess the credibility of claims and quality of arguments made in their conclusions (evaluation); state results, justify procedures, and present arguments (explanation), and consciously monitor and correct their writing activities (self-regulation).

When one of the participants explained in the discussion, he stated:

Every English language graduate person and critical thinking towards writing dependently go together. I am going to do two things in the future as an English graduate man. These are ~~ically~~ writing texts and critically evaluating what another person has written. So, I think, the critical thinking skills that I developed through inquiry-based writing instruction are helpful to the rest of my life

The students reported that ~~after~~ the inquiry-based writing instruction was used in the teaching learning process, they ~~had been able to~~ comprehend their writing queries, examine arguments and claims, and ~~on~~ reasonable conclusions in writing their texts. They also stated that they have ~~evaluate~~ the relevance of ideas, checked their written essays ~~and~~ corrected for clarification. Based on this result, we can understand that the students have developed their critical thinking skills ~~after~~ inquiry-based learning ~~was~~ used in the writing classes.

The focus group discussion participants confirmed that in the whole learning process, they discovered their writing topics, searched for information, and evaluated the collected data, and prepared drafts, incorporated peer feedback ~~and~~ produced their essays. Therefore, the students' focus group discussion results showed that the students claimed that their critical thinking skills including interpretation, analysis, evaluation, inference, explanation, and ~~regulation~~ were enhanced through the inquiry-based writing instruction used ~~in~~ their advanced writing classes

4.1.1.7 Student Reflective Journal Results on Students' Critical Thinking Skills

The students' reflective journals revealed that the writing tasks given in inquiry-based learning had contributed to the development of their critical thinking skills. The students noted the method of learning, the teaching materials and the teacher's support were helpful to produce essays with strong evidence. As one of the students stated

In the teaching-learning process, I have learned many techniques that helped me to think in-depth. For example, the question form techniques those help to get topic, find information from different places, and organize ideas. When the teacher teaches, he supports us to write essays based on the techniques. The students also discuss together and share ideas on how to collect information and how to the final essay. Then, my **thinking** ability changed to write better argumentative essays that have good reasons to convince my opponents.

In the process of argumentative essay production, the students pass through asking for information about their topic, investigating data, discussing with friends and experts, connecting the writing topic to their background knowledge, and reflecting on the process of their essay writing journey. Thus, the students' reflective journal account showed that they assumed that the process of inquiry-based learning was effective to enhance their critical thinking skills.

The other participant also stated:

My thinking to write good essays is developed when our teacher teaches us about argumentative writing. I tried to gather evidence to my argumentative essay, Based on the evidence that I gathered, I can write the introduction, body and conclusion with good words. But all the information is not used; I evaluate and select important ideas. Our friends also share ideas to modify the

written essays. After I finished my essay, the teacher asked us to read it and check the reasons of our concluding ideas.

Therefore, from the students' reflective journal, we can conclude that the students claimed that using inquiry-based learning empowered their critical thinking skills.

On the whole, the results gained through tests, textual analysis, focus group discussion, student reflective journal on students' critical thinking skills showed that inquiry-based learning had positive effects on the students' critical thinking skills. In other words, the students have outperformed in the post-test essays compared to the pre-test essays in their critical thinking skills including interpretation, analysis, inference, evaluation, explanation, and self-regulation through using inquiry-based learning in advanced writing classes. This implies that inquiry-based learning has improved EFL students' critical thinking skills which are mentioned above.

4.1.2. Students' Motivation towards Writing

In this part of the research report, the students' motivation towards writing is presented. The results were gained through questionnaire, focus group discussion, and student reflective journal.

4.1.2.1. Questionnaire Results on Students' Motivation

This subsection presents the questionnaire results gained through paired samples statistics.

Table 4.8: Comparison of students' motivation: Before and after the intervention

Pairs	Items	Tests	Mean	N	Std.	Std. Error
					Deviation	Mean
Pair 1	Self-efficacy of writing	Pre-intervention	1.6476	21	.34730	.07579
		Postintervention	4.4000	21	.28284	.06172
Pair 2	Goal orientation of writing	Pre-intervention	1.5619	21	.32631	.07121
		Postintervention	4.4095	21	.34337	.07493
Pair 3	Belief about writing	Pre-intervention	1.6571	21	.39569	.08635
		Postintervention	4.3524	21	.36826	.08036
Pair 4	Affect about writing	Pre-intervention	1.5357	21	.38960	.08502
		Postintervention	4.4286	21	.40422	.08821

The paired samples statistics presented in Table 4.8 show that the Mean scores of the posttests were higher than the Mean scores of the pretests in each pair. Particularly, the students' self efficacy of writing (Pretest Mean, 1.6476; Posttest Mean, 4.4000) increased when they used inquiry-based learning. Therefore, the students had better efficacy when they used inquiry-based learning. Likewise, the students' goal orientation of writing also increased when they learned writing skills through inquiry-based learning. The students' goal orientation-pretest Mean was 1.5619 while the posttest was 4.4095. It shows that the students' goal orientation increased after they had used inquiry-based learning.

In addition, the students had better belief about writing after they used inquiry-based learning. The table shows that the pretest Mean was 1.6571 while the posttest Mean was 4.3524. Finally, the students' affect about writing was also higher in the posttest compared to the pretest (pretest Mean, 1.5357; posttest Mean, 4.4286). The result shows that the students' affect about

writing increased when they used inquiry-based learning. Similarly, the Standard Deviations of the preintervention and postintervention results of each pair have no significant differences. This implies that the students' motivation increased after the intervention. Thus, it can be understood that using IBL in writing classes increased students' self-efficacy, goal orientation, and belief and affect about writing which are the core elements of motivation.

Table 4.9: Paired samples test result of students' motivation before and after the intervention

Pairs	Items	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)
Pair 1	Self-efficacy Preintervention and Post intervention	-2.75238	.59129	.12903	-21.331	20	.000
Pair 2	Goal orientation Preintervention and post intervention	-2.84762	.64469	.14068	-20.242	20	.000
Pair 3	Belief about writing Pre intervention and post intervention	-2.69524	.67118	.14646	-18.402	20	.000
Pair 4	Affect about writing Pre intervention and post intervention	-2.89286	.70963	.15485	-18.681	20	.000

The paired samples test table 4.9 also shows that the students' motivation increased after using inquiry-based learning. Specifically, the null hypothesis of equal self-efficacy means was rejected, $t(20) = -21.331, p < 0.05$. Similarly, the null hypothesis of equal goal orientation means was rejected, $t(20) = -20.242, p < 0.05$. Likewise, the null hypothesis of equal belief about writing means was rejected, $t(20) = -18.402, p < 0.05$. Lastly, the null hypothesis of equal affect about writing means was rejected, $t(20) = -18.681, p < 0.05$. Thus, the postintervention means of each motivation elements were statistically significantly higher than each preintervention mean. Therefore, it can be concluded that the students' self-efficacy, goal orientation, belief and affect about writing increased through using inquiry-based writing instruction in their advanced writing classes.

In general, the paired sample test results exhibited that using inquiry-based learning in writing classes increased students' efficacy, goal orientation, belief and affect about writing which are the core elements of motivation.

4.1.2.2. Focus Group Discussion Results on Students' Motivation

In the focus group discussion, the students replied that using inquiry-based learning increased their motivation related to their willingness and preference towards writing. Based on the students' report, they were interested in doing the writing tasks while they were using the inquiry-based method of learning. Based on their expression, the way of learning used in inquiry-based writing instruction was interesting to the students since it allowed them to use their writing topics rather than receiving topics from the teacher unwillingly. They were also interested in searching for information from various sources on their topics, to evaluate and use of the collected data, and to produce essays with adequate evidence. They stated that the discussions they made with their friends and experts on their essays were interesting to them. The comments they got from their discussion were important to produce their essays. In addition, they were also interested in presenting their written essays and reflecting on the process of producing essays. In general, the students' focus group discussion result indicated that the students' motivation improved after they used inquiry-based learning in their advanced writing skills course.

4.1.2.3 Student Reflective Journal Results on Students' Motivation

The data gained through students' reflective journal indicated that the students' motivation increased when they used inquiry-based learning. They reported that the techniques that were

used in the inquiry-based writing instruction were interesting to work on writing tasks. They also stated that writing is important to explore and express ideas.

One of the students reported:

Before this time, I can't write good essays, but when I learn advanced writing in this way, I can write good essays that are convincing and complete in their contents. Last year, my aim of writing was just to submit the assignment to the teacher and to get good scores, but now I try to develop my writing ability based on the lessons.

Another student also stated that her motivation increased after inquiry-based learning was used in the writing classes. Her reflective journal account can be read as follows:

In my previous courses, I had problems related with lack of understanding on how to begin writing and how to find a topic due to lack of ideas. However, in this course, I can get ideas myself using the techniques given in the hand out. In addition, I had fear of mistakes and teachers' comments on grammatical errors and organization of ideas. But now, the teacher advised us to be confident in our writing, and revise the essays for the second time. As a result, I become motivated to write my essays without fear.

In addition, the students also mentioned that the teaching material was also interesting to read and understand because the essay writing techniques, writing tasks, sample essays, and other related contents presented in the material were clear to read and understand. The students feel if they could accomplish the writing task given in the learning process. As they mentioned, the writing skills that they have developed through the inquiry-based writing instruction were helpful to their future career related to producing real texts. They also note that writing is an interesting job though the process of writing is not simple.

Therefore, the students' reflective journal accounts simply that after the students used inquiry-based learning in their writing classes, their capability to perform the writing tasks improved, and their motivation towards writing also increased. In the learning process, the students were allowed to discover their writing topics based on their interest, gather data through interview, observation, and read from both hard and soft copies, evaluate and select the relevant collected data, write various drafts, gain feedbacks, work individually and in small groups, and reflect on their ways of learning writing. These steps were motivating to the students because the students were actively engaged in performing the writing tasks based on their willingness. In summary, it can be deduced that the students believed that using inquiry-based writing instruction has increased their motivation towards academic writing.

All in all, the questionnaire, focus group discussion and students' reflective journal results on students' motivation towards writing showed that using inquiry-based learning in writing classes increased students' self-efficacy, goal orientation, belief about writing, and affect about writing which are the core elements of motivation. Besides, it is also identified that the students believed that using inquiry-based learning in advanced writing skills course increased their motivation towards academic writing.

4.2. Discussion

The results of the study showed that inquiry-based learning had positive effects on students' academic writing performance, critical thinking skills, and motivation towards writing. The study revealed that using inquiry-based learning in writing classes had positive effects on students' academic writing performance including task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. It also showed that the students viewed using

inquiry-based learning in writing classes was effective to develop their writing performance since the method was helpful to produce sound academic texts.

The students' writing performance improvements were achieved as the result of using inquiry based writing instruction because the method focused on engagement (activating prior knowledge and writing topic discovery), exploration (gathering and evaluating information from personal, social, and library sources), explanation (writing drafts using the collected data, and producing final texts based on feedback and audiences interest), Extension (discovering new writing topics outside the classroom, and producing texts or essays on the real situations like what researchers and/or professional writers produced academic texts. As part of inquiry based learning, the students have continuously assessed their learning and have reflected on it in the classroom. In the learning process, the teacher provided scaffolding by observing, questioning, and guiding. In addition, the teacher also introduced relevant concepts, principles, and theories to help students develop a deeper understanding of their academic writing skills through inquiry. Hence, the engagement, exploration, explanation, extension, assessment and reflection, and the teacher support helped students improve their writing performance. Thus, this study revealed that using inquiry based learning improved students' writing performance since the method enabled the students to discover new ideas beyond the classroom, and make them active, problem solvers, autonomous, and lifelong learners.

Thus, this study revealed that using inquiry-based learning in writing classes developed the students' academic writing performance. This research finding was in line with previous research works including Boudreau (2017), Lee (2014), Ulfah (2012), Godbee (2016) & Escalante (2013). For instance, Boudreau (2017) revealed that inquiry based learning positively affected students'

English language learning because the process of inquiry and discovery are the central part of the educational endeavor. As a result, students needed the inquiry strategies and heuristics which helped them on how to write effective texts, and to grow as writers. Similarly, a study conducted to assess students' feedback on the effectiveness of inquiry learning in second language pedagogy showed that the method developed students' understanding of the course material (Lee, 2014).

As it was mentioned above, the findings of the present study indicated that inquiry-based learning developed EFL students' writing performance. This is because the method developed their performances to discover writing topics, generate ideas, gather and evaluate information from different sources, write up drafts with evidence, discuss with colleague and subject area experts, and produce effective academic texts. In line with this research, Bulut (2012) conducted action research to improve students' ability in writing skills through inquiry-based learning revealed that inquiry-based learning improved students' writing ability because the students have developed ideas that make their text more detailed, used correct grammatical sentences and appropriate vocabulary, created logical organization, increased their vocabulary range, and used correct mechanics. Similarly, Godbee (2016) found out that inquiry-based learning had positive effects on students' academic writing skills because the method focuses on ...learning writing by doing with little explicit instruction contrary to lecturing students on how to write. The results also indicate that the students see themselves as academic writers with real audiences beyond the classroom, learn the processes of posing and responding to questions, and connected with everyday concerns.

Inquiry-based learning developed students' performances toward writing topics, generate ideas, gather and evaluate information from different sources, write drafts with evidence, discuss with colleague and subject area experts, and produce sound academic texts. This finding is in congruence with Escalante (2013) that found inquiry-based learning has positive impacts on EFL students' linguistic skills in general and writing skills in particular. Through using inquiry based learning in English as a foreign language class, students improved their linguistic skills, and at the same time they learned different perspectives on a topic. Students who used inquiry based learning techniques in their language learning were better achievers in writing texts. The method also helped students to acquire vocabulary, explore grammatical structures, and negotiate meaning.

Besides, previous researchers including Rezeq & Elmassri (2019), Sihes et al (2014), Skills, (2016) and Palupi et al, (2020) also revealed similar findings that inquiry-based learning enhanced students' writing performance. For instance, Rezeq and Elmassri (2019) revealed that posing questions which is also known as inquiry-based learning developed the students' thinking as well as their written performance. Students have developed better written performance as they enhanced their question posing abilities in the learning process. They were able to provide a space for thinking and conceptual understanding, carry out inquiries, investigations, and process to easily figure out the main idea and pose questions. Similarly, Sihes et al (2014) also found that high school students in Makassar, Indonesia, performed better in their English writing skills when they were subjected to an inquiry method of learning. The students preferred and performed much better with the confirmation level of inquiry compared to other levels of inquiry including structured, guided, open, and authentic levels of inquiry because in the confirmation

level the teacher provided every needed condition. Likewise, Skills (2016) investigated the effect of argument-based inquiry approach on acquisition of written communicating skills and revealed that using inquiry-based learning enhanced students' acquisition of written communicating skills better than the conventional approach. In the same vein, Rahupi et al (2020) compared the effectiveness of guided inquiry learning and problem-based learning models on fifth-grade primary school students and confirmed that the guided inquiry learning model was considered more effective than problem-based learning for the explanatory writing activity due to the students' concrete operational age that still requires teacher's guidance in producing explanatory texts.

Likewise, Sandra & Karen (2019), Nurtalina (2013), Irawan et al (2015), & Ermawati et al (2017) also disclosed that using inquiry-based learning developed students' writing skills, which is in line with the findings of the current study. For example, Sandra and Karen (2019) investigated the effects of using shared inquiry to develop undergraduate students' writing skills at Flinders University, South Australia, and found that the learning method made students more effective academic writers and these are desirable traits for graduates to have no matter what path they take after graduation. In the same manner, Nurtalina (2013) showed that inquiry-based learning strategy improved narrative text writing ability of eighth-grade students of Prambanan Klaten, Indonesia when it was used in English teaching and learning process. Likewise, Irawan et al (2015) found that there were increasing scores of students' language ability such as in vocabulary and grammar aspects.

In addition, this study disclosed that using inquiry-based learning in writing classes was effective though there were various challenges like lack of adequate time in implementing the method.

However, in contrast to this finding, some previous studies such as Ulfah, 2012; Awada et al, 2020; Demircioglu & Ucar, 2015 showed reservations in this regard. As stated above, Ulfah (2012) found that inquiry-based learning improved most students' writing abilities because they have developed ideas that make their text more detailed, used correct sentences and appropriate vocabulary, created logical organization, increased their vocabulary range, and used correct mechanics. However, the same research (Ulfah, 2012) also revealed that inquiry-based learning is inappropriate for unmotivated students; it is not easy to do in a limited time, and difficult to implement if the students are familiar with the conventional way. The students were not effective to do some exercises, and often cheat their friends' work. In this case, the teacher has to give attractive media in the learning process. Inquiry-based learning is not easy to practice in a limited time. It needs longer time during implementation especially in discussing the topic, collecting information, and revising their writing. Inquiry-based learning is difficult to implement if the students are more accustomed to conventional way because students tend to write in the way they experienced before.

In the same fashion, Awada et al (2020) showed that only less skilled participants in the experimental group were able to significantly improve their argumentative writing skills. It implies that the medium and high achiever students do not show significant improvements when they used inquiry-based learning in their writing lessons, which is not incongruent with the current results of the study. The findings are not also resemble with Demircioglu & Ucar (2015) because these researchers revealed that no significant difference was observed in the argumentative scores between the groups that had inquiry instruction and those that had traditional instruction due to lack of adequate number of argumentative activities and

insufficient time to practice the given writing tasks. The researchers stated that the students engaged with argumentative writing in a very limited time only due to total class time constraints.

The results of the current study also revealed that using inquiry-based learning improved EFL students' critical thinking skills including interpretation, analysis, inference, evaluation, explanation, and self-regulation. In line with this research finding, previous studies also show that inquiry-based learning has positive effects on students' critical thinking skills. For example, Ash & Kluger-Bell (2012) found that students developed critical thinking skills, and learned how to generate and organize ideas through investigation and discussion to find out alternative ideas, and produced sound written papers. Inquiry-based learning is appropriate when deep discipline knowledge; higher-order thinking skills or strategies including reasoning skills; adequate motivational beliefs or attitude and value are intended as learning outcomes, rather than lower-order thinking skills like, to recall facts.

Besides, this finding is also in congruence with Ghaemi & Mirsaeed (2017) that revealed doing inquiry-based activities in EFL classroom increased the critical thinking ability of the students which enable them to analyse, evaluate, and explain information. Thus, it shows that using inquiry-based writing instruction enhanced students' critical thinking skills.

The findings also indicated that the students viewed using inquiry-based learning in writing classes as an effective method to develop their critical thinking skills because the method was helpful to write wideranging academic texts with strong evidence. Students thought that the critical thinking skills that they developed in the learning process can help them in their work life as novice graduates. The students claimed that they should be competitive enough to become

successful in their work life. So being a good critical thinker helps to think differently, and to be successful. They thought that critical thinking skills help learners to make good decisions in their real life situations apart from their working environment.

It implied that the students believed that their critical thinking skills including interpretation, analysis, evaluation, inference, explanation, and regulation were enhanced due to the inquiry-based writing instruction, and these skills are helpful to be lifelong learners in the same manner, Ghaemi and Mirsaeed (2017) underscored that most of the students who used inquiry based learning believed that their critical thinking abilities changed positively. In addition, a study conducted in Whittier College, USA to assess students' feedback on the effectiveness of inquiry-based teaching in second language pedagogy shows that the method reinforced students' understanding of the course material (Lee, 2014). Likewise, McLean (2005), Abdullah (2014), and Adege (2016) also unveiled that empowering critical thinking skills among students in higher education is especially in academic writing is essential to develop students' problem solving, decision making, and communication skills which are needed for their future carrier.

Moreover, Alameddine & Ahwal (2016) also disclosed that using inquiry based learning improved learners' critical thinking skills. Finally, Ulfah (2012) covered that using inquiry-based learning in writing classes developed students' critical thinking skills to integrate and organize relevant ideas. The researchers thus recommended that inquiry-based learning should be adopted as the method of teaching in English language classes. Therefore, it is worth mentioning that there should be opportunities for EFL students to have enough exposure to inquiry-based learning to develop their critical thinking skills.

Based on the findings of this study, all together, it can be understood that using inquiry-based learning in argumentative essay writing class has empowered students with critical thinking skills including interpretation, analysis, evaluation, inference, explanation, and regulation. In other terms, after the students used inquiry-based argumentative writing instruction, they have developed skills that could enable them to comprehend and express the meaning of their writing issues and judgments in their argumentative essays. They recognized the then argumentative issues and described them in their essays. The students have collected data on their writing topics and constructed categories of pro and opponent ideas for their argumentative essay development. They also paraphrased ideas taken from other sources in their own words.

These results indicate that the students have developed their interpretation skill which is one of the core critical thinking skills. In the same vein, the students have enhanced their analysis skill through inquiry-based learning. After the inquiry-based writing instruction, the students have identified the intended and actual inferential relationships among statements to express beliefs in their argumentative writing. The students examined ideas, detected analyzed arguments in their writing. They identified the similarities and differences between supporting and opposing ideas in developing their persuasive essays. The students drafted the relationship of sentences or/and paragraphs to each other and the main purpose of their argumentative essays. They also constructed convincing reasons to criticize a given argumentative idea arrived at strong concluding remarks.

Thus, it shows that the students have enhanced their analysis skill which is one of the core critical thinking skills. The results depicted that the students have developed their evaluation

skills using inquiry-based learning. In other words, in the teaching-learning process, the students have determined the credibility of their source of information while they gathered data for their writing topics. They assessed and compared the logical strengths and weaknesses of opposing arguments. They also judged whether the evidence at their hands did not contradict each other, and support their conclusion. Finally, they judged if their arguments in their argumentative essays were relevant and applicable in an existing real situation. It implies that the students have developed their evaluation skill, one of the core critical thinking skills, through using inquiry-based learning.

The students have also enhanced their inferences skill in writing their argumentative essays through inquiry. That is, the students have identified pertinent thoughts needed to draw reasonable conclusions in their essays. Beyond interpretation, analysis, evaluation, and inference, the students explained what they think, and how they arrived at their judgments in developing their essays. It shows that the students have developed their explanation skill through inquiry-based writing instruction. They have presented their argumentative essays in a cogent and coherent way. They stated and justified reasons in terms of their evidence and contextual considerations upon which their results were based. They presented their reasons in the form of persuasive arguments in their essays. They also reflected on the methods, procedures, and techniques (in the classroom) they used in writing their argumentative essays. Finally, the data gained from the student reflective journal and focus group discussion confirmed that the students have developed their self-regulation skills, which is one of the core critical thinking skills, through using inquiry-based learning.

Accordingly, the students approved that they self-consciously monitored or corrected their judgments in analysing and evaluating contradictory ideas in producing their argumentative essays. They questioned themselves to examine, to reconfirm their reasons for producing essays. They double-checked their reasons by recalculating their evidence. The students reconsidered their interpretations and judgments in view of further analysis. They revised their answers in view of the errors they discovered in their argumentative essay writing. Even, they have changed some of their concluding ideas according to the realization that they had misjudged the importance of certain factors when coming to their earlier decisions. In this study and the aforementioned previous studies revealed that inquiry-based learning enhanced students' interpretation, analysis, evaluation, inference, explanation, and self-regulation skills which are the core critical thinking skills.

Finally, the present study showed that using inquiry-based learning in writing classes increased students' motivation including self-efficacy, goal orientation, belief about writing, and affect about writing. This research finding is consistent with earlier research works by Nurtalina, 2013, Zeki et al, 2013, Ulfah, 2012, and McElvain & Smith, 2016. For example, Nurtalina (2013) who explored the effect of using inquiry-based learning strategy on students' writing ability showed that the students were active and motivated in the learning process when they were taught narrative writing skills using inquiry-based learning strategy. Accordingly, the use of inquiry-based learning helped the students' interest and enabled them to express their ideas in narrative writing.

Similarly, Zeki et al (2013) found that inquiry-based learning made positive contributions to the motivations of students in the subdimensions of existing goal orientation. Students' goal

orientation developed after the application of inquiry-based learning supports earlier research findings that concluded inquiry-based activities promote students' motivation. Inquiry-based activities raised students' motivation as the tasks gave students freedom in making their choice, provide them with opportunities to carry out self-regulation, and to take part in projects they are interested in.

Likewise, Ulfah (2012) also found that the students had a good response in learning writing skills using inquiry-based learning. They paid attention when the teacher explained the material and while they discussed their work in the classroom. In addition, the students tried to do the exercise seriously. They also did not feel ashamed asking about their difficulties and showing their work to their teacher and friends. The students felt more enjoyable, confident, and creative because they had high motivation than before. In the same vein, McEvain and Smith (2016) reported that there was a positive effect on students' bilingual ability, higher motivation to learn, and increased self-efficacy in the treatment group of students who used inquiry-based learning in a bilingual context.

In addition, the results of the study are also in line with the previous findings including Wadi (2018), Lee (2014), Alameddine and Ahwal (2016), and Zalloum (2018). For instance, Wadi (2018) noted that inquiry-based teaching techniques had positive impacts on increasing EFL/ESL students' teachers' motivations toward learning an English content-based course which indicates the effectiveness of the learning method in motivating students in English language courses. The students' teachers become critical of the knowledge they were exposed to in the course. Thus, Wadi (2018) found that inquiry-based teaching techniques proved to be an effective motivator to ESL/EFL learners to establish positive attitudes towards learning

theoretical content courses in the foreign language, which reinforces students' confidence in learning and using English as a foreign language. In the same fashion, Lee (2014) also found that inquiry-based teaching enhanced students' classroom engagement and fostered an effective and meaningful learning experience.

Most of the students confirmed that inquiry teaching enhanced their motivation in learning the target language because the dynamics of questioner process keep them more concentrated and away from distractions. Inquiry-based learning was quite effective in initiating and sustaining student-teacher interaction because the learning atmosphere becomes vigorous when students took the floor fervently. Accordingly, the students preferred the inquiry method rather than expository lecturing and considered the pedagogical method to be effective and meaningful. Students expressed enthusiasm for the method of learning and indicated that this approach reinforced their learning and understanding of the course material. As to the present research findings, Alameddine and Ahwal (2016) also explored the use of inquiry-based learning in language classrooms and found that learners enjoyed their lessons and performed the complex and demanding tasks. Similarly, Zalloum (2018) also found that inquiry-based learning does not only create a joyful and interesting learning setting for the students, but it also develops their pragmatic awareness and language skills. Students' investigation skills in inquiry-based learning developed their ability to implicitly address their needs and messages.

Nevertheless, though the present study revealed that inquiry-based learning increased students' motivation towards writing, some previous researchers found that using inquiry-based learning was not effective to increase students' motivation towards writing. To exemplify, Firssova et al (2014) who investigated the effects of using inquiry-based learning on students' motivation

revealed that the students had a general decrease of interest, rather than an increase in motivation. Similarly, Clark et al (2013) revealed that there was no indication that inquiry-based learning had any significant effects on the treatment group in terms of motivation.

To this effect, Firssova et al (2014) and Clark et al (2013) provided evidence that the method in language classroom is not effective in increasing student motivation and/or engagement. The group of students receiving traditional fully guided instruction showed a significant increase in motivation because topics were assigned to the control group to research so that their instruction could be fully guided compared to the treatment group. The treatment group's reading materials were less monitored because they were given autonomy in their search for resources. As a result of the minimally guided instruction, the students feel frustrated and experienced a decreased motivation for learning. The students engaged in inquiry-based learning were asked to find their resources for research and felt ill-equipped to determine their value, while students engaged in fully guided instruction were given all of their information resources and asked to determine what information would best support their purpose. As a result, these researchers suggested that inquiry-based learning is valid with explicit instruction rather than leaving students alone with no teacher support.

In the same fashion, Caputo (2014) revealed that inquiry-based learning is challenging for learners who may, for various reasons, react negatively to some aspects of the approach, such as the use of process-focused instruction, the requirement for learner independence, and the increased linguistic load put on students, which is not in congruence with the findings of the present study. Caputo (2014) showed that learners felt uncomfortable with new or unfamiliar pedagogic approaches when unprepared: consequentially, this emotional discomfort impeded

their learning of the target language. Caputo (2014) suggested allowing students to use their first language when engaged in more cognitively demanding and communicative aspects of inquiry-based learning. Besides, where teachers are not familiar with students' first language, it is also suggested to make learners aware of the benefits and difficulties of inquiry-based learning.

In sum, it is worth mentioning that inquiry-based learning was effective to develop students' academic writing performance and critical thinking skills and increase students' motivation towards writing. As a result, it is essential to note that there should be opportunities for EFL students to have enough exposure to inquiry-based learning to develop their writing skills and critical thinking skills and increase their motivation towards writing.

CHAPTER FIVE : SUMMARY, CONCLUSION , AND RECOMMENDATIONS

This chapter presents a summary of the study, concluding remarks on the major findings, and recommendations drawn from the findings.

5.1. Summary

The main objective of this study was to examine effects of inquiry-based learning on students' writing performance, critical thinking skills, and motivation. The research design of the study was quasiexperimental that employed a time series design with single group participants. A total of 21 EFL second-year undergraduate students who were enrolled in an advanced writing skills course in the Department of English Language and Literature, Woldia University were selected using comprehensive sampling method. The data were gathered through tests, questionnaires, focusgroup discussion, and students' reflective journal. The quantitative data were analysed with oneway repeated measures MANOVA , pairedsamples -test, and descriptive statistics, while the qualitative data were analysed through narration.

The results of the study revealed that using inquiry-based learning had positive effects on students' academic writing performance, critical thinking skills, and motivation. Particularly, the results of the descriptive statistics showed that the students' mean scores in the posttests were greater than those of the pretests which implies that the students' writing performance and critical thinking skills were improved after the intervention through using the inquiry-based writing instruction. The MANOVA test result also indicated that there was a significant effect of inquiry-based learning on students' writing performance and critical thinking skills.

The results of the textual analysis also revealed that the students have outperformed in the post test essays compared to the pre test essays in their writing performance including task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy due to using inquiry-based learning. In the same manner, the textual analysis showed that students have outperformed in the post essays compared to the pre essays on their critical thinking skills including interpretation, analysis, evaluation, inference, and explanation compared to the pre intervention essays.

The paired sample t-test which analysed the questionnaire data on the comparison of students' motivation before and after the intervention also exhibited that the score of the post tests were higher than the mean score of the pretests in each part. It implied that using inquiry-based learning increased students' efficacy, goal orientation, and belief and affect about writing which are the core elements of motivation towards writing. Besides, the students in their focus group discussion and reflective journals also confirmed that using inquiry-based learning in writing classes was effective to develop their academic writing performance and critical thinking skills and to increase their motivation since the method enabled them to discover their knowledge. Therefore, the findings revealed that using inquiry-based learning developed students' academic writing performance and critical thinking skills, and increased students' motivation towards writing.

5.2. Conclusion

Based on the findings of the study, it is possible to conclude that English major second year undergraduate students at Woldia University developed their academic writing performance, critical thinking skills, and increased their motivation through using inquiry-based learning. First, the findings revealed that using inquiry-based learning developed students' academic writing performance in terms of task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. Besides, they were also able to develop good topic sentences, thesis statements, and supportive ideas.

Second, the findings disclosed that inquiry-based learning had positive impacts on students' critical thinking skills which include interpretation, analysis, inference, evaluation, explanation, and self-regulation. When the students used inquiry-based learning in their academic writing classes, they comprehended and expressed their essay writing queries (interpretation); identified and examined arguments, reasons, and claims (analysis); identified elements of claims, estimated alternatives, and drew reasonable conclusions in writing their argumentative essays (inference). In the same manner, they also assessed the credibility of claims and quality of arguments made in their conclusions (evaluation); stated results, justified procedures, and presented arguments (explanation), and consciously monitored and corrected their writing activity (self-regulation) in producing argumentative essays.

Third, the findings revealed that through using inquiry-based learning the students increased their academic motivation that includes self-efficacy, goal orientation, belief and affect about writing. The students thought that although writing is not a simple task, in general, learning writing

skills through inquiry-based learning is interesting since it enabled them to learn writing by doing rather than memorizing facts.

All in all, the findings of the study disclosed that using inquiry-based learning in writing classes had significant positive effects on EFL students' academic writing performance, critical thinking skills, and motivation. The method had developed the students' academic writing skills and critical thinking skills, and increased students' motivation because it enabled them to discover writing topics, generate ideas, gather and evaluate information, write drafts with evidence, discuss with colleague and subject area experts, and produce sound essays. Therefore, inquiry-based writing instruction is suggested as a means to improve students' academic writing skills and critical thinking skills and increase students' motivation because the method incorporates activity-oriented learning, logical arguments, and collaboration. This is to imply the need to promote inquiry-based writing instruction which is based on a discovery approach that involves students in seeking, collecting, analysing, synthesizing and evaluating information based on students' interest. It is because using inquiry-based learning in writing classes made students active, problem solver, autonomous, and lifelong learners.

5.3. Recommendations

Based on the findings and conclusions made above, the following recommendations are forwarded.

The findings showed that using inquiry-based learning had developed students' academic writing performance and critical thinking skills, and increased students' motivation towards writing. As a result, it is recommended that EFL writing teachers should use inquiry-based learning in their classrooms to develop students' academic writing performance and critical thinking skills and increase students' motivation.

Based on the findings of the study, the inquiry-based learning principles incorporated in the teaching material were effective to develop the students' writing performance and critical thinking skills. Accordingly, academic writing teaching material developers need to consider the inquiry-based learning principles in developing language teaching material so that students improve their academic writing performance and critical thinking skills.

The findings also revealed that the students had produced better academic texts after using inquiry-based learning in their writing classes. Thus, it is recommended that students should use inquiry-based learning to produce effective academic texts, to be critical thinkers, and become lifelong learners.

Finally, the present study had focused on writing skills only, excluding other language skills. Therefore, future studies should be also conducted on the use of inquiry-based learning on other English language skills to widen the use of this discovery method of learning in EFL context.

REFERENCES

- Abdullah, T. (2014). Developing Critical Thinking Skills through Writing in an Inquiry-Based Environment. *International Journal of Humanities and Social Science*, 4 (1), 178-189.
- Abrams, E., Southerland, S.A., and Silva, P.C. (2008). *Inquiry in the classroom: Realities and opportunities*. Information Age Publishing.
- Adege, A. (2016). The Effects of Explicit Instruction in Critical Thinking on Student Achievement in Writing Academic Papers, General Critical Thinking Ability, And Critical Thinking Dispositions [Doctoral Dissertation]. Addis Ababa University.
- Alagozlu, N. (2007). Critical thinking and voice in EFL writing. *Asian EFL Journal Quarterly*, 9(3), 118-136.
- Alake, E. (2014). Inquiry-based science teaching competence of pre-service primary teachers. Wageningen: Wageningen University. ISBN: 978-94-6257-001-6.
- Alameddine, M. and Ahwal, H. (2016). Inquiry-based Teaching in Literature Classrooms. *Procedia- Social and Behavioral Sciences* 232 (2016) 332-337.
- Alamirew, G. (2005). A Study on the Perception of Writing, Writing Instruction, and Students' Writing Performance [Doctoral Thesis]. Addis Ababa University.
- Alberta Learning (2004). *Focus on inquiry: A teacher's guide to implementing inquiry-based learning*. Edmonton, Alberta Canada.
http://www.learning.gov.ab.ca/k_12/curriculum/bySubject/focusoninquiry.pdf

Alemu, H. A. (2004). An Evaluative Study of ELT Practices in Secondary Schools in Ethiopia, 1994-2004 [Doctoral Thesis]. Central Institute of English and Foreign Languages. India.

American Association for the Advancement of Science. (1999). AAAS Project 2062: Middle Grades Science Textbooks Evaluation: Criteria for Evaluating the Quality of Instructional Support. Washington, DC: AAAS.

Arthur, D. (2004). The Effect of Inquiry-Based Instruction on Students' Participation and Attitudes in a Third Grade Science Classroom [Master's Thesis]. Florida: University of Central Florida.

Ash, D. & Kluger-Bell, B. (2012). Identifying inquiry in the K-5 classroom. Retrieved from http://www.nsf.gov/pubs/2000/nsf99148/ch_10.html

Atkin, J.M. and Karplus, R. (1962). Discovery or Invention? The Science Teacher, 29.

Awada, G., Burston, J. & Ghannag, R. (2020). Effect of student team achievement division through WebQuest on EFL students' argumentative writing skills and their instructors' perceptions. Computer Assisted Language Learning, 33(3), 275-300.

Banchi, H., and Bell, R. (2008). The Many Levels of Inquiry. Science and Children, 46(2), 26-29.

Barron, B. and Darling-Hammond, L. (2010). Prospects and challenges for inquiry-based approaches to learning. In H. Dumont, D. Istance, & F. Benavides (Eds.), The nature of learning: Using research to inspire practice, 199-225. Paris: OECD Publishing.

Barrow, L.H. (2006). A Brief History of Inquiry: From Dewey to Standards. Journal of Science Teacher Education, 17(3), 265-278.

- Bekele, B. A. (2011). The Relationships of Self-esteem and Gender to Writing Performance: AMU Year I students in Focus [Master's Thesis]. Addis Ababa University.
- Beyer, B. K. (2001). Putting it all together to improve student thinking. In A. L. Costa (Ed.), *Developing minds: A resource book for teaching thinking* (2nd ed., 417-424). Alexandria, VA: Association for Supervision and Curriculum Development.
- British Council. (2018). IELTS Task 2 Writing Band Descriptors. Public Version.
- Borich, G. (2006). Introduction to Thinking Skills. In A. Choo Ong and Gary D. Borich (Eds), *Teaching strategies that promote thinking: Models and Curriculum Approaches*. Singapore: McGraw-Hill Education, 16.
- Boudreau, N. S. (2017). A Principled Revolution in the Teaching of Writing. *English Journal*, 106(5), 7075.
- Brune, M. (2010). The Inquiry Learning Model as an Approach to Mathematics Instruction [Master's Thesis]. Boise State University.
- Bruner, J.S. (1961). The Act of Discovery. *Harvard Educational Review*, 31(1), 21-32.
- Bryant, R. (2006). Assessment results following inquiry and traditional physics laboratory activities. *Journal of College Science and Teaching*.
- Buranapatana, M. (2006). Enhancing critical thinking of undergraduate Thai students through dialogic inquiry. [Doctoral dissertation]. Australia: Canberra University.
- Bybee, R. W. (2002). BSCS 5E instructional model. BSCS.

- Cavdar G. & Doe, S. (2012). Learning through Writing: Teaching Critical Thinking Skills in Writing Assignments *Political Science and Politics*, 45(2), 1-9.
- Caputo, L. (2014). Using Inquiry-Based Learning to Teach Additional Languages in a High School Context,, In *Inquiry-Based Learning for the Arts, Humanities, and Social Sciences: A Conceptual and Practical Resource for Educators*, 169-291.
- Chang, C. and Mao, S. (1998). Effects of an inquiry-based instructional method on earth science students' achievement (ERIC document reproduction service no. ED 418 858).
- Chu, K. (2009). Inquiry project-based learning with a partnership of three types of teachers and the school librarian. *Journal of the American Society for Information Science and Technology* 60 (8): 1671-86.
- Clark, D. (1999). A time capsule of training and learning: Constructivism. Retrieved from <http://www.nwlink.com/donclark/hrd/history/constructivism.html>
- Clark, R., & Sweller, J. (2013). Putting students on the path to learning: The case for fully guided instruction *American Educator* 6(11).
- Daniel, D. (2004). Observations and reflections of higher education teachers on the quality of teaching and learning in higher education in Ethiopia. *Ethiopian Journal of Education*, 1(1), 63-81.
- Darling-Hammond, L. (2009; 1997). The right to learn: A blueprint for Creating Schools that Work,, In C. Kridel (Eds.), *Classic Edition Sources: Education*, 54-58.

- Dawit, A. (2013). Enhancing students' writing skills through the genre approach. *International Journal of English and Literature*, 4(5), 242-248.
- Dawit, M. & Yalew, E. (2008). The role of teachers in the teaching learning process and the development of education: past, present, and future. A paper presented in an educational seminar held in August 2008. (Amharic version)
- Demircioglu, T. and Ucar, S. (2015). Investigating the Effect of Argument-Driven Inquiry in Laboratory Instruction. *Educational Sciences: Theory & Practice*, 15(1), 267-283.
- Dewey, J. (1910). *The Influence of Darwin on Philosophy and other Essays in Contemporary Thoughts*. New York, NY: Henry Holt and Company.
- Dewey, J. (1938). *Logic: The Theory of Inquiry*. New York: Henry Holt and Company.
- Dewey, J. (1982). Looking back: My pedagogic Creed. *Language Arts*, 59(6), 539-542.
- Dewey, J. (1997). *How We Think*. New York: Dover Publications.
- Dixon, F., Cassady, J., Cross, T., and Williams, D. (2005). Effects of Technology on Critical Thinking and Essay Writing among Gifted Adolescents. *Procur Journal*, 16(4), 180-189.
- Donyaie, S, and Afshar, H. (2019). EFL Teachers' Reflective Journal Writing: Barriers and Boosters. *Iranian Journal of Language Teaching Research*, 7(3), 71-90.
- Eccles, J. and Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109-132.

- Edward, H. (1983). Writing: Process and Conventions. *American Journal of Speech-Language Pathology*, 11.
- Eisenkraft, A. (2003). Expanding the 5E model: A proposed 7E model emphasizestransfer of learning and the importance of eliciting prior understanding. *The Science Teacher*, 70(6), 56-59.
- Elliot, N. (1995). Narrative discourse and the basic writer. *Journal of Basic Writing* 14(2), 1930.
- Emily, R. (2011). Motivation: A Literature Review. Pearson Research report.
<http://www.pearsonassessments.com/research>
- Ermawati, N., Yunus, N. and Pammu, A. (2017). The implementation of inquiry-based learning to reading comprehension of EFL students. *International Journal of Science and Research (IJSR)*, 6(3).
- Escalante, P. A. (2013). Inquiry-Based Learning in an English as a Foreign Language Class: A Proposal. *Journal of Modern Language* 49, 479-485.
- Facione, P.A. (2000). The disposition toward critical thinking: Its character, measurement, and relation to critical thinking skill. *Informal Logic* 20(1), 61-84.
- Facione, P. A. (2011). Critical thinking: what it is and why it counts. Millbrae, CA: Measured Reasons and The California Academic Press.
- Facione, P., and Facione, N. (1994). Holistic Critical Thinking Scoring Rubric. Santa Clara University. http://www.insightassessment.com/pdf_files/rubric.pdf

- Facione, P. A., Facione, N. C., & Giancarlo, C. A. (2000). The disposition toward critical thinking: Its character, measurement, and relationship to critical thinking skills. *Informal Logic*, 20(1), 61-84.
- Facione, P.A. (2015). Critical thinking: what it is and why it counts. *from APA report: Expert consensus statement on critical thinking.*
- Ferris, D., & Hedgcock, J. (2013). *Teaching L2 composition: Purpose, process, and practice.* Mahwah, NJ: Routledge. New York, NY: McGraw-Hill.
- Firssova, O., Kalz, M., Borner, D., Prinsen, F., Rusman, E., Ternier, S., and Specht, M. (2014). Mobile Inquiry-Based Learning with Sensory Data in the School: Effects on Student Motivation. C. Rensing et al. (Eds.): *EDL 2014, LNCS 8719*, 112-124.
- Frisby, C. L. (1991). Thinking skills instruction: What do we really want? *The Educational Forum*, 56(1), 21-35.
- Gardner, J.L. (2012). *Inquiry-Based Approaches in the Secondary Mathematics Classroom.* (Master's Thesis) Michigan University.
- Ghaemi, F., & Mirsaeed, S. (2017). The impact of inquiry-based learning approach on critical thinking skill of EFL students. *EFL Journal*, 2(2), 89-102.
- Gibson, H. & Chase, C. (2002). Longitudinal Impact of an Inquiry-Based Science Program on Middle School Students' Attitudes toward Science.
- Godbee, B. (2016). Why Inquiry Matters: An Argument and Model for Inquiry-Based Writing Courses. *The Wisconsin English Journal*, 58(2), 7-21.

- Goodwin, B. (2014). Teach critical thinking to teach writing. *Educational Leadership*, 71(7), 7880
- Graham, S., MacArthur, C. A., & Fitzgerald, J. (2013). *Best practices in writing instruction*. New York: Guilford Press.
- Griffiths, C. and Parr, J.M. (2001). Language Learning Strategies: Theory and Perception. *Journal* 55(3), 247-254.
- Hamid, A. A. (2010). Students' Problems with Cohesion and Coherence in EFL Essay Writing in Egypt: Different Perspectives. *Literacy Information and Computer Education Journal (LICEJ)*, 1(4).
- Hamid, A. M. (2011). *The EFL Essay Writing Difficulties of Egyptian Student Teachers of English: Implications for Essay Writing Curriculum and Instruction*. Doctoral Thesis, University of Exeter: Egypt.
- Hardin, C. (2009). Effectiveness and Accountability of the Inquiry-Based Methodology in Middle School Science. *Master's Thesis*, Dominican University of California.
- Harris, D.E. (2015). The Status, Roles and Challenges of Teaching English Language in Ethiopia Context: the case of Selected Primary and Secondary Schools in Hawassa University Technology Village Area. *International Journal of Sociology of Education*, 4(2), 182-196. doi: 10.17583/rise.2015.1515
- Haury, D.L., & OH, E.C. (1993). *Teaching science through inquiry*. ERIC/CSMEE Digest. Columbus, OH: ERIC Clearinghouse for Science, Mathematics and Environmental Education. Retrieved September 25, 2008.

- Henson, K.T. (2003). Foundations for learner-centred education: a knowledge base. *School of Education The Citadel Military College of South Carolina* 24(1) 515.
- Herron, M.D. (1971) The Nature of Scientific Enquiry. *The school review*, 79(2), 172-182.
- Hilsdon, J. (2010). Critical Thinking. Learning Development with Plymouth University. Retrieved from <http://www.plymouth.ac.uk/learn>
- Hillocks, J.G. (1986). Research on Written Composition. *Urbana*, 111 NCRE/ERIC
- Hinton, P., Brownlow, C., McMurray, I., and Cozens, B. (2003). *SPSS Explained*. Routledge, Tylor and Francis Group. London and New York.
- Ikuenobe, P. (2001). Questioning as an epistemic process in critical thinking. *Educational Philosophy and Theory* 33(4), 325-341.
- Irawan, Y., Syahrial, and Sofya D. (2015). The effect of using inquiry-based learning strategy on students speaking ability.
- Italo, B. (1999). A Comparison of the Effectiveness of Teacher versus Peer Feedback on Addis Ababa University Students' Writing Revision. *PhD Dissertation*. Addis Ababa University.
- James, R. (2006). Analysing the Effects of Inquiry-Based Instruction on the Learning of Atmospheric Science among Pre-service Teacher Education Students. *Michigan: Western Michigan University*.
- Jarrett, D. (1997). Inquiry strategies for science and mathematics learning: It's just good teaching. Portland: Northwest Regional Educational Laboratory.

- Jeremy, C. (2014)Self and Collective Efficacy Perceptions during Project-Based Learning Implementation[DoctoralDissertation]. Ashland University: Ashland.
- Jones, M. G., andBraderAraje, L. (2002). The impact of constructivism on education: Language, discourse, and meaning. *American Communication Journal* 5(3).
- Kaye, D. (2014)The Effect of InquiryBased, HandsOn Labs on Achievement in Middle School ScienceLynchburg: Liberty University.
- Kiernan, D. A. (2015)Inquiry-Based Teaching in the College Classroom: The Traditional Student(Doctoral Dissertation). Retrieved from <http://scholarcommons.sc.edu/etd/3169>
- Kizza, I. (n.d). Developing Intrinsic Motivation for Students' WritingUniversity of Tennessee at Chattanooga.
- Laerd Statistics. (2018)OneWay Repeated Measures MANOVA in SPSS Statistics StepBy-Step ProcedureLaerd Statistics[online] Available at:<https://statistics.laerd.com/spss-tutorials/oneway-repeatedmeasuresmanovausingspssstatistics.php>
- Lee, Y. H (2014). Inquirybased teaching in second and foreign language pedagogy. *Journal of Language Teaching and Research* 5(6), 1236-1244 Academy Publisher Manufactured in Finland.
- Lian, A. (2005)A dialogic model of inquiry in second language teaching: Toward the concept of a critical approach to pedagogic research(Doctoral Dissertation).University of Queensland, Brisbane, QLD, Australia.

- Lin, J. (2007). A Study of Students' Inquiry-Based Learning Experiences. Doctoral Dissertation. Athens: University of Georgia.
- Lister, C. (2015). A Framework for Implementing Inquiry-Based Learning in the Elementary Classroom. Master's Thesis. University of Victoria.
- Liu, C., and Chen, I. (2010). Evolution of constructivism. Contemporary Issues in Education Research, 3 (4), 63-66.
- Llewellyn, D. (2002). Inquire Within: Implementing Inquiry-Based Science Standards. Thousand Oaks, CA: Corwin Press, Inc.
- MacArthur, C.A., Philippakos, Z.A., & Graham, S. (2016). A Multi component nature of Writing Motivation with Basic College Writers. Learning Disability Quarterly, 39(1): 31-43.
- Marshall, J.C. (2007). 4E x 2 Instructional Model: Promoting stronger teaching and deeper conceptual understanding. Paper presented at the School Science and Mathematics Association, Indianapolis, IN.
- Marshall, J. C., Horton, B., & Smart, J. (2009). 4E x 2 Instructional Model: Uniting three learning constructs to improve praxis in science and mathematics classrooms. Journal of Science Teacher Education, 20(6), 501-516.
- Marshall, J.C. (2013). Succeeding with Inquiry in Science and Math Classrooms: What Framework Supports Effective Inquiry-Based Practice? Alexandria, VA: ASCD.
- Matowe, L. et al. (2003). Interrupted Time Series Analysis. Research Gate.

- McElvain, C. and Smith, H. (2016). Curiosity: Inquiry-Based Instruction and Bilingual Learning. *Journal of Curriculum and Teaching* 5(2).
- McLean, C. (2005). Evaluating Critical Thinking Skills: Two Conceptualizations. *The Journal of Distance Education* 20(2), 1-20.
- McMillan, J.H., and Schumacher, S. (1997). *Research in Education: A Conceptual Introduction*. (4th ed.). New York: Longman.
- Melles, G. (2009). Teaching and evaluation of critical appraisal skills to postgraduate ESL engineering students. *Innovations in Education and Teaching International* 46 (2), 161-170.
- Mesfin, A. (2013). *An Exploratory Study on the Implementation of the Process Approach to the Teaching/Learning of the Course Basic Writing Skills: The Case of Hawassa University*. [Doctoral Thesis]. Addis Ababa University.
- Mohamed, I. (2015). University Students' English Writing Problems: Diagnosis and Remedy. *International Journal of English Language Teaching* 8(3): 40-52.
- Moore, T. (2004). The Critical Thinking Debate: How General are General Thinking Skills? *Higher Education Research and Development* 23 (1), 3-18.
- Muhaimeed, S. (2013). *Task-Based Language Teaching Vs. Traditional Way of English Language Teaching in Saudi Intermediate Schools: A Comparative Study*. [Doctoral Thesis]. Kent State University.

- NRC. 2000. Inquiry and the National Science Education Standards: A Guide for Teaching and Learning. Washington, DC: National Academy Press.
- Nurtalina (2013). The Effect of Using Inquiry-Based Learning Strategy in the Writing Ability of the Eighth Grade Students of SMP Negeri 1 Prambanar Klaten. (MA Thesis). State university of Yogyakarta Indonesia.
- Owen, N. (2006). The Effects of Inquiry-Based Teaching on Attitudes, Self-Efficacy, and Science Reasoning Abilities of Students in Introductory Biology Courses at a Rural, -Open Enrollment Community College [Doctoral Dissertation]. Oklahoma State University.
- Ozmon, H. A. & Carver, S. M. (2008). Philosophical foundations of education (8th ed.). Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.
- Palupi, B., Subiyantoro, S., Rukayah, & Riyanto. (2020). The effectiveness of guided inquiry learning (GIL) and problem-based learning (PBL) for explanatory writing skills. International Journal of Instruction, 13(1), 713-730.
- Paris, S. G. & Turner, J.C. (1994). Situated motivation. In P.R. Pintrich, D.R. Brown, & C.E. Weinstein (Eds.), Student motivation cognition and learning: Essays in honor of Wilbert J. McKeachie (213-238). NY and London: Routledge Taylor and Francis Group.
- Paul & Elder (2007). A guide for educators to critical thinking competency standards: standards, principles, performance indicators, and outcomes with a critical thinking master rubric. The Foundation for Critical Thinking <http://www.criticalthinking.org/>

- Paul, R. W., and Nosich, G. M. (1992). *A model for the national assessment of higher order thinking*. Santa Rosa, CA: Foundation for Critical Thinking. (ERIC Document Reproduction Service No, ED 353296).
- Piaget, J. (1970). *Science of education and the psychology of the child*. New York: Viking.
- Piaget, J. (1973). *To understand is to invent: The future of education* (G. Roberts, Trans.). NY: Grossman Publishers.
- Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95, 667-686.
- Posten, H.O. (1984). Robustness of the t -sample t -test. In D. Rasch and M.L. Tiku (eds.), *Robustness of statistical methods and nonparametric statistics* (pp. 99-120). Dordrecht, Germany: Reidel.
- Qing, L., & Jin, S. (2007). An analysis of language teaching approaches and methods: effectiveness and weakness. *China Education Review*, 4(1), 69-71.
- Raffini, and James P. (1993). *Winners without Losers: Structures and Strategies for Increasing Student Motivation to Learn*. Boston.
- Reaume, R. (2011). *Pre-Service Teacher Perceptions of and Experiences with the Implementation of Inquiry-Based Science Teaching*. University of Windsor: Canada.
Retrieved from <http://scholar.uwindsor.ca/etd>

- Rezeq, R. and Elmassri, N. (2019). Enhancing students' writing performance by developing their posing questions abilities. Research Journal of English Language and Literature (RJELAL), 7(2).
- Richards, J. C., & Rodgers, T. S. (2001). Approaches and methods in language teaching. Cambridge: Cambridge University Press.
- Sandoval, W. (2005). Understanding students' practical epistemologies and their influence on learning through inquiry. Science Education, 89(4), 634-656.
- Sandra, E. and Karen, V. (2019). Using shared inquiry to develop students' reading, reasoning, and writing in the disciplines. Across the Disciplines, 16(3).
- Schwab, J. (1960). Inquiry, the Science Teacher, and the Education. The School Review. University of Chicago Press.
- Siheş A., Rais, S., Gaffar, M., Hamdan, A. and Yusof, S. (2014). Levels of inquiry-based learning on writing skill in English language among high school students. Journal of Language and Literature, 5(2).
- Skills, O. (2016). Effect of argument-based inquiry approach on acquisition of written communicating skills. International Journal of Scientific & Engineering Research, 7(6).
- Smolleck, L.D. Zimba Saul, C. & Yoder, E.P. (2006). The development and validation of an instrument to measure pre-service teachers' efficacy in regard to the teaching of science as inquiry. Journal of Science Teacher Education

- Sweetman, S. (2013). Teachers Developing Exemplary Inquiry Practices: Three longitudinal Case Studies (Doctoral Dissertation). University of Rhode Island. Retrieved from http://digitalcommons.uri.edu/oa_diss/3
- Turner, M. I., and Akin, M. (1997). Historical inquiry. In A. L. Costa & R. M. Liebmann (Eds.), *Envisioning process as content: Toward a renaissance curriculum*. pp. 185-198. Thousand Oaks, CA: Corwin Press.
- Ulfah, Y. (2012). Improving Students' Ability in Writing through Inquiry-Based Learning. Action Research.
- Vygotsky, L.S. (1986) *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wabisabi Learning (2018) Who Created Inquiry-Based Learning? https://wabisabilearning.com/blogs/inquiry/who-created-inquiry-based-learning?_pos=1&_sid=bc0af3a29&_ss=r
- Wadi, H. (2018) Supporting EFL students' learning of theoretical English through using an inquiry-based teaching technique. *English Language Teaching*, 11(8).
- Warner, A. and Myers, B. (2014) Implementing Inquiry-Based Teaching Methods. University of Florida, IFAS Extension <https://edis.ifas.ufl.edu>
- Wette, R. (2010). Evaluating student learning in a university EAP unit on writing using sources. *Journal of Second Language Writing*, 19(3), 159-177.

- Witt, C., & Ulmer, J. (2010). The impact of inquiry-based learning on the academic achievement of middle school students. Proceeding of the 2010 Western AAEE Research Conference.
- Wright, J. (2012). Six Reasons Why Students Are Unmotivated (and What Teachers Can Do). RTI Toolkit: A Practical Guide for Schools <http://www.interventioncentral.org/ccse>
- Wright, R. (2014). Motivation and Engagement in Inquiry-Based Learning with One to One iPads. Master's Thesis. Vancouver Island University.
- Yen, P.H. (2014). The Impact of PPP and TBLT on Vietnamese Students' Writing Performance and Self-Regulation [Doctoral Dissertation]. KU Leuven University.
- Yen, P.H. (2014). The Impact of PPP and TBLT on Vietnamese Students' Writing Performance and Self-Regulation [Doctoral Dissertation]. KU Leuven University.
- Young, A. (2013). Teachers' Understandings of Inquiry and Reported Use of Scientific Practices [Master's Thesis]. U.S.A: University of Maine.
- Zaida, N. (2013). A Framework of Incorporating Critical Thinking Skills in English Textbook for the Nine Graders of Indonesia. Second ELTLT International Conference Proceedings. ISBN 978602-196385-2.
- Zalloum, S. (2018). The Impact of Using Inquiry-Based Learning on Developing Ninth Grade Students' Pragmatic Awareness. Master's Thesis. Hebron University, Palestine.
- Zeki, B., Oskay, O., Erdem, E., Ozgur, S., and Sen, S. (2013). Effect of inquiry-based learning on students' motivation. Procedia- Social and Behavioral Sciences, 106(2013), 988-996.

APPENDICES

Appendix • A: Pre-test • 1

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

People believe that Facebook is the best social media. To what extent do you agree or disagree? Write an argumentative essay using over 250 words for or against this notion. Write your essay on the attached sheet of paper.

Appendix • B: Pre-test • 2

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

The growing number of smokers is putting a strain on the health care system in an effort to deal with the health issues involved. Some people think that the best way to deal with this problem is to legally prohibit smoking cigarette. To what extent do you agree or disagree? Write an argumentative essay using over 250 words arguing for or against this idea. Write your essay on the attached sheet of paper.

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

People believe that living in country side is better than in cities. To what extent do you agree or disagree? Write an argumentative essay using over 250 words for or against.

Appendix • D: Post-test • 1

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

People argue that Females' affirmative action should stop. What is your position on this argument? Write an argumentative essay of over 250 words for or against the view.

Appendix • E: Post-test • 2

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

There are university students who believe that condoms should not be made available in colleges. What do you think about this issue? Write an argumentative essay using over 250 words arguing for or against this view.

Time Allowed: 40 Minutes

ID. No _____

Gender: _____

INSTRUCTION

Some people believe that Universities should control their students' way of life. Write an argumentative essay using over 250 words arguing for or against this idea.

Appendix • G: Students' Questionnaire

Dear Students,

The purpose of this questionnaire is to obtain relevant information about your motivation towards argumentative essays and how much or how often you use them in learning and other real situations. Thus, you are kindly requested to give your responses honestly. Your responses will be used only for this research purpose.

Thank you in advance for your cooperation.

I. BACKGROUND INFORMATION

1. Gender: Male: _____ Female: _____

2. Age: _____

INSTRUCTION: Read the following items, and put a tick mark () on your level of agreement.

SA = Strongly Agree; 5 A = Agree; 4 U = Undecided; 3 DA = Disagree; 2 SD = Strongly Disagree; 1

No.	Items	Level of Agreement				
		SA	A	U	DA	SD
II	Self-efficacy for Writing					
1	I can write clear introduction.					
2	I can write essays with details to support the main ideas.					
3	I can write an essay with a strong conclusion.					
4	I can revise my paper to make it better.					
5	I can edit my papers to fix errors.					
6	I can discover a writing topic.					
7	I can generate ideas to write about.					
8	I can organize ideas to write.					
9	I can write grammatically correct sentences in my compositions.					
10	I can use a wide range of vocabulary in my compositions.					

III	Goal Orientation for Writing	SA	A	U	DA	SD
11	When I write, I try to improve how I express my ideas.					
12	When I write, I try to become a better writer.					
13	When I write, I try to better organize my ideas.					
14	When I write, I try to avoid making mistakes.					
15	When I write, I try to persuade others with my writing.					
IV	Belief About Writing	SA	A	U	DA	SD
16	Writing helps make my ideas clearer.					
17	Good writers discover new ideas while writing.					
18	Good writers need to revise their paper.					
19	Good writers have to be able to use a variety of sentence structures.					
20	Writing is one of the best ways to explore new ideas.					
IV	Affect about Writing	SA	A	U	DA	SD
21	Writing is one of my favorite activities.					
22	The process of writing is satisfying for me.					
23	I think that writing is interesting.					
24	I look forward to writing classes.					

Appendix • H: Students' Focus Group Discussion Items

1. Do you think that using inquiry-based learning increases your motivation towards writing such as your willingness and preference? If so, how?
2. Do you think that using inquiry-based learning in writing classes enhances your argumentative essay writing performance in line with task achievement coherence and cohesion, lexical resource, and grammatical range and accuracy? If so, how?
3. Do you think that using inquiry-based learning in writing classes empowers your critical thinking skills which include interpretation, analysis, evaluation, inference, description, and self-regulation)? If so, how?
4. If you have developed your critical thinking skills while you used inquiry-based learning in writing classes, do you think that critical thinking skills are helpful to your real-life situations?
5. What are the benefits and limitations of using inquiry-based learning in argumentative writing class?
6. What are the challenges of using inquiry-based learning in argumentative writing classes? Please, explain.
7. Do you have any idea that you want to add about inquiry-based learning? If so, please express your idea.

Appendix • I: Student-Reflective Journal

Dear students:

This student reflective journal is needed to gather data on ~~motivation~~ motivation towards writing and writing performance and critical thinking skills. Accordingly, read the following questions and write your answer in the spaces provided.

1. How do you evaluate the effectiveness of your ways of learning writing skills? Please, explain.

2. How do you express your motivation towards academic writing?

3. How do you express the effectiveness of the teaching material used in the inquiry-based learning process?

4. What is your feeling on your capability to accomplish writing task?

5. How do you see the contributions of the writing tasks to the development of your writing skills (task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy)?

6. How do you see the contributions of the writing tasks to the development of your critical thinking skills (interpretation, analysis, evaluation, inference, description, and- self regulation)?

7. What were the major problems encountered in the writing classes?

8. What measures should be taken to alleviate the problems?

9. Do you have any other thing that you want to write about the effectiveness of the lesson?

ARGUMENTATIVE ESSAY WRITING



INTRODUCTION

This teaching material is designed for the students who enrolled in advanced writing skills course. It focuses on various aspects of argumentative essay writing incorporating detecting fallacies, refuting, reasoning, and using solid evidence. The material is designed to enable students evaluate argumentative texts, argue persuasively and logically in writing, and write well-developed argumentative texts. Thus, the students will discover writing topics, discover supportive information, and produce argumentative texts using solid evidence.

TEACHING METHODS AND ACTIVITIES

The teaching method is designed to engage students in the whole process of writing. Accordingly, active learning method where the students actively participate in constructing their own knowledge is to be in place. In the teaching process, asking, investigating, connecting the topic to the learner, discussing, and reflecting are needed. Thus, the teaching methods are questioning, pair and group work, demonstration, and lecture.

STUDENTS' ACTIVITIES

Students need to engage in active participation during the learning process. The students are expected to do both class works and homework assignments. Accordingly, they will be engaged in discovering writing topics, discovering supportive information, producing their own essays. In doing so, the students will involve in posing questions, investigating and interpreting data, discussing with colleagues, and reflecting on their learning process. They will take notes during lectures. In sum, the students will analyze and produce their argumentative essays.

INSTRUCTOR'S ACTIVITIES

The instructor is a facilitator in the learning process. Thus, he/she need to facilitate questioning, show the necessary procedures, and provide model essays to the students. The instructor will facilitate pair and group discussions, and provide lectures. Besides, he/she is expected to provide written and oral feedback to the learners and assess students' performance at the end of each section.

ASSESSMENT

The assessment will be undertaken through self-assessment, peer assessment, group evaluation, and teacher evaluation. In other terms, the students will assess their argumentative essay writing performance. They will also cross-check their written essays with their partners' essays. The students will write essays and cross-check their text in groups. The teacher will evaluate the students' performance through tasks such as analyzing written essays and producing argumentative essays.

RESOURCES: Handouts, internet sources, blackboard/whiteboard, chalk/marker, and projector.

PART ONE: Essay Writing Overview

Learning Objectives

At the end of this part, students will be able to:

- define the meaning of essay
- describe the structure of an essays
- describe techniques of effective essay writing
- analyze written essays
- produce their own essays

Students, now you are going to learn about essay writing. In your essay writing lessons, you need to assess your learning by asking questions including what do you know, what do you want to know, how do you find out information, and what have you learned about essay writing. To do so, you can assess and record your learning performance using the following *f*KWHL,, chart which reminds you to ask yourself questions what do I Know, what do I Want to know, How do I find out, and what have Learned?. In the meantime of your learning, share your *f*KWHL,, chart with your colleagues for peer feedback.

K W H L C h a r t			
What <u>d</u> <u>o</u> <u>I</u> <u>k</u> <u>n</u> <u>o</u> <u>w</u>	What <u>w</u> <u>a</u> <u>n</u> <u>t</u> <u>o</u> <u>k</u> <u>n</u> <u>o</u>	<u>H</u> <u>o</u> <u>w</u> <u>d</u> <u>o</u> <u>I</u> <u>f</u> <u>i</u> <u>n</u> <u>d</u> i <u>n</u> f <u>o</u> r <u>m</u> a <u>t</u> i <u>o</u> n	What <u>h</u> <u>a</u> <u>v</u> <u>e</u> <u>I</u> <u>l</u> <u>e</u> <u>a</u> <u>r</u> <u>n</u> <u>e</u> <u>d</u>

ACTIVITY 1.1

Brainstorm what you know, what you want to know, and how do you find out information about essay writing using the above ,KWHLf chart.

1.1. What is an Essay?

Now, you are going to learn about essay writing in the following sections. The activity given below provides you an opportunity to discuss about the meaning of an essay.

ACTIVITY 1.2

Discuss on the meaning of essay with your colleagues.

What points have you understood from your group discussion? Read the following explanation and compare it with your previous understanding.

Essay is a group of related paragraphs. The main idea developed in the essay is called thesis statement. The thesis statement appears in the introductory paragraph, and it is then developed in the supporting paragraphs that follow. A short concluding paragraph closes the essay.

1.2. Structure of an Essay

ACTIVITY 1.3

What do you think about the structure of an essay? Do you know how a thesis statement, supportive paragraphs, and a conclusion structured in an essay? Please, join in pairs and discuss about the structure of an essay with your classmates.

Have you discussed about the structure of an essay? Now, you will look at the structure of an essay here below. Check if there are differences between the essay structure which is given below and your own that you have made in your discussion. The following diagram shows the structure of an essay.

Introductory Paragraph

Introduction	The introduction attracts the reader's interest.
Thesis statement	The thesis statement states the main idea.
Plan of development	The plan of development lists the points to be developed in the paper.
Points 1, 2, 3, etc.	The points are presented in the order in which they will be developed in the paper.

First Supporting Paragraph

Topic sentence (point)	The topic sentence advances the first supporting point for the thesis.
Specific evidence	The specific evidence for the first point is presented in the paragraph.

Second Supporting Paragraph

Topic sentence (point)	The topic sentence advances the second supporting point for the thesis.
Specific evidence	The specific evidence for the second point is presented in the paragraph.

Third Supporting Paragraph

Topic sentence (point)	The topic sentence advances the third supporting point for the thesis.
Specific evidence	The specific evidence for the third point is presented in the paragraph.

Concluding Paragraph

Summary, Conclusion	A summary of the main points and a brief restatement of the thesis statement, concluding the paper.
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ACTIVITY 1.4

Read the following essay carefully, and answer the questions given underneath. Then discuss your answers in pairs.

Teenagers and Jobs

The pressure for teenagers to work is great, and not just because of it is peer pressure to have a little bit of freedom and independence. In fact, when work becomes the primary focus. The concern we have is that when work becomes the primary focus, the valuable experience of the young. However, working more hours than adolescents because it reduces their involvement with school, and increases the chance of having problems with drugs and alcohol.

Schoolwork and the benefits of activities tend to go by the wayside hours. As more and more teens have to find jobs to help pay for their needs, teachers have faced increasing difficulties. The first step is to pick up and students who simply don't have time to do it. In addition, extracurricular activities that many consider a healthy influence are losing players to work, and sports events are poorly attended. All homework, extracurricular activities, and sports are exhausted and newspaper, for example, described a girl in Pennsylvania who can't aim for good grades, playing on two school athletic teams, and

Another drawback of too much work is that it may promote a false claim that working helps teach adolescents the value of a dollar. Some teens work to help out with the family budget. Some teens use their computers, game systems, clothes, and other things. These young people, some of whom earn \$400 or more a month, can't afford several years down the road, when they no longer have and so on. At that point, they'll be paying for necessities as well as luxuries. Finally, teenagers who work a lot are more likely than others to get in long hours they seek a quick release from stress by using drugs. Stress is probably greater in our society today. Teens who have money are more likely to get involved with drugs.

Teenagers can enjoy the benefits of working without the drawbacks, simply by limiting their work hours. As is often the case, a moderate approach will be

Here are the reading questions that you are supposed to answer.

1. Does the introduction of the essay attract your interest as a reader? How?

2. Write the thesis statement of the essay.

3. Are the points in the introduction presented in the order in which they developed in supportive paragraphs? How?

4. Write the topic sentence of the second paragraph.

5. How does the specific evidence of the second paragraph support its main idea?

6. Write the topic sentence of the third paragraph.

7. How does the specific evidence of the third paragraph support its main idea?

8. Write the topic sentence of the fourth paragraph.

9. How does the specific evidence of the fourth paragraph support its main idea?

10. Does the conclusion restate the thesis statement of the essay? How?

1.3. Effective Essay Writing Techniques

ACTIVITY 1.7

Before you directly embark on essay writing techniques, think about what techniques you have used in writing essays. Share your experiences with your classmates, and compare your understanding with the techniques discussed below.

In the whole essay writing process, you need to make observations; pose questions; examine sources; gather, analyze, interpret, and synthesize data; propose answers, explanations and predictions; communicate findings through discussion and reflection; apply your findings to the real situation outside the classroom, and follow up new questions that may arise in your essay writing process.

Writers are generally expected to be critical in writing texts because being critical in writing helps to consider the topic sentence in all directions. Therefore, asking yourself *five Whys* in your whole writing process is helpful to make your essay more effective in terms of reasoning skills. This is because while asking probing questions *what, who, where, and when* helps you to interpret the theme of your text at the introduction of the essay, *how, why, and what if* questions guides you to explain the situation in the body of the text. Finally, *is next* and *so* what questions lead to evaluate the issue and recommend for the future which is the closing remark of effective texts

Asking and answering questions helps to fulfill the three key connected functions of description, analysis and evaluation. These are reliable basis for introducing, discussing and drawing conclusions about your topic. You should aim to address most, but not necessarily all, of these questions for your topic and subtopics. The crucial questions for almost any topic *what*€, ... which identifies the issue *why*€, which explores in-depth, addressing causes and using theory; *how*€, which helps you look at the processes at work; and *so what*€, which helps you make

judgments or conclusions, showing that you have reflected on implications. More specifically, using Writing Process Sheets in essay writing is helpful to produce effective texts.

Writing Process Sheets (WPS) are step by step techniques that guide you to discover, choose and clarify a topic; discover supportive information; discover arrangements; discover stylistic choice and promote unity, specificity, and coherence. Read these techniques in the following sections, and compare them with your own writing experiences.

WPS 1: Discovering, Choosing and Clarifying a Writing Topic

ACTIVITY 1.8

How do you discover or choose and clarify your writing topic? Discuss in groups and compare it with the following probing questions.

In the absence of assigned topics, questions are helpful to discover, choose, and clarify a topic. If an assigned topic is there, the remaining task will be topic clarification. The questions in discovering, choosing, and clarifying topics involve three concerns of self, audience, and subject.

- Discovering a Writing Topic

 1. What is the content for my topic search?
 2. What is my tentative purpose?
 3. Who is my initial audience?
 4. What do I have in my head right now worth writing?
 - What technique does offer any clues?
 - Freewriting? Free association? My journal writing?
 5. What information do others have in their heads worth writing?
 - What technique/s will tap others' ideas?
 - Conversation? Question session? Group discussion?
 6. What subject areas offer possible ideas?
 - Personal Experience? Beliefs? Prejudices? Public feelings?

If you are not given a writing topic, the above questions can guide you to discover appropriate topics. However, how do you choose your best topic after generating lots of writing topics, or if

you are given a list of topics? The following writing process sheet can remind you how to select appropriate writing topics.

. Choosing a Writing Topic
1. What interests me in general? What do I get excited about?
2. What is generally important to me?
3. What concerns me physically, emotionally, intellectually?
4. Which topic would be interesting to my audience?
5. Which topic best complements my purpose?
6. Which topic receives the highest ranking once I have ranked all the topics?

How do you find the above questions? Are they helpful? You can also add your own questions to discover and choose effective writing topics. Next to topic discovery or selection, topic clarification follows. How do you clarify a given writing topic? Look at the following questions.

III. Clarifying a Writing Topic
1. What is the primary question this topic raises?
2. What are the issues that need consideration?
3. What are some issues the topic does not address?
4. How broad or narrow is my topic in terms of purpose and audience?
5. How long will the paper on this topic be?

The above questions can help you to clarify your writing topic in terms of your purpose and audience.

ACTIVITY 1.9

Discover your own essay writing topic and clarify it using the above Writing Process Sheet.

Next to having a clarified topic, you need to discover supportive information about your topic. Before you read about it, look at the following activity.

ACTIVITY 1.10

How do you discover supportive information for your topic? What could be your sources of information? What methods would you like to use for data collection? Discuss in groups.

WPS 2: Discovering Supportive Information

When you discover your supportive information, you can discover personal sources, social sources, and library sources through conducting interview, survey and note-taking. You can discover your personal sources using your journal, and the experiences of your friends. Similarly, you can gather data from the society using interview and surveys. When you go to the library to find supportive information on your topic you can use both soft and hard copy materials. However, you ought to evaluate the library sources before incorporating them into your essay. Also, you need to be careful about plagiarism when taking notes. Accordingly, the following writing process sheet will provide you specific techniques that can help you to discover personal sources, social sources, library sources, and how to take notes, and conduct interviews.

1. Locating Information

1. What information can I find about my topic through
2. What do I know about my topic?
3. What contributions can my friends make?
4. What information can I gain from social sources?
5. What information can an interview or survey provide?
6. What information does the library have on my topic?
7. What should I remember about plagiarism when I start taking notes and conducting interviews?

II Preparing an Interview

Topic: _____
Audience: _____
Purpose: _____

Interviewee: _____
Relationship to the topic: _____
Time: _____
Place: _____
Method: _____

1. What types of questions am I going to ask?

Yes/No	Multiple Choice	Open-ended	Direct	Hypothetical	Optional

2. What are the questions?
3. How am I going to order them?
4. Do I categorize the questions thematically?
5. Where is my concluding idea of the intervention?
6. What kind of relationship should I have with the interviewee?
7. How am I going to establish interviewee rapport?
8. How am I going to respond to his/her answers?

When you take notes from various sources, you need to critically evaluate the sources in line with your purpose. The following questions help you to gather relevant information through critical evaluation.

I. Note Taking

1. Is this information accurate? _____
2. Is the information biased? _____
3. Is the information authentic? _____
4. Is the information current? _____
5. Is the information helpful? _____
6. What is the source's main idea? Purpose? Audience? _____
7. What type of evidence does the source offer? _____
8. What is crucial to the good use of the source? _____
9. How can the sources themselves be grouped? _____
10. Does the source material suggest something to change? _____

The above process sheet guides you how to collect relevant information on your writing topic using interview and note-taking techniques. Thus, using these techniques you can gather appropriate information from different sources.

ACTIVITY 1.11

Discover supportive information to your previous essay writing topic based on the above Writing Process Sheet.

Now, having the collected data at hand, you should think about the information you gathered, evaluate its relevance, and select the relevant information to be incorporated in your paper. You can use the following writing process sheet to refine your collected information.

WPS 3: Discovering Arrangements

Evaluating Information

1. Does the collected information fit my topic?
2. Does the collected information fit my purpose?
3. Does the collected information fit my audience?
4. Do I have information for introduction?
5. Does the collected information have adequate detail?
6. Do I have information for conclusion?

Having refined data at hand, you need to discover arrangements. Arrangement, in this sense, means the order of ideas in which you decided what should come first and what should be next.

The following process sheet can help you with how to arrange your refined information.

II. Drafting for Arrangements

1. Are there any clues in my reading that suggest a
2. Are there any clues in the composing content that
3. Does the basis for my primary subject suggest arrangements
4. Does how I join ideas into a synthesis suggest a
5. Does the wording of my primary or secondary argument
6. Does the relationship between the parts of my material
7. Does the sectioning of my material in my preliminary

The above process sheet guides you to arrange your refined data. Therefore, after arranging the information you gathered and refined, next is to write drafts in your own words using the concepts you gained from your exploration. You need to interpret and analyze data, provide evidence, communicate ideas, and justify conclusions. In other words, you will organize the information gathered and create your essay considering your audience. You thoroughly write drafts by evaluating, selecting, combining, and synthesizing your collected data. In addition, you may compare, contrast, organize and sort, make connections of ideas, and draw inferences from your findings.

ACTIVITY 1.12

Discover your arrangements to your collected data using the above Writing Process Sheet

WPS 4: Discovering Stylistic Choice

When you produce your writing drafts, you have to discover stylistic choices. Discovering stylistic choice means to adjust your level of usage to match your audience, subject, and purpose. It also refers to distinguishing between denotations and connotations in word choice and considering emphasis in phrasing. You need also increase your vocabulary, and precise and wordy constructions. You should think over how you can use your introduction and conclusion together to frame your message, orient your reader, and establish the significance of your paper. The writing process sheet given below will support you how to write your introduction and conclusion.

I. Developing Introductions

1. Which of the following writing devices seems appropriate to the subject, purpose, and audience?

Questions Quotation Striking details or description
Narrative or anecdote Starting with a personal example

2. What raw material do I have to bring my evidence?
3. What material can I generate to show my interest?
4. How can I link my interest and generalization together?
5. Will my introduction orient my reader to my subject? Purpose?
6. Will it provide necessary information to my readers and

II. Developing Conclusions

1. What is the significant point of the paper that should be stated in my conclusion?
2. Will my conclusion explicitly or implicitly state it in my conclusion?
3. What raw material do I have for my conclusion?
4. What material can I generate for my conclusion?

5. Could any of the following devices be an appropriate closure?

Summary questions Personal Application
General Application Specific details

6. Will my conclusion provide a sense of closure for my reader?
7. Will it prompt the reader to think about my ideas and myself?

ACTIVITY 1.13

Discover your own stylistic choice and write the introduction and conclusion of your essay. The above writing process sheet can guide you in doing so.

WPS 5: Using Style to Promote Unity, Specificity, and Coherence

When you develop your writing drafts, you need to revise and edit your essay to make your creation clear, concise, consistent, and appropriate for the audience. You revise your drafts for unity, coherence, and completeness, and edit for mechanical problems. The following writing process sheet can help you with how to revise your written drafts.

Promoting Unity, Specificity, and Coherence

1. What is the main idea of my paper? Its purpose? Its audience?
2. Does my reader have specific expectations concerning my paper?
3. What point of view (perspective) is my subject? Purpose? Audience?
4. Would presenting multiple points of view be appropriate and effective? If so, which would be the best method of their presentation?
5. How can I promote specificity through concrete language?
6. How can I use sentence combining to reduce vague references and unnecessary repetition?
7. How can I promote coherence through development of a meaningful cohesive device?

In your revision, you should work with peers, the teacher, and experts to get feedback. Your peers, the teacher, and experts can provide you feedback about the strengths and weaknesses of your written draft; comment on what things would further enhance your essays and why. The teacher will also introduce relevant concepts, principles, and theories to help you develop deeper understanding. Finally, incorporating all the necessary feedbacks you gained, you can produce your final proofread essays.

Now, reread your written essay and revise for unity, specificity, and coherence of ideas using above Writing Process Sheet. Finally, write the final draft of your essay, and reflect it in the classroom.

ACTIVITY 1.14

Write an essay of five paragraphs having 250-300 words on any issue which is interesting to you, and reflect it in the classroom. Using the ,KWHLf chart and Writing Process Sheets would be helpful to guide you on the whole process of your essay writing journey.

Now, it is time to reflect on what you have done in your writing process. You can assess your essay writing process, and reflect on what you have learned and how you learned using the ,KWHLf chart. In addition to this reflection, your teacher will give you a chance to orally present what you have ~~learn~~ ^{written}, how you wrote your essays, and what you have learned in your essay writing journey.

PART TWO: Producing Argumentative Essays

Learning Objectives

At the end of this part, students will be able to:

- describe the nature of argumentative essay
- analyze written argumentative essays
- produce argumentative essays

The ability to advance sound and compelling arguments is an important skill in everyday life.

We can use persuasion to get an extension on a term paper, obtain favor from a friend, or convince an employer that we are the right person for a job. Understanding persuasion based on clear, logical reasoning can also help us see through sometimes, faulty arguments advanced by advertisers, editors, politicians, and others who try to bring us over to their side. Thus, learning about argumentation is that much worth life.

Students, before you go to the detailed account of argumentative essay writing, it is better to assess your existing performance writing argumentative essay. Look at the following probing questions, and write your answers in your notebook.

ACTIVITY	1. What do I know about argumentative essay writing?
PROBING	2. What do I want to know about argumentative essays?
QUESTIONS	3. How do I find out information about argumentative essays?

Read the following explanation about the meaning of argumentative essay, and compare it with the idea you got from the discussion.

2.1. What is Argumentative Essay?

ACTIVITY 2.2

What is argumentative essay? Discuss in small group essay, and compare your understanding with the following

Argumentative essay is a type of essay in which a writer attempts to support a ~~claim~~ ^{claim} or to defend a position on which there is a difference of opinion. An argumentative essay takes a firm stand on an issue and then attempts to convince readers to agree with that stand. Argumentative writing utilizes logic and reason to show ~~that~~ ^{one} idea is more legitimate than another idea. The argument must always use sound reasoning and solid evidence by stating facts, giving logical reasons, using examples, and quoting experts.

What is unique in argumentative essay is that you do not ~~just give~~ ^{use} reasons to support only your point of view, but you must also discuss the ~~other~~ ^{other} reasons and then rebut the ~~Rebut~~ ^{Rebut} means to point out problems with the other side's reasons to prove that they are not good reasons. This is because the writer wants readers to know that he/she has considered all sides of the issue. When the writer shows this, he/she is reasonable and ~~impartial~~ ^{impartial}: readers are more likely to read and be convinced.

2.2. Organizing Argumentative Essays

ACTIVITY 2.3

How did you organize opposing ideas in your argument and discuss on your experiences ~~if you are organizing~~ ^{if you are organizing} argument

Argumentative essays can be organized in several ways. The most common methods are the block pattern and the point-by-point pattern as discussed here below:

Block Pattern	Point-by-Point Pattern
<p>I. Introduction (Explanation of the issue) Thesis statement</p> <p>II. Body</p> <p style="padding-left: 40px;">Block 1</p> <p style="padding-left: 20px;">A. Summary of other side's arguments B. Rebuttal to the first argument C. Rebuttal to the second argument D. Rebuttal to the third argument</p> <p style="padding-left: 40px;">Block 2</p> <p style="padding-left: 20px;">E. Your first argument F. Your second argument G. Your third argument</p> <p>III. Conclusion (Include a summary of your point of view)</p>	<p>I. Introduction (Explanation of the issue, including a summary of the other side's view) Thesis statement</p> <p>II. Body</p> <p style="padding-left: 20px;">A. Statement of the other side's first argument and rebuttal with your own counterargument B. Statement of the other side's second argument and rebuttal with your own counterargument C. Statement of the other side's third argument and rebuttal with your own counterargument</p> <p>III. Conclusion (Include a summary of your point of view)</p>

• The key points in argumentative essay writing are:

1. Explanation of the issue
2. Clear thesis statement
3. Summary of the opposing arguments
4. Rebuttals to the opposing arguments, and
5. Your own arguments

2.3. Analyzing Argumentative Essays

ACTIVITY 2.4

Read the following argumentative essay on *Separating the Sexes, Just for the Middle School Years* and answer the questions given below.

1. In which paragraph does the writer give background information to help readers understand the issue?
2. Does the thesis statement mention both sides of the issue, or does it give the writer's point only?
3. How many opposing arguments are given? Where are they given?
4. Where does the writer rebut the opposing arguments: in one paragraph or separate paragraphs?
5. What is the function of the last paragraph?
6. Which type of organization does this essay use: Block or Point-Point?

Separating the Sexes, Just for the Middle School Years

The middle school years (grade 7 and 8) are known to be the most difficult years of a child's life. This is due to the uneven pace of girls' and boys' physical and cognitive development. Girls are ahead of boys on all counts, and both suffer. Educating girls during these difficult years might improve students' academic achievement. A law that prohibits single-sex education in public schools that receive federal funds is now prohibited in public schools that receive federal funds. A law that prohibits them is under consideration. Although some parents oppose it, there is some evidence that separating the sexes could have a positive impact on students' academic achievement.

Opponents of single sex education claim that test scores of students in single sex classes are higher than those of students in mixed classes. However, the research shows no improvement in test scores, other than in the area of self-confidence. More important, many psychologists believe that test scores are not the best measure of a student's achievement. They believe that confidence and self-esteem are more important than test scores. In single sex classes, girls report increased confidence and improved academic achievement. For example, these are results that cannot be calculated by a test score.

successful adults after the difficult years of middle school are possible. Carol Gilligan is certain that girls are more likely to be educated apart from boys in middle schools. She says that boys do not compete with girls. Boys at this age become angry and fight when they feel inferior when compared to girls, who literally out-think them and are more at ease with themselves and more receptive to learning.

Opponents also maintain that separate classes (or separate schools for females) can't work together. They say that when students go to separate schools, they learn to work with the opposite sex. However, such an argument completely ignores the fact that boys and girls learn to interact with members of the opposite sex every day in and out of school. Negotiating allowances, chores, and privileges with their parents on a daily basis teaches them the skills they will need in their future world.

The final argument by opponents of same-sex education is that it is therefore unconstitutional. However, research supports the fact that discrimination is widespread in mixed classes. Several studies have shown that boys receive more attention than girls and that teachers call on boys more often, even when girls raise their hands. Clearly, this is not a fair environment.

It should be evident that the arguments against co-ed schools are not valid. One of the reasons people involved in middle school education say that same-sex schools are better is that in a single-sex environment, boys and girls pay less attention to each other. In a co-ed classroom, one teacher is more relaxed and asks more questions; the other is more focused. Girls are less fearful of making mistakes and ask questions more freely. Boys are less inhibited about sharing their ideas. In a co-ed classroom, boys are disadvantaged by lack of contact with the opposite sex because they have to interact with one another. Finally, the argument that co-ed schools are unconstitutional is invalid. Therefore, in my opinion, the public schools should be changed.

ACTIVITY 2.5

Read the previous argument *Separating the Sexes, Just for the To* and complete the following outline.

Separating the Sexes, Just for the To

I. Introduction (Explanation of the issue)

Thesis statement:

II. Body

A. Opposing argument 1

Opponents of sex education claim that test scores show that boy classes.

Rebuttal to argument 1

1. Research is inconclusive
2. Other results that cannot be calculated

A. Girls -----

B. Boys -----

B. Opposing argument 2

Rebuttal to argument 2

A. Settling squabbles with siblings

B. Negotiating with parent

C. Opposing argument 3

Rebuttal to argument 3

A. -----

B. Teachers call on boys more often

D. Own point of view

1. Same classes provide a better learning environ

2. Reasons

A. Boys and girls -----

B. Girls -----

D. Boys -----

III. Conclusion

2.4. Logical Fallacies in Argumentative Essay

When you write an argumentation, your main purpose could be either to convince readers that your opinion is correct or to persuade your audience to take some sort of action. In other terms, in writing an argumentation essay, you need to provide your reader with a clear main point and plenty of logical evidence. Logic is the tool writers use to establish their credibility with readers. When a writer bases an idea on weak logic, it is said that the writer has committed a logical fallacy, which means common errors of logic.

ACTIVITY 2.6

What kinds of logical fallacies do you know? Discuss logical fallacies you know, and compare it with the following logical fallacies.

1. Hasty Generalizations

Hasty generalization logical fallacies occurred when writers used typical, irrelevant, or inaccurate evidence in their writing.

Example Our students are physically fit; just look at the success of our sports teams.

2. Faulty Cause and Effect (Post Hoc)

Post Hoc is the result of assuming that because B follows A, A must be the cause of B.

Example Tourism in this city started to decline right after Mayor Smith was elected. To save the tourist industry, let's replace her now!

3. Reductive Reasoning

Reductive reasoning is to reduce a complex effect to a single cause.

Example People who want to be healthy should eat Mango. My Grandmother ate Mango every day and she lived to be ninety.

4. False Analogies

False analogies occur when writers overlook the fact that two things being compared are more different than they are similar.

Example: Why am I required to take certain courses before I can graduate?
No one requires me to buy certain groceries before I can graduate.

5. Begging (Avoiding) the Question

It occurs when a writer assumes as true the very point he is arguing.

Example: Improving public transportation in this city won't solve the problem because
public transportation is clean, safe, and efficient, people will use it.

6. Circular Reasoning

It occurs when an argument merely restates the conclusion it was meant to prove.

Example: The minister is such a good person because she is so virtuous.

7. Equivocation

Equivocation involves using a term in a completely different way than one's opponent uses it.

Example: My goodness, your honor! It is amazing how the Detroit Free Press
of the Detroit Free Press. For one thing, we are guaranteed by the Constitution
to fre press. And look at the named of shots of fre press.

8. Ad Hominem Arguments

Ad hominem literally means "against the person." That is, an ad hominem argument means to attack the opponent himself or herself rather than his or her argument.

Example: Senator Jones' bill on gun control should not be taken seriously because
the same man who has had at least five extramarital affairs.

9. False Either/Or Arguments

False either/or arguments assume that only two alternatives exist in a given situation.

Example The case is clear: either death penalty allow crime to run rampant

10. Bandwagon Appeals

Bandwagon appeal arguments suggest that readers should accept something because it is popular, and more people are becoming involved in.

Example A recent poll showed that seventy percent of the American
requirements ones human rights too far; therefore, these laws
and should be repealed.

11. Non Sequiturs

Non sequitur literally means "it does not follow." Such fallacies occur when writers fail to show clear connections between their premise or starting point and conclusion.

Example Maria loved college, so she was a brilliant teacher.

N.B: Watch for the above mentioned logical fallacies in your own argumentative essay writing, and if you find them, do your best to get rid of them.

ACTIVITY 2.7

Read the above argument Set piece in Gay Men Sexes, Just for
evaluate its way of argument logical fallacies in it.

2.5. Producing Argumentative Essay

As you have learned in the previous part, you are expected to follow a series of essay writing techniques to produce effective essays. These techniques are discovering a writing topic, discovering supportive information, discovering arrangements, discovering stylistic choice, using styles to promote unity, specificity, and coherence. Therefore, when you write an argumentative essay of your own, using these techniques is essential.

ACTIVITY 2.8

Write an argumentative essay of five-paragraphs on any argumentative essay writing topic with the help of process sheets how to write the essay.

Now, you have to discover your own argumentative essay writing topic. The following writing process sheet can help you in doing so.

WPS 2.1: Discovering Argumentative Essay Writing Topic

1. What argumentative issue do I have in my head right now?
2. What information do others have in their heads worth writing?
3. What subject areas offer possible ideas?
4. What interests me in general? What do I get excited about?
5. What is generally important to me?
6. What is my purpose?
7. Who is my audience?
8. What is the content for my topic search?

Next to discovering your argumentative essay writing topic, you have to clarify the topic. The following questions can guide you to clarify the topic.

1. What is the primary issue this topic raises?
2. What are the sub issues consideration?
3. What are some issues the topic does not address?
4. How my topic is broad or narrow in terms of purpose and audience?
5. How long will the paper on this topic be?

WPS 2.2: Discovering Supportive Information

Discovering supportive information helps to get information on your argumentative essay writing topic. Thus, you are expected to search for further information beyond what you currently know on your topic. Here are some probing questions which guide information discovery.

1. What do I know about my argumentative essay writing topic?
2. What information can I gain from social sources?
3. What information can an interview or survey provide?
4. What information does some memory tap?
5. What should I remember about plagiarism before I start to write?

Before you gather information through interview on your argumentative essay writing topic, look at the following questions before you conduct the interview.

1. What types of questions am I going to ask my interviewee?
Yes/No Multiple Choice -e Direct/Indirect Hypothetical
2. What are the questions?
3. How am I going to order the questions?
4. Do I categorize questions thematically?
5. Where is my concluding question?
6. What kind of relationship should I have with the interviewee?
7. How am I going to establish interviewee rapport?
8. How am I going to respond to his/her answer?

Apart from this, you need to consult various library sources: hard and soft copies through note taking. However, when you collect data from any source you have to critically evaluate the information. Consider the following questions in your evaluation.

1. Is this information accurate?
2. Is the information biased?
3. Is the information authentic?
4. Is the information up to date?
5. Is the information helpful?
6. What is the source's main idea? Purpose? Audience?
7. What type of evidence does the source offer?
8. What is crucial to the understanding of the topic?
9. How can the sources themselves be grouped?
10. Does the source material suggest some statement to change my

Collecting information from hard and soft copy materials needs to be ~~stable~~ ^{stable}. Thus, you have to take care of plagiarism. You need to paraphrase the author's idea rather than directly copying the whole thing written in the material. Consulting various sources of information is also expected from you to collect information on your argumentative essay writing topic.

The information you gathered on your writing topic should be appropriate in terms of your argumentative topic, purpose, and audience. You can evaluate its appropriateness using the questions here below.

1. Does the collected information fit my argumentative topic?
2. Does the collected information fit my purpose?
3. Does the collected information fit my readers?
4. Do I have information for introduction?
5. Does the collected information have adequate details?
6. Do I have information for the conclusion?

WPS 2.3: Discovering Arrangements

Discovering arrangements is essential for the good flow of ideas in your essay. You can arrange it in the way you want to flow the idea in the whole parts of the essay. The following probing questions are helpful to do so.

1. Are there any clues in my reading that suggest arrangements?
2. Are there any clues in the composing content that suggest arrangements?
3. Does the basis for my topic suggest arrangements?
4. Does how I join ideas into a synthesis suggest arrangements?
5. Does the relationship between the parts of my arrangements?
6. Does the sectioning of my material in my preliminary draft suggest arrangements?

WPS 2.4: Discovering Stylistic Choice

Look at the following questions and use them to develop the introduction part of your essay.

1. Which of the following writing devices seems appropriate to my subject?

Questions	Quotation	Striking details or descriptions
Narrative or anecdote	Startling or unusual examples	...
2. What raw material do I have to bring my evidence?
3. What material can I generate to bring my evidence?
4. How can I link my material and controlling idea?
5. Will my introduction lead to my subject? Purpose?
6. Will it provide necessary information to my readers understanding?

The following probing questions can also help you in writing your conclusion.

1. What is the significant point of the paper that should be included?
2. Will my conclusion explicitly or implicitly state my controlling idea?
3. What raw material do I have for my conclusion?
4. What material can I generate for my conclusion?
5. Could any of the following devices be incorporated into an effective and ...

Summary questions	Personal Application	Quotation
General Application	Analogy	Statistics
		Specific

6. Will my conclusion provide a sense of closure for my reader?
7. Will it prompt the reader to think about my ideas beyond the content?

WPS 2.5 Using Style to Promote Unity, Specificity, and Coherence

How are the unity, specificity, and coherence of ideas in your argumentative essay in general?

Look at the following questions and revise accordingly.

1. What is the main idea of my argumentative essay? Its purpose?
2. Does my reader have specific expectations concerning my frame?
3. What point of view (person) is appropriate to my subject? Purpose?
4. Would presenting multiple points be appropriate and effective? If so, best method of their presentation?
5. How can I promote specificity through concrete language, dialogue?
6. How can I use sentence combining to reduce redundancy, clarify?
7. How can I promote coherence through meaningful cohesive devices?

To enhance the quality of your written draft, gaining feedback from peers, the teacher, experts, and even from your family is essential. Write your final draft based on the comments you gained.

Now, let you assess your argumentative essay writing process, and reflect on what you have learned and how you learned based on the fKWHL,, chart.

ACTIVITY 2.9

Make an oral presentation on it, and to you, however it, and learned from your argumentative essay writing process.

By now, you are expected to understand the way of argumentative essay writing. Based on your understanding, you need to produce your argumentative text on your writing topic using your own data gathering techniques. The following activity presents this task.

In here, you should discover, choose, and clarify your own argumentative essay writing topic from the society, outside the classroom; discover supportive information to your topic; evaluate the collected information; discover arrangements; discover styles to write drafts; revise for unity, specificity, and coherence. In doing so, you need to work out with your colleagues, the teacher, and experts for the necessary feedback.

Appendix • K: Student-Written Essay Evaluation Rubric (Writing Performance)

BRITISH COUNCIL: IELTS TASK -2 Writing band descriptors (public version)

Band	Task Achievement	Coherence and Cohesion	Lexical Resource	Grammatical Range and Accuracy
9	<ul style="list-style-type: none"> fully addresses all parts of the task presents a fully developed position in answer to the question with relevant, fully extended and well supported ideas 	<ul style="list-style-type: none"> uses cohesion in such a way that it attracts no attention skilfully manages paragraphing 	<ul style="list-style-type: none"> uses a wide range of vocabulary with very natural and sophisticated control of lexical features; rare minor errors occur only as ...slips 	<ul style="list-style-type: none"> uses a wide range of structures with full flexibility and accuracy; rare minor errors occur only as ...slips
8	<ul style="list-style-type: none"> sufficiently addresses all parts of the task presents a well developed response to the question with relevant, extended and supported ideas 	<ul style="list-style-type: none"> sequences information and ideas logically manages all aspects of cohesion well uses paragraphing sufficiently and appropriately 	<ul style="list-style-type: none"> uses a wide range of vocabulary fluently and flexibly to convey precise meanings skilfully uses uncommon lexical items but there may be occasional inaccuracies in word choice and collocation produces rare errors in spelling and/or word formation 	<ul style="list-style-type: none"> uses a wide range of structures the majority of sentences are error free makes only very occasional errors of inappropriacies
7	<ul style="list-style-type: none"> addresses all parts of the task presents a clear position throughout the response presents, extends and supports main ideas, but there may be a tendency to overgeneralise and/or supporting ideas may lack focus 	<ul style="list-style-type: none"> logically organises information and ideas; there is clear progression throughout uses a range of cohesive devices appropriately although there may be some under/over-use presents a clear central topic with each paragraph 	<ul style="list-style-type: none"> uses a sufficient range of vocabulary to allow some flexibility and precision uses less common lexical items with some awareness of style and collocation may produce occasional errors in word choice, spelling and/or word formation 	<ul style="list-style-type: none"> uses a variety of complex structures produces frequent error-free sentences has good control of grammar and punctuation but may make a few errors
6	<ul style="list-style-type: none"> addresses all parts of the task although some parts may be more fully covered than others presents a relevant position although the conclusions may become unclear or repetitive presents relevant main ideas but some may be inadequately developed/unclear 	<ul style="list-style-type: none"> arranges information and ideas coherently and there is a clear overall progression uses cohesive devices effectively, but cohesion within and/or between sentences may be faulty or mechanical may not always use referencing clearly or appropriately uses paragraphing, but not always logically 	<ul style="list-style-type: none"> uses an adequate range of vocabulary for the task attempts to use less common vocabulary but with some inaccuracy makes some errors in spelling and/or word formation, but they do not impede communication 	<ul style="list-style-type: none"> uses a mix of simple and complex sentence forms makes some errors in grammar and punctuation but they rarely reduce communication

5	<ul style="list-style-type: none"> addresses the task only partially; the format may be inappropriate in places expresses a position but the development is not always clear and there may be no conclusion drawn presents some main ideas but these are limited and not sufficiently developed; there may be irrelevant detail 	<ul style="list-style-type: none"> presents information with some organisation but there may be lack of overall progression makes inadequate, inaccurate or over use of cohesive devices may be repetitive because of lack of referencing and substitution may not write in paragraphs, or paragraphing may be inadequate 	<ul style="list-style-type: none"> uses a limited range of vocabulary, but this is minimally adequate for the task may make noticeable errors in spelling and/or word formation that may cause some difficulty for the reader 	<ul style="list-style-type: none"> uses only a limited range of structures attempts complex sentences but these tend to be less accurate than simple sentences may make frequent grammatical errors and punctuation may be faulty; errors can cause some difficulty for the reader
4	<ul style="list-style-type: none"> responds to the task only in a minimal way or the answer is tangential; the format may be inappropriate presents a position but this is unclear presents some main ideas but these are difficult to identify and may be repetitive, irrelevant or not well supported 	<ul style="list-style-type: none"> presents information and ideas but these are not arranged coherently and there is no clear progression in the response uses some basic cohesive devices but these may be inaccurate or repetitive may not write in paragraphs or their use may be confusing 	<ul style="list-style-type: none"> uses only basic vocabulary which may be used repetitively or which may be inappropriate for the task has limited control of word formation and/or spelling; errors may cause strain for the reader 	<ul style="list-style-type: none"> uses only a very limited range of structures with only rare use of subordinate clauses some structures are accurate but errors predominate, and punctuation is often faulty
3	<ul style="list-style-type: none"> does not adequately address any part of the task does not express a clear position presents few ideas, which are largely undeveloped or irrelevant 	<ul style="list-style-type: none"> does not organise ideas logically may use a very limited range of cohesive devices, and those used may not indicate a logical relationship between ideas 	<ul style="list-style-type: none"> uses only a very limited range of words and expressions with very limited control of word formation and/or spelling errors may severely distort the message 	<ul style="list-style-type: none"> attempts sentence forms but errors in grammar and punctuation predominate and distort the meaning
2	<ul style="list-style-type: none"> barely responds to the task does not express a position may attempt to present one or two ideas but there is no development 	<ul style="list-style-type: none"> has very little control of organisational features 	<ul style="list-style-type: none"> uses an extremely limited range of vocabulary; essentially no control of word formation and/or spelling 	<ul style="list-style-type: none"> cannot use sentence forms except memorised phrases
1	<ul style="list-style-type: none"> answer is completely unrelated to the task 	<ul style="list-style-type: none"> fails to communicate any message 	<ul style="list-style-type: none"> can only use a few isolated words 	<ul style="list-style-type: none"> cannot use sentence forms at all
0	<ul style="list-style-type: none"> does not attend does not attempt the task in any way writes a totally memorised response 			

Students Test Result Report Sheet (Writing Performance)

Students Code	Task Achievement	Coherence and Cohesion	Lexical Resource	Grammatical Range and Accuracy	Total	100%
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

Appendix • L: Students' Test Result Raw Data (Writing Performance)

Student Code	Pre-test 1	Pre-test 2	Pre-test 3	Posttest 1	Posttest 2	Posttest 3
1	37	38	36	46	50	53
2	33	34	35	48	50	50
3	41	43	45	53	55	56
4	40	42	41	51	53	53
5	33	33	33	45	46	45
6	40	41	42	53	54	54
7	35	33	35	44	46	48
8	41	41	40	52	56	54
9	37	38	38	49	47	50
10	39	39	41	50	52	51
11	36	38	41	51	50	51
12	34	35	33	46	46	47
13	39	41	42	51	55	54
14	34	35	36	45	47	47
15	36	40	39	48	52	53
16	38	36	37	46	48	49
17	36	37	40	45	48	48
18	35	36	38	48	51	53
19	42	44	45	53	54	56
20	35	38	39	47	47	50
21	33	37	35	47	48	51

Students' Test Result Report Sheet (Critical Thinking Skills)

Adapted from Facione (2015)

Student- Code	Interpretation (20 Points)	Analysis (20 Points)	Inference (20 Points)	Evaluation (20 Points)	Explanation (20 Points)	Total Score 100 Points
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

Appendix • M: Core Critical Thinking Skills in Argumentative Essay Writing

(Adapted from Facione, 2015)

1. Interpretation: The students comprehend and expressed the meaning of their writing issues and judgments in their essays. The students recognized the then argumentative issues and described them in their essays. They collected data on their topics and constructed categories of proponent and opponent ideas for their argumentative essay development. They paraphrased ideas taken from other sources in their own words. These writing tasks indicate that when students have used inquiry-based learning, the students have developed their interpretation skills which are among the core critical thinking skills.
2. Analysis: The students identified the intended and actual inferential relationships among statements to express beliefs in their writing. The students examined ideas, detected and analysed arguments in their argumentative writing. They identified the similarities and differences between opposing ideas in developing their persuasive argumentative essays. They drafted the relationship of sentences or/and paragraphs to each other and the main purpose of their argumentative essays. The students constructed convincing arguments to support or criticize a given argumentative idea, and reach a strong conclusion. It shows that the students have enhanced their analysis skills which is one of the core critical thinking skills.
3. Evaluation: When the students wrote argumentative essays, they determined the credibility of their source of information while they gathered data on their writing topics. They assessed and compared the logical strengths and weaknesses of opposing arguments. They also judged if the evidence at their hands did not contradict each other, and support their conclusion.

Finally, they judged if their arguments in their argumentative essays were relevant and applicable in an existing real-life situation. It implies that the students have developed their evaluation skills, one of the core critical thinking skills.

4. Inference: The students have enhanced their inference skills in writing their argumentative essays. This is because the students have identified pertinent thoughts needed to draw reasonable conclusions in their essays. In doing so they formed conjectures and hypotheses; consider relevant information and deduce consequences flowing from their data. They questioned their evidence, conjecture alternatives, and draw conclusions when they developed argumentative essays through inquiry-based learning. The students constructed meaning from their readings and formulated a synthesis of related ideas into a coherent perspective to produce sound argumentative essays.
5. Explanation: Beyond interpretation, analysis, evaluation and inference, the students explained what they think, and how they arrived at their judgment in their learning process. In other terms, the students have developed their explanation skill to the inquiry-based writing instruction. The students presented their argumentative essays in a cogent and coherent way. They stated and justified reasons in terms of their evidential and contextual considerations upon which their results were based. They presented their reasons in the form of persuasive arguments. They also reflected on (in the classroom) the methods, procedures, and techniques they used in writing their argumentative essays.
6. Self-regulation: the data gained from the students' reflective journal and focus group discussion revealed that the students have developed their self-regulation skills which is one of the core critical thinking skills. Accordingly, the students confirmed that they self-consciously monitored or corrected their judgments by analysing and evaluating contradictory

ideas in producing their argumentative essays. They questioned themselves to examine, correct, and confirm their reasons for producing essays. They double-checked their reasons by recalculating their evidence. The students reconsidered their interpretations and judgments in the view of further analysis. They revised their reasons in view of the errors they discovered in their argumentative essay writing. Then, they changed their conclusions in view of the realization that they had misjudged the importance of certain factors when coming to their earlier decisions.

Appendix • N: Students' Test Result Raw Data (Critical Thinking Skills)

Student Code	Pre-test 1	Pre-test 2	Pre-test 3	Posttest 1	Posttest 2	Posttest 3
1	34	35	35	46	45	44
2	32	32	33	45	44	46
3	34	36	37	45	48	46
4	35	37	38	47	46	45
5	30	31	30	42	40	42
6	33	35	37	48	50	49
7	32	31	31	41	42	42
8	34	36	40	49	49	50
9	33	36	34	46	45	46
10	34	36	38	46	48	46
11	33	32	33	42	46	47
12	30	32	30	42	40	42
13	36	37	38	46	46	48
14	30	31	33	43	43	45
15	32	33	34	43	44	46
16	35	34	34	42	43	45
17	35	34	36	44	44	45
18	34	33	35	44	45	45
19	37	40	40	51	51	50
20	31	31	30	43	42	43
21	32	33	32	41	42	43

Appendix • O: Students' Pre-intervention Questionnaire Raw Data

Student Code	Item																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	2
2	2	1	1	1	1	1	2	1	2	3	1	1	3	1	1	3	1	1	1	1	1	1	1	1
3	2	2	2	2	1	2	2	2	3	2	2	2	1	2	2	2	2	3	2	2	2	3	2	2
4	2	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	1	2	1	2	2	2	2	2
5	1	1	1	2	1	3	1	1	2	1	1	1	1	1	1	1	1	1	3	1	1	2	1	1
6	1	1	1	1	2	1	1	3	1	1	1	2	2	2	1	2	2	2	2	2	1	1	1	1
7	2	2	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1
8	1	1	1	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	2	1	1	1	1	3
9	2	2	2	2	2	2	1	2	2	1	1	2	2	2	2	2	1	2	2	2	2	2	2	1
10	3	1	2	2	1	2	2	2	2	2	2	2	2	3	1	2	2	1	2	2	1	1	2	2
11	2	2	2	2	2	1	2	2	2	2	1	2	2	2	1	2	2	2	3	2	2	2	2	2
12	2	1	1	1	2	1	1	1	3	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1
13	2	2	2	2	2	3	2	3	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	2
14	2	1	1	1	1	1	2	1	1	3	1	1	3	1	1	1	1	1	2	1	1	2	1	1
15	1	3	1	2	1	1	1	2	1	1	2	2	1	1	1	3	1	1	1	1	1	1	1	1
16	2	2	2	2	2	2	2	1	2	3	1	2	2	2	1	2	2	2	1	2	2	2	2	2
17	2	2	2	2	3	1	3	2	2	1	2	2	2	2	1	1	2	2	2	3	2	2	2	2
18	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
19	2	1	3	1	1	1	1	1	1	1	1	1	1	1	2	1	2	3	1	1	1	1	3	1
20	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
21	2	1	2	3	2	2	2	1	2	1	1	2	2	2	1	2	3	2	2	2	2	2	2	1

Appendix • P: Students' Postintervention questionnaire raw data

Student Code	Item																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	5	5	5	4	5	5	5	5	5	4	5	5	5	5	5	5	5	5	3	4	5	5	5	5
2	5	5	5	5	5	5	4	5	4	4	5	5	5	5	3	5	5	5	5	3	5	4	5	3
3	4	3	4	4	3	4	5	3	5	4	3	4	4	4	5	4	5	5	4	4	4	3	4	4
4	4	4	4	4	5	4	5	4	4	5	4	5	4	5	4	4	4	4	5	4	3	4	4	5
5	5	5	3	4	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	4	4	3	4
6	4	5	5	3	4	5	5	5	5	5	5	4	4	3	5	4	4	4	4	4	5	5	4	5
7	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	4	5	5	4	5	5
8	5	5	5	5	3	5	3	5	5	3	4	5	5	5	5	3	3	4	4	5	4	5	5	5
9	4	4	4	4	4	4	5	4	4	5	5	5	4	4	4	4	4	4	5	4	5	5	5	4
10	4	5	4	3	5	4	4	5	4	5	4	3	4	4	5	4	4	5	4	4	5	4	4	5
11	4	4	4	4	4	5	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4
12	4	5	5	5	4	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5
13	5	4	4	4	4	5	5	5	4	4	4	4	4	4	4	5	4	4	4	5	5	3	5	5
14	4	5	5	5	5	3	4	5	5	4	5	4	5	5	5	5	5	5	4	3	5	4	4	5
15	5	3	5	4	5	5	4	4	3	5	5	5	4	5	4	5	5	3	5	5	5	5	5	5
16	4	4	4	4	4	4	5	5	4	5	4	4	4	4	5	3	4	4	4	4	4	4	4	4
17	4	4	4	4	4	5	4	4	4	5	4	5	3	4	5	5	5	5	4	4	4	4	5	4
18	4	4	3	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4
19	4	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	3	5	5	5	5	5	3	5
20	4	5	5	5	5	5	4	5	5	5	5	3	5	5	5	5	5	5	5	5	5	4	5	5
21	4	4	4	4	5	4	4	5	4	5	4	4	4	4	5	4	4	4	4	4	3	4	5	4

Appendix • Q: Students' Focus Group Discussion Response

Question-1: Do you think that using inquiry-based learning increased your motivation towards writing? If so, how?

Respondent#1

Thank you very much for giving this chance. I am lucky to learn with inquiry-based learning. It increased my motivation to write essays especially argumentative essay. I know about how to write argumentative essay, how to evaluate argumentative essay, how to analyze and others. When I know this method inquiry-based learning; it increased my motivation to write essays. I want to write any essay.

Respondent#2

[Inaudible voice]

Respondent#3

Taking this course [learning in inquiry-based learning method] motivates me to write. Before this time, I used to write, but I was not motivated.

Respondent#4

Inquiry-based learning as its name indicates is requesting information before beginning to writing. So, this inquiry-based learning motivated me through gathering information allowing me the way or the means how I gather information from different sources for example from internet, subject area experts. So, I could come to increase my writing ability through inquiry-based learning.

Respondent5

Inquiry-based is very important to write argumentative essays. Before writing on a certain topic, we should gather information about the main topic that we are going to write. So, unless we gather the information from sources, we could not write a good argumentative essay. So, the inquiry-based learning that the teacher used to teach writing is very good. We have become to write argumentative essays.

Respondent6

Before this time, we wrote essays, but this inquiry-based learning motivates me to write essays. It helps me.

Respondent7

This inquiry-based learning is a better way than the others to write argumentative essays because it helps to gather information on a writing topic.

Respondent8

This inquiry-based learning helps me to find out information about different techniques of writing especially on the argumentative writing. So, it is important to write and add out any information from different sources [both] before writing and after writing. It is interesting for me.

Question-2: Do you think that using inquiry-based learning in writing classes enhances your argumentative essay writing performance? If so, how?

Respondent1

Using inquiry-based learning in writing classes enhances my argumentative essay writing performance. Before I used inquiry-based learning, I did not know how to write and evaluate effective argumentative essay writing. But, after learning through inquiry-based learning, I know the clue about how to write and analyze, evaluate argumentative essay. I have no problems to write argumentative essays after learning through inquiry-based learning.

Respondent2

Before I knew about inquiry-based learning, I did not know how to write argumentative essay, but after knowing it I tried to understand the way how to write argumentative essay briefly.

Respondent3

Before taking this course [learning through inquiry-based learning], I used to write, but I do not know the ways and the techniques that used to write essays. After learning in this method, I know how to write especially argumentative essay. It helps me to know more about argumentative essay, how to write it, and to persuade my audiences using various techniques. So, taking this course [learning through IBL] really supported me to write argumentative essay.

Respondent4

I think, it highly enhanced me to increase my writing skills. To speak the truth, I have been writing different argumentative essays since last year, but it was not persuasive. But, after I took this method, I could come to identify the opponents' idea, and then counter attack my opponents ideas. Generally, this method highly enhanced my argumentative essay writing.

Respondent5

Frankly speaking, I could not differentiate the types of writing before you taught us in this way, I could the modal auxiliary verbs that we use in argumentative essay writing. So, the discourse markers that we used in argumentative writing make me differentiate argumentative writing than other forms of writing. So, the inquiry-based learning that we used makes me write argumentative writing.

Respondent6

As we know, argumentative essay used to persuade others. So, inquiry-based learning helps us how to persuade others.

Respondent7

Inquiry-based learning helps to write argumentative essay.

Respondent8

Yes, it helps me to understand how to write, evaluate and gather important data about my topic. So, this inquiry-based learning helps me to know different techniques and tactics to write and to gather data on my topic. Especially, I used to know the techniques. So, it is an important technique.

Question-3: Do you think that using inquiry-based learning in writing classes empowered your critical thinking skills which include Interpretation, Analysis, Evaluation, Inference, Description, and Self-regulation)? If so, how?

Respondent1

Definitely! The inquirybased learning empowers my critical thinking because I have knowledge about how to write essays critically because I already learned about inquiry learning system [method] how to write essays. Which [this] means, no need of emb[feeling] during writing argumentative essays. Which means, generate the idea which is better to get the attention of the audience, how to persuade the audience, how to generate the idea which are logical and reasonable.

Respondent2

[Unable to spak]

Respondent3

Without a doubt, it empowers my critical thinking. Before this my writings were not appropriate for audiences. After taking these classes, I know what about to write, how about my audiences accept my writing, what my audiences need on twa know how to choose a topic that is suitable for my audiences; I know how to analyze my essays. So, this course (learning method) really increases my critical thinking capacity.

Respondent4

Ok! Very good! My critical thinking towards the listed ptsin(Interpretation, Analysis, Evaluation, Inference, Description, and Self-regulation) is very good now. Especially, when I pick two points from the listed points here, analysis and evaluation, I can analyze and evaluate every written argument because he method you used to teach us in the past classes. So now, I

can easily interpret, analyze, evaluate in this way and even regulate myself to write my argumentative essay to persuade my audience. This is what you did. Thank you.

Respondent#5

Ok. Thank you very much! I am very happy to use the inquiry-based learning that you advise us to writing these argumentative writings. Firstly, inquiry-based means choosing the topic based on the subject matter. Later we choose the topic; we organize and search information about that subject matter. Later we gather information about that subject matter, we evaluate, criticize and analyze about that subject matter. During this time, our critical thinking will be increased. It adds or motivates how we can write tangible things as somebody (audience) could agree or believe our idea. So, the inquiry-based that you used to advise us to write essays is good.

Respondent-6

After taking this inquiry-based learning, my critical thinking skills are increased. Now, I can evaluate or judge essays easily. That is, the inquiry-based learning enforces my critical thinking skills.

Respondent#7

Based on the inquiry-based writing, we can increase our critical thinking skills because the inquiry-based learning uses analysis and evaluation of the topic we write.

Respondent#8

This inquiry-based learning increases my critical thinking. That is starting from choosing a topic for my writing and after choosing a topic; I have to know who is my

audience, and what is my purpose to write this essay. And the other thing, it helps to think about the issue.

Question-4: If you have developed your critical thinking skills while you used inquiry-based learning in writing classes, do you think that the critical thinking skills are helpful to your real life situations?

Respondent1

Ok. Critical thinking skills is (are) really helps in my real life because when I can think critically, I know the things that I do, and also I can do (identify) any things which are better or not to me and to others. When I can choose the things which are best to do for me and others, I am (will be) critical thinker.

Respondent2

[Leave the discussion]

Respondent3

Critical thinking really helps in our work life as university graduate students because it has a lot of things for us. So, in our work life, we need to be competitive enough to be successful. So, being a good critical thinking help us to be successful.

Respondent4

Critical thinking towards writing is very important for me. To speak the general idea, Every English graduate person and critical thinking towards writing dependently go together. I am going to do two things in the future as an English graduate man. One, critically writing. The

second is critically evaluating what another person has written. So, I think, it will help us and the rest of my chapter life.

Respondent5

Critical thinking is a crucial thing, not only for this but also for another thing. We should pay attention and know about it. Unless we think of what we going to do, we could not do that in appropriate way. So, critical thinking is very important for me. When I plan something, unless I critically think of it, I could not be successful for that matter. So critical thinking is very important and crucial for my future work.

Respondent6

Critical thinking skills are crucial to my real life situations. It helps me to think one thing in different ways, in deeply. So, it is important in your (my) life situation.

Respondent7

When you discuss about critical thinking, it is essential not only for writing, but for life. When we critical think, we consider the situations before starting doings (tasks) evaluate and to be successful.

Respondent8

Critical thinking is important for my life because it helps to be reasonable on my activities in work, and other activities. It also helps to make a good decision in my real life.

Question-5: What are the benefits of using inquirybased learning in argumentative writing class?

Respondent1

The benefits of using inquiry-based learning are to choose interesting topics, generate idea, persuade audience with good ideas, catch the reader's attention, and evaluate argumentative essays depend on its reasonability, persuasiveness, and the techniques used in the essay. In general, it helps me to evaluate, analyze, and interpret ideas in argumentative essay. I really lucky to learn in this inquiry-based learning.

Respondent2

[Leave the discussion]

Respondent3

There are a lot of benefits. Let me mention some of them. Argumentative essay is written to persuade people. If we want to persuade people, we need to have a good evidence, technique, mechanism. So, learning with this inquiry-based learning helps us to produce a good argumentative essay, to persuade people with evidences.

Respondent4

The purpose of inquiry-based learning is, one, to select a writing topic, second to gather information based on our topic, the third, how to ask subject area experts, interview classmate, friends, dorm mates, and soon. So, it has benefits in different way.

Respondent5

The benefits of using inquiry-based learning are various. One of its benefits is selecting topics, after selecting a topic, evaluating, searching information, gathering information. Unless we gather information, we could not write a good paragraph. So, inquiry-baseds very important. It

is a very critical thing. The evidence that we gather must be believable and tangible to our audiences. So, the inquiry-based that we used is very important.

Respondent6

In inquiry-based learning, we are expected to gather information from different kinds of sources, for example using interview. During the interview, we can interact with people.

Respondent7

It helps us to gather data from different sources on our writing topic.

Respondent8

It has different benefits. It is important to choose a good topic, gather information from different sources, and after that to write a good essay using different techniques, and to evaluate the essay itself.

Question-6: What are the limitations of using inquiry-based learning in argumentative writing class?

Respondent1

I think, there is no limitation in inquiry-based learning beyond its importance. I do not watch limitation with it.

Respondent2

[Leave the discussion]

Respondent3

It might be difficult to say it has not limitations, but to my knowledge, I did not face limitations in using it.

Respondent4

The limitations of inquiry-based learning, one, lack of enough information related to the topic. Second, lack of subject area expert and their unwillingness to give information around the area or the subject that we want to write on.

Respondent5

I also believe as it has limitations. It needs somehow sacrifice during searching information to get good information. We go somewhere to search it. May be we could not get the good information about the topic. So, somehow, it has limitations.

Respondent6

The limitation of this inquiry-based learning is it consumes more time. There is lack of information.

Respondent7

In order to collect information, you must, for example, conduct an interview. It needs time and personal involvement. It is time taking. It has more importance, but it has little limitation.

Respondent8

I have only found two limitations. Lack of information, and during interview people might be unable to give information.

Question-7: What are the challenges of using inquiry-based learning in argumentative writing classes? Please, explain.

Respondent1

I think, the challenges of using inquiry-based learning in argumentative writing class is, first, there is no teacher who taught us using inquiry-based learning.

Respondent2

[Leave the group]

Respondent3

I did not face challenges in using it.

Respondent4

Yha! Inquiry-based learning may has challenges for others, but no challenge for me at all.

Respondent5

In my case, it has challenges. Inquiry-based learning needs practice. Unless we practice, it is so difficult to write. For example, when we use modal ~~auxies~~ ^{auxiliaries}, would, could, and should, we should pay attention and know about using them. And we write to persuade other people. So when we write, we should pay attention, unless and otherwise, we could not write good essays.

Respondent6

I think, the challenges of using inquiry-based learning, as I mentioned earlier, we have to gather information from different kinds of sources. So, during the interview, we do not easily find an interviewee.

Respondent7

When we collect data, the interviewees are not voluntary. We cannot get full information as we want.

Respondent8

The challenge that I faced on inquiry-based learning is how to organize and write my essay after gathering the information.

Question-8: Do you have any idea that you want to add about inquiry-based learning? If so, please express your idea.

Respondent1

I think, this inquirybased learning method must be continued to teach students because it is important to them for their real life.

Respondent2

[Leave the discussion]

Respondent3

I think, this method is new than the formal methods. So, I guess, it should be continued and give more value to this method because it is easy and effective way to develop our writing skills.

Respondent4

Inquiry-based learning is a very good learning model to teach essay writing. To generalize my idea, last year, we took sophomore English, but our ability towards writing is not so much. And also we did the same thing in the first semester in intermediate writing skills. It is also low still.

But, after we used this inquiry-based learning method we could come to develop our ability toward writing. The method you used in the class, the time you sacrifice with us and everything you did with us was very good. Lastly, I would like to extend my heartfelt gratitude to you, and may God bless your lifetime.

Respondent5

As we know everything has its own rules. So, respecting this rule is expected from us. The inquiry-based learning that is expected from us in writing essay is to write good essays. So, we could respect this one. Before this year, I could not differentiate this type of writing from others, but after you taught us about this, I could differentiate it from other types of learning. So, I would like to thank you. And the other thing I want to say is you have gave us many essay writings, but you did not gave us written feedbacks on the errors that we made in writing the six essays.

Respondent6

Inquiry-based learning is a good method of learning. It should be continued because it helps students to think critically. Lastly, want to say thank you for teaching us in this method.

Respondent7

Inquiry-based learning is the most important, and easy way of learning than the other ways of learning writing skills. So, it has to continue.

Respondent8

This inquiry-based learning is the best method to the teaching and learning process especially in the essay writing process because it helps to students to understand how to write and evaluate

essays, and it must be practiced on the other essay writing types, not only on argumentative essay. So, it was good. So, thank you for your time and contribution. I was happy about you.

Thank you.

Appendix • R: Assumptions of one-way repeated measures MANOVA

Before conducting the one-way repeated measures MANOVA, a series of tests were performed to test the seven assumptions. The first assumption of one-way repeated measures MANOVA is there should be two or more dependent variables measured at the interval or ratio level. In the present study, there were two dependent variables; writing performance and critical thinking skills which were measured from 0 to 100 and the result showed that the assumption has been met. The second assumption is there should be one or more independent variables that consist of two or more categorical, related groups. In this study, there was one independent variable (the intervention, inquiry-based learning) with six related groups, pretest one to pretest three and posttest one to posttest three. In the third place, there should be an adequate sample size to run the test. There were 21 participants in this study, which shows that the sample size was adequate to run the one-way repeated measures MANOVA.

In the fourth place, there should be no univariate or multivariate outliers which can be checked in SPSS using the Mahalanobis distance. In the current study, there were two dependent variables as it is stated above. The maximum calculated value of the Mahalanobis distance, in this study, was 13.48 which is less than the critical value, 13.82. It indicates that there were no multivariate outliers in the data. Fifthly, there should be multivariate normality which is often checked with Shapiro-Wilk test since it is a specific test for normality. The p-value of Shapiro-Wilk test should be insignificant to be a data normal. In this case, while the minimum p-value of this test, in the present study, was 0.78, all of the p-values were insignificant (greater than 0.05) which shows that the data was normal. Besides, the histogram and the normal Q-Q graphs also indicated that the data were normally distributed.

Sixth, there should be a linear relationship between each pair of dependent variables for each related group to the independent variable. Linearity can be tested by plotting a scatterplot matrix.

In this study, the dots in the scatterplot matrix made straight lines which showed that there was a linear relationship between each pair of the dependent variables. Finally, there should be no multicollinearity, which means the independent variables should be moderately correlated. Even though the cutoff points are debatable among researchers, commonly, the minimum and maximum cutoff points are 0.2 and 0.9 respectively (Yaerd Statistics, 2018). In the present study, the correlation values of the dependent variables were between 0.6 and 0.8 which indicated that there was no multicollinearity. Apart from these assumptions, Mauchly's Test of Sphericity was also insignificant for both dependent variables, writing performance ($p = 0.656$) and critical thinking skills ($p = 0.080$) which indicated that the data were normal. In sum, the assumptions of the one-way repeated measures MANOVA were met, and the test had been run to determine the effects of the intervention on students' writing performance and critical thinking skills. The SPSS outputs of these seven assumptions are presented below:

1. There should be two or more dependent variables measured at the interval or ratio level (i.e., they are continuous variables) such as exam performance (measured from 0 to 100).

In the present study, there were two dependent variables; writing performance and critical thinking skills which were measured from 0 to 100 which shows the assumption has been met.

2. There should be one or more independent variables that consist of two or more categorical, related groups. Groups can be considered to be related when a participant is measured at all-time points or receives all treatments. Alternatively,

participants can be matched (e.g., twins, family members). Whilst groups should be related, participants should be independent, such that one participant should not be able to influence the scores of another participant.

In the present study, there was one independent variable (the intervention, ~~learning~~ learning) with six related groups, pretest one to pretest three and posttest one to posttest three.

3. There should be adequate sample size. Mostly, it is advised to have a minimum of 20 participants to run a one-way repeated measures MANOVA.

There were 21 participants in this study which shows that the sample size was adequate to run the oneway repeated measures MANOVA.

4. There should be no univariate or multivariate outliers.

Multivariate Outliers can be checked in SPSS using the Mahalanobis distance. ~~Once~~ free of multivariate outliers, the maximum value of the Mahalanobis distance should be less than the Critical Value of Chi-square table. The Critical Value is determined by using a critical values of Chi-square table which depends the number of dependent variables. (For instance, the critical value of the Mahalanobis distance for two dependent variables is 13.82).

In this study, there were two dependent variables. The maximum calculated value of the Mahalanobis distance in this study was 13.48 which is less than the critical value, 13.82. It shows that there were no multivariate outliers in the data.

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.36	19.23	11.00	4.595	21
Std. Predicted Value	-1.446	1.791	.000	1.000	21
Standard Error of Predicted Value	4.113	5.601	5.173	.393	21
Adjusted Predicted Value	-1.12	29.20	11.57	9.068	21
Residual	-6.405	6.185	.000	4.170	21
Std. Residual	-.972	.938	.000	.632	21
Stud. Residual	-1.720	1.515	-.027	1.071	21
Deleted Residual	-20.201	17.851	-.568	12.118	21
Stud. Deleted Residual	-2.026	1.677	-.043	1.161	21
Mahal. Distance	6.830	13.483	11.429	1.789	21
Cook's Distance	.000	.495	.164	.162	21
Centered Leverage Value	.341	.674	.571	.089	21

a. Dependent Variable: Identification Number

5. Multivariate Normality

There should be a multivariate normality Multivariate normality can be tested in SPSS statistics using numerical methods such as the Shapiro-Wilk test of normality and graphical methods such as histograms and Normal Q-Q plots

Shapiro-Wilk test of normality

The Shapiro-Wilk test is used because it is a specific test for normality than the Kolmogorov-Smirnov test which is more general. Thus, the value of Shapiro-Wilk test should be insignificant to be a data normal. In this case, while the minimum value of the Shapiro-Wilk test in the present study was 0.78, all of the values were insignificant (greater than 0.05) which shows that the data was normal.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Writing Performance Pre-test 1	.141	21	.200*	.935	21	.175
Writing Performance Pre-test 2	.125	21	.200*	.967	21	.671
Writing Performance Pre-test 3	.106	21	.200*	.960	21	.524
Writing Performance Post-test 1	.136	21	.200*	.923	21	.099
Writing Performance Post-test 2	.178	21	.082	.918	21	.078
Writing Performance Post-test 3	.163	21	.152	.962	21	.567
Critical Thinking Skills Pre-test 1	.146	21	.200*	.955	21	.430
Critical Thinking Skills Pre-test 2	.140	21	.200*	.926	21	.116
Critical Thinking Skills Pre-test 3	.108	21	.200*	.948	21	.308
Critical Thinking Skills Post-test 1	.147	21	.200*	.938	21	.201
Critical Thinking Skills Post-test 2	.122	21	.200*	.966	21	.634
Critical Thinking Skills Post-test 3	.176	21	.090	.932	21	.153

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Histogram and Normal Q-Q Plots Result

Writing Performance Pre-test 1

Writing Performance Pretest 2

Writing Performance Pretest 3

Writing Performance Posttest 1

Writing Performance Post-test 2

Writing Performance Posttest 3

Critical Thinking Skills Pre -test 1

Critical Thinking Skills Pre -test 2

Critical Thinking Skills Pre -test 3

Critical Thinking Skills Posttest 1

Critical Thinking Skills Post-test 2

Critical Thinking Skills Post-test 3

6. Linearity

There should be linear relationship between each pair of dependent variables for each related group of the independent variable. This assumption can be tested by plotting scatterplot matrix for each related group of the independent variable. If there is a linear relationship, the (the dots) makes straight lines. If not the graph (dots) make either curve or any other shapes.

In this study, the graph (the dots) in the scatterplot matrix made straight lines which shows that there is a linear relationship between each pair of the dependent variables.

Linear Relationship

The above graph shows that the dependent variables have linear relationship.

7. Multicollinearity

There should be no multicollinearity. In this regard, the dependent variables need to be moderately correlated with each other. If the correlations are too high (generally considered greater than 0.9), there could be multicollinearity. The maximum cutoff point is 0.9 since Pearson's r value is greater than 0.9 though the cutoff point is debatable among researchers.

minimum cutoff point is 0.2 though it is also a debatable issue., ~~The~~ most used minimum and maximum cutoff points are 0.2 and 0.9 respectively.

In this study, the correlation values of the dependent variables were from 0.6 to 0.8, ~~indicates~~ that there ~~was~~ no multicollinearity, and the multicollinearity assumption was met.

Multicollinearity

		Correlations											
		W Pretest 1	W Pretest 2	W Pretest 3	W Posttest 1	W Posttest 2	W Posttest 3	C Pretest 1	C Pretest 2	C Pretest 3	C Posttest 1	C Posttest 2	C Posttest 3
W Pretest 1	Pearson Correlation	1	.876**	.846**	.797**	.810**	.762**	.761**	.873**	.879**	.795**	.868**	.744**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
W Pretest 2	Pearson Correlation	.876**	1	.894**	.862**	.843**	.875**	.665**	.835**	.803**	.743**	.819**	.723**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.001	.000	.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
W Pretest 3	Pearson Correlation	.846**	.894**	1	.834**	.789**	.786**	.717**	.734**	.786**	.656**	.854**	.749**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.001	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
W Posttest 1	Pearson Correlation	.797**	.862**	.834**	1	.870**	.832**	.549**	.726**	.747**	.737**	.875**	.818**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.010	.000	.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
W Posttest 2	Pearson Correlation	.810**	.843**	.789**	.870**	1	.894**	.654**	.731**	.875**	.748**	.859**	.817**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.001	.000	.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
W Posttest 3	Pearson Correlation	.762**	.875**	.786**	.832**	.894**	1	.677**	.740**	.763**	.695**	.824**	.711**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.001	.000	.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Pretest 1	Pearson Correlation	.761**	.665**	.717**	.549**	.654**	.677**	1	.844**	.827**	.634**	.698**	.624**
	Sig. (2-tailed)	.000	.001	.000	.010	.001	.001		.000	.000	.002	.000	.003
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Pretest 2	Pearson Correlation	.873**	.835**	.734**	.726**	.731**	.740**	.844**	1	.885**	.843**	.795**	.693**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Pretest 3	Pearson Correlation	.879**	.803**	.786**	.747**	.875**	.763**	.827**	.885**	1	.854**	.897**	.828**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Posttest 1	Pearson Correlation	.795**	.743**	.656**	.737**	.748**	.695**	.634**	.843**	.854**	1	.860**	.801**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	.002	.000	.000		.000	.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Posttest 2	Pearson Correlation	.868**	.819**	.854**	.875**	.859**	.824**	.698**	.795**	.897**	.860**	1	.895**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	21	21	21	21	21	21	21	21	21	21	21	21
C Posttest 3	Pearson Correlation	.744**	.723**	.749**	.818**	.817**	.711**	.624**	.693**	.828**	.801**	.895**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.003	.000	.000	.000	.000	
	N	21	21	21	21	21	21	21	21	21	21	21	21

** . Correlation is significant at the 0.01 level (2-tailed).

The above correlation table shows the multicollinearity of the dependent variables. As can be seen in the table, the correlation values are between 0.6 and 0.8. The acceptable correlation value is between 0.2 and 0.9. Thus, from the table can be understood that there is no multicollinearity, and the assumption is met.

Appendix • S: Assumptions of paired samples t test

Before conducting the paired samples t-test analysis, the assumption of normally distributed difference scores was examined. Accordingly, skew and kurtosis normality test, and histogram and normal QQ plots were checked out. The descriptive statistics result shows that the paired samples t-test assumptions were met. The following table presents the skew and kurtosis levels.

		Statistic	Std. Error
Difference: Self-efficacy Pretest and Posttest	Skewness	-.231	.501
	Kurtosis	-1.404	.972
Difference: Goal Orientation Pretest and Posttest	Skewness	-.278	.501
	Kurtosis	-1.285	.972
Difference: Belief about Writing Pretest and Posttest	Skewness	-.559	.501
	Kurtosis	-.576	.972
Difference: Affect about Writing Pretest and Posttest	Skewness	.170	.501
	Kurtosis	-.764	.972

The skew and kurtosis levels were estimated as self-efficacy, -.231 and 1.404; goal orientation, -.278 and 1.285; belief about writing, .559 and .576, and affect about writing, .170 and .764, respectively. The normality assumption was considered satisfied since the results were less than the maximum allowable values for a t-test (i.e., skew < 2.0 and kurtosis < 9.0; Posten, 1984).

Besides, as it can be seen in the following table, the normality test result, especially, the Shapiro Wilk test result p-values of each motivation aspect (self-efficacy, .065; goal orientation, .070; belief about writing, .111, and affect about writing, .522) are insignificant ($P > .05$) which indicate the assumption of normality has been met.

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Difference: Self-efficacy Pretest and Posttest	.189	21	.048	.914	21	.065
Difference: Goal Orientation Pretest and Posttest	.221	21	.009	.915	21	.070
Difference: Belief about Writing Pretest and Posttest	.175	21	.091	.925	21	.111
Difference: Affect about Writing Pretest and Posttest	.131	21	.200	.960	21	.522

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Besides, the histogram and the normal Q-Q plots also confirmed the normality of the data. These results are presented below:

DIFFERENCE: Self-efficacy: Pretest- Posttest

DIFFERENCE: Goal Orientation: ~~P~~rest Posttest

DIFFERENCE: Belief about Writing: Pretest Posttest

DIFFERENCE: Affect about Writing: Pre Post

Appendix • T: Sample StudentWritten Essays

Pre-test-1 Essays of Student2

Posttest-1 Essays of Student-2

Pre-test-3 Essayof Student-8

Posttest-1 Essayof Student8

Pre-test-3 Essayof Student9

Posttest-3 Essayof Student9

Pre-test-2 Essayof Student 13

Posttest-2 Essayof Student13

Pre-test-1 Essayof Student 14

Posttest-1 Essayof Student14

Pre-test-3 Essayof Student-19

Posttest-1 Essayof Student19

Declaration