



P-ISSN 2355-2794
E-ISSN 2461-0275

A Case Study of Argument Diagramming in Thai and Indonesian Higher Education Argumentative Essays

Annisa Laura Maretha^{*1}
Intan Pradita²

¹School of Languages and General Education, Walailak University, Nakhon Si
Thammarat 80160, THAILAND

²Study Program of English Language, Faculty of Psychology and Social Cultural
Sciences, Universitas Islam Indonesia, Yogyakarta 55584, INDONESIA

Abstract

This study explores first-year undergraduate students' argumentation essays using argument diagramming structure. A corpus-driven data of 394 argumentative essays were gathered from both Indonesian and Thai universities. A content analysis was employed to examine the dataset of the students' argumentative essays. After gathering primary information from the body parts of their essays, we subcategorized their argumentations into claims and premises in a compliant reading. To ensure data trustworthiness, this study employed triangulation by source and method. The findings show that the most prominent type of argument diagramming was a basic argument, followed by convergent and divergent arguments. Regardless of how the argument diagramming was written, the study found that the students still lacked mastery in structuring their logic when building up the case to be extended to claims and premises. This study suggests a need to revisit pedagogical instructions, in which there should be a provision not only on the basic knowledge of argument structures but also on the skills to recognize the quality of a good argument cognitively. This additional practice will provide important insights to recognize the representational strengths and weaknesses of the students' argumentative writing proficiency to achieve a better performance in the content of their essays.

* Corresponding author, email: maretha.2791@gmail.com

Citation in APA style: Maretha, A. L., & Pradita, I. (2024). A case study of argument diagramming in Thai and Indonesian higher education argumentative essays. *Studies in English Language and Education*, 11(1), 135-167.

Received January 21, 2023; Revised May 9, 2023; Accepted June 5, 2023; Published Online January 31, 2024

<https://doi.org/10.24815/siele.v11i1.30418>

Keywords: Argument diagramming, argumentative writing, EFL students, essay.

1. INTRODUCTION

In most societies, the ability to write has become a significant criterion in determining one's academic success or failure (Abadiano, 1995). However, writing is not one's native skill mastery as it is considered the most difficult skill for everyone (Cekiso et al., 2016). The complexity of the process of transferring thoughts into a text (Harris & Cunningham, 1994) involves prominence in language control (Celce-Murcia & Olshtain, 2000). Despite the challenges, good writing skills is paramount in higher education as most academic knowledge is constructed and available as written texts (Bazerman, 1988). Moreover, the urgency of fostering students' critical thinking through writing in universities has become an important agenda (Nejmaoui, 2018) as higher education expects students to obtain sufficient knowledge on a subject matter and critically think about the issue or any issues they encounter in their daily situations (Schafersman, 1991). Thus, essay writing using critical thinking is considered an important skill for students in higher.

To conform to what higher education demands, argumentative writing has been used as a central component of university writing since it manifests the students' voices in realizing their academic dynamic by negotiating their individual and socio-culturally-affected voices (Morton & Storch, 2019). EFL classrooms worldwide have incorporated the need to advance their English courses at universities by involving argumentative essay writing as it is a fundamental learning skill, where students share knowledge and construct understandings through social constructivism (Aldridge et al., 2000; Mercer, 2005; Vygotsky, 1978) even though to write is the most difficult skill to master for the EFL students regardless of how long they have studies their English (Phuket & Othman, 2015). The importance of argumentation stems from the need to create a convincing idea to propose or refute with a reasonable critique of a particular notion (Jackson, 2002), which denotes the importance of thinking in the process of human rational activity. Therefore, learning to argue itself is essential as it is a form of deep thinking that advocates critical thinking and the basic construction of conceptual knowledge.

Writings by EFL students have been the subject of prior research, with some dealing with argumentation patterns (Lubis, 2020; Reddy & Pradita, 2022; Rusfandi, 2015). However, prior studies frequently employed undergraduate research to gather their findings only to examine the students' capacity to formulate clauses of disclaim. Furthermore, little research has identified the students' argument diagramming in their writings. Recognizing this gap is crucial to enable students to leverage the potential of developing good arguments. To fill this void, this research sheds light by recognizing the types of argumentation structures that EFL students write. This study also incorporated EFL students' writing from Thailand and Indonesia to broaden the scope of EFL learners, in contrast to prior research that used a single scope of EFL students' writings (e.g., Thailand or Indonesian students exclusively). Thus, this study aims to answer the research question of "Using argument diagramming, what are the types of argument structures that Thai and Indonesian students write in their argumentative essays?"

2. LITERATURE REVIEW

2.1 The Nature of Argumentative Essay Writing

Regarding argumentative essay writing, several scholars have clearly defined its general quality. It starts with the authors' points of view towards a certain phenomenon detailed with existing theoretical or empirical evidence (Chandrasegaran, 2008). This is consistent with Bacha's (2010) claim that academic argumentation is a defense of writers' assertions supported by empirical evidence. To conform to the general quality of how an argumentative essay should be written, there is a need for further investigation in the students' argumentative essay writing, especially in the body part where authors present the process of dialogic activities in contrasting ideas to respond to claims, counter-attacking the others' arguments, constructing explanations, posing clarification questions, and rebutting alternative ideas (Chin & Osborne, 2010). This study seeks to examine EFL undergraduate students' argumentative essays by analyzing their arguments' structures utilizing Stab and Gurevych's (2017) illustrated argument diagramming. The goal is to uncover the students' rhetorical tendencies in arranging their thoughts.

2.2 Previous Studies in EFL Argumentative Essay Writing

Educationally and professionally, essay writing has been considered one of the forms of written argumentation that can facilitate the learning process (Andriessen et al., 2003; Jackson, 2002) as the students will actively have ideas on a subject matter, connect them, build the meanings and stances on their own prior to the knowledge they received. Despite the expectations, EFL learners still find it difficult to develop their writing skills, resulting in writing problems. A study by Hammad (2013) in a Palestinian university unfolded how problems occurred in cohesion errors (also in Qaddumi, 1995), grammatical errors, word-for-word translation, lexical errors, lack of content knowledge, and lack of academic style. In the study by Rusfandi (2015), EFL students were aware of the grammatical combinations. Yet, in their competence level, they rarely used their prior knowledge of writing English academic text fluently as a performance. Wray (2012) explained that this was because the nature of English is a language with formulaicity. Thus, it was highly dependent on the student's language learning process.

Ahmed (2010) disclosed other issues in English essay writing of Egyptian students, who found it difficult to write and identify the introduction, thesis statement, topic sentence, and concluding sentences due to a lack of understanding of those elements. Liu (2013) and Reddy and Pradita (2022) found that students tend to focus on the generic argumentation structure given by their teachers. They had restricted order of English and were also difficult to move from their L1 writing abilities. This affects the correct generic structure of argumentation, yet the argumentation delivery remains stagnantly challenging because the ideas constructed in L1 are not always transferable to L2. In other words, determining L2 words that can transfer the L1's idea requires a strong vocabulary and grammar mastery. Coirier and Golder (1993) and Golder and Coirier (1994) also confirmed the previous study as they conducted their developmental study in writing argumentative texts and concluded how

argumentative discourse complexity eventually leads to the students' structural elaboration challenges.

Previous studies also identified the difficulties in articulating arguments among EFL students. Johns (2017) and Stapleton (2017) observed the phenomenon in EFL environments where they found that teacher-centered instructional strategies do not make students enthusiastic to engage in dialogue and discussion. Meanwhile, an earlier study by Altinmakas and Bayyurt (2019) pinpointed the underlying disparities between EFL and native English learners in processing argumentation, which might affect the process of learning argumentation itself. EFL learners are seen as passive learners because they are taught how to value experience-based information, while native English learners are taught how to use criticism and arguments to promote learning environments since such discrepancies and disagreements are bound to happen because these stress on the rational aspect of explaining a point of view in the logical flow of thoughts. A study by Mei (2007) also revealed some patterns in argumentative writing where the students in low-rated essays performed repetitive proclaims and disclaims as their simplistic approach to avoid erroneous details.

Dealing with argumentative essay writing has become nuanced as this represents a discourse of organizing thoughts to develop compelling reasoning. Consequently, understanding argumentation structures is inevitable as it enables students to engage sound reasoning, impacting learning, and decision making. Understanding these structures plays a pivotal role in their ability to make informed and effective contributions in society.

2.3 Argument Diagramming

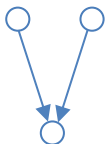
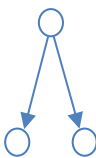
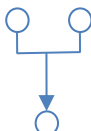
An argument in academic writing is essential because it affects the quality of works (Stapleton, 2001). Previous studies evidenced this claim to prove that student writers are yet experienced in dealing with stance and voice in academic writing (Hyland & Hyland, 2006). Chryssafidou (2014) found problems with argumentation structure. Those problems are that many students are unable to support their own opinions clearly, are unable to respond by either endorsing or opposing the other scholars' viewpoints, are difficult to integrate other scholars' viewpoints, and lack experience in constructing arguments. In other words, practicing developing argumentation in academic writing is closely related to practicing critical thinking skills. To this extent, this indicates that the students are not yet familiar with the development of arguments and how to voice the arguments.

A previous study by Harrel and Wetzel (2015) found that argumentation diagramming is one of the effective methods to familiarize students with critical thinking practice as integrated into writing skills. Argument diagramming was initially used for computational purposes (Suthers et al., 1997). However, in its development, argument diagramming is used as a teaching technique in computer- and paper-based academic writing (Nussbaum, 2008; Okada & Shum, 2008). This study, thus, suggests that argument diagramming be used as a tool to analyze students' argumentation structure. Through argument diagramming, a discourse analyst can represent the graphical aspects of argument schemata and scaffold the writer in generating argument structure while visualizing the structure.

Hankemans (2000) proposed a method for informal logic known as argument diagramming. This method aims at evaluating the analysis steps of an argument. Stab

and Gurevych (2017) illustrated argument diagramming using the node-link concept. They further categorized it into five types of arguments. The summary of this concept is provided in Table 1.

Table 1. The summary of argument diagramming with nodes illustration

Argument types	Definition	Illustrated diagram (nodes at the bottom are the claims of the arguments)
Basic argument	A claim that is supported by a single premise.	
Convergent argument	It consists of two premises that support the claim individually.	
Serial argument	It includes a reasoning chain.	
Divergent argument (Beardsley, 1950)	When a premise supports several claims.	
Linked argument (Thomas, 1973)	It includes two premises; however, neither of the two premises independently supports the claims. The premises are only relevant to the claim conjunction.	

Research on pedagogical intervention in EFL argumentative essay writing has frequently examined cohesion and coherence. However, little research has been conducted on how the students perform their rhetorical patterns in argumentative writing. Focusing on EFL university students at an undergraduate level, this study aims to analyze their argumentation structures by breaking down the essential elements in argumentation, such as how they build a case claim and premise(s) toward a particular phenomenon.

3. METHODS

3.1 Data Collection Process

The data for the present study were collected from 400 argumentative essays which were selected randomly. However, after further reading, six essays were considered ineligible for further process due to ambiguous formatting and plagiarism

issues. Thus, 197 essays were compiled, each from a Thai university, i.e., Walailak University, Nakhon Si Thammarat, and an Indonesian university, i.e., Universitas Islam Indonesia, Yogyakarta. Since students in both countries were enrolled in an introductory course in general writing, they were exposed to basic writing skills, such as sentence writing, paragraph writing, and essay writing. Their English proficiency level was also in the similar range of A2-B1 CEFR level. All student participants completed and signed the consent form to volunteer in this research, and they can withdraw their participation anytime.

During the data collection, each lecturer from Thailand and Indonesia informed those lecturers who taught the basic writing subject regarding the purpose of this study at the beginning of the course. In this research, we did not specify any particular themes the students had to write. Yet, we shared similar goals for the students to produce an argumentative essay by the end of the term. The purpose of this argumentative writing class is to make the students able to construct an argumentative essay as a response to the given topics. They were taught the basic concept of argumentative writing during the course. After learning the structure of argumentative writing, the students were instructed to write an essay based on the topics they ought to choose. During the writing process, consultation and feedback were provided to support their learning.

3.2 Analysis Procedure

To analyze the data, we referred to content analysis procedures proposed by [Krippendorff \(1989\)](#). First, we put the data into an academic context in a way that the students should provide their stance and arguments upon students-related provocative issues in Thailand and Indonesia, e.g., learning styles, national migration issues due to disparities in education quality, mental and health issues, and lifestyle issues. The research instrument in this study was a spreadsheet that was used to categorize the claims and premises from 394 essays. We codified the essays in accordance with [Stab and Gurevych \(2017\)](#). During this phase, we conducted a thorough examination of the students' argumentative essays to determine if the writing had a valid argument consisting of a claim, a premise, or neither. This analysis focused primarily on the body section of the essays, as it is where the students' evaluative language towards a specific phenomenon is most prominently expressed.

We annotated the essays by labeling the Thai students' argumentative essays from ST1-ST197 and ST198-ST394 for the Indonesians'. To validate the data analysis, we performed cross-checking between us. We both were aware of the challenges that the students experienced when writing an argumentative essay in English. To ensure the data trustworthiness, two research assistants were present in dataset analysis to re-examine the argumentative patterns after a brief training for data triangulation.

4. RESULTS

In this section, we provide a comparative analysis of argument diagramming between Thai and Indonesian students found in their essays. After several phases of compliant reading, we as the authors, who acted as peer raters, and the two independent research volunteers involved also identified some markings in the use of discourse markers to ensure we did not miss any argumentation structures. By referring to

argument diagramming by Stab and Gurevych (2017), we evaluated the argument components to consider the number of argument diagrams observed in the students' essays. On closer inspection, the students' essays were generally found to follow a claim-oriented procedure by stating a brief background of problems and continuing with collecting their claims. The argument types were then observed, and the results are disclosed in Table 2.

Table 2. Frequency of argument diagramming found in EFL essays.

Thai Undergraduate Students		Indonesian Undergraduate Students	
Argument types	Occurrences	Argument types	Occurrences
Basic argument	90.25%	Basic argument	87.5%
Convergent argument	2.75%	Convergent argument	3%
Divergent argument	0.5%	Divergent argument	2.5%

From Table 2, the majority of both Thai and Indonesian students wrote their essays by forming a basic argument that included a claim supported by a single premise. As described in Table 2, 90.25% of the arguments written by Thai undergraduate students were in a basic structure, while 87.5% of the same cases were reflected in Indonesian undergraduate students' arguments. This shows how they only considered the minimal initial structure of an argument model. A maximum of 3-percentage occurrence in argument writing represented their effort in building up the layers of premises and/or claims identified in convergent and divergent structures by Thai and Indonesian undergraduate students. In the following, we provide samples of argument diagramming from the representatives of students' essay writing in each category.

4.1 Basic Arguments

As elaborated above in the finding, a basic argument, which refers to a claim supported by a sole premise, was favored in the students' argumentative essay writing. The patterns were similarly found in both Thai and Indonesian students.

Thai students' samples:

- 1) Today, many students or adolescents are suffering from depression and stress in the academic society, where homework is a major stress factor (**claim**). Homework affects students' grades as *they (homework)* put pressure on students to do it correctly and best for their grades (**premise**). (ST76)
- 2) Bubble tea contains caffeine from tea (**claim**). This can affect concentration, learning, and mood, causing awake and insomnia at night (**premise**). (ST103)
- 3) There should be no morning classes because some students are not ready to study at that time (**claim**). This is causing the students to become tired fatigue for the body, brain blurred, no concentration, study in the morning (**premise**). (ST122)

Indonesian students' samples:

- 4) I stand against the saying that life was easier 100 years ago (**claim**). By saying that a century ago life was easier means that we are not changing for the better because clearly life back then was not suitable for modern people and even to specific groups of people that experience degradation whether it be in their own homeland or migrated with the hope of having a better life for themselves and their family (**premise**). (ST251)
- 5) The money that has been used for anti-smoking advertising is wasted (**claim**). The country has a lot of debt, why not use it to pay off debt or maybe to make a business that can grow in the future (**premise**). (ST311)

- 6) Despite studying English for many years, many students still cannot communicate English (**claim**). Many students experience anxiety when speaking English (**premise**). (ST320)

The samples above represent a variety of topics that the students were assigned to work on, such as the danger of bubble tea, the consequence of morning class, the effectiveness of anti-smoking advertising, the importance of studying English, and so on. The students made the claims by simply stating a point-to-prove extraction detecting a standard argument component. During the compliant reading, we confirmed that the majority of their argument structuring focused on establishing a minimum element of providing a claim by stating their stance and supported by only a premise, providing reasoning in a single layer. These samples show how the majority of their essays were written. At this point, as pointed out by Hammad's (2013) findings in regards to lack of content knowledge, the current study confirms the idea that the students could not extend their premises in additional linkages given the facts that they simply added new claims instead of extending the premise they wrote with further logical reasoning. It may also conform to Wray's (2012) notion of the nature of English as a language of formulaicity that challenges the students' language learning process to engage toward their evaluative positioning.

4.2 Convergent Arguments

A convergent argument is defined as "two premises that support the claim individually" (Stab & Gurevych, 2017, p. 625). The following samples are extracted from the students' argumentative essay writing displaying the structure of convergent arguments.

Thai students' samples:

- 7) I think the morning class should start around 10 o'clock (**claim**). When we start the class at 8 o'clock, it may be too early to cause extreme drowsiness (**premise 1**). Sometimes, it makes learning difficult to understand (**premise 2**). (ST26)
- 8) We should not study in the morning because it's not good to wake up early in the morning (**claim**). These days, most students like to sleep late because of work, homework, reading, playing games and phones, so most students don't want to get up early (**premise 1**). Due to not having enough time to sleep and also needing to wake up earlier than usual, it causes us to wake up late or not eat breakfast (**premise 2**). (ST68)
- 9) Social media is a major threat to society today (**claim**). Social media addiction can lead to depression, stress, anxiety, ADHD, and bipolar disorder (**premise 1**). It also makes us have less time to relax (**premise 2**). (ST132)

Indonesian students' samples:

- 10) Anti-smoking advertisements only frighten them but do not make them understand that cigarettes are dangerous and stop smoking (**claim 2**). The more prohibitions or signs of no smoking, the more it will encourage smokers to carry out their favorite activities (**premise 1**). The ban is also currently not happening much because smoking is dangerous (**premise 2**). (ST237)
- 11) The implementation of Received Pronunciation in Indonesian curriculum functions as the authentic resource of English material (**claim**). It is important for Indonesian students to be exposed to standardized English listening material as they will use English in academic and official context (**premise 1**). Another reason to implement RP in Indonesian curriculum is to standardize English discourse in the Indonesian education system (**premise 2**). (ST353)
- 12) IELTS can be used as a goal that motivates non-native speakers to improve their English as it is known as the standard legalized and accurate assessment of English language proficiency (**claim**). The IELTS test can help us to achieve our education, job, or life goals if we plan to enroll in a

university or college, apply to businesses, or register for a visa from government authorities (**premise 1**). The IELTS test is widely used and easily accessed (**premise 2**). (ST391)

As can be observed from the samples, some students presented the argumentation in convergent arguments on various topics. The structural features indicated 2 premises to support a claim independently. For example, in the case of ST237, the extension of the premises lay on two independent factors: 1) prohibitions encourage smokers to keep smoking and 2) smoking is dangerous, though the latter premise seemed out of the coordinated standpoint that he/she needed to describe further and elaborate. Both premises supported the claim, showing that the students were aware of how to structure their argumentation structure in a suggested argument type.

However, in contrast to the student's efforts, in both cases of Indonesian and Thai students' essays, we found that their subjectivity to construct a viewpoint is still lacking in terms of dialogic backgrounds to recognize the context they were referring to in their essay writing. To this extent, the students' ideas tend to represent spontaneous reactions instead of structured and logical ones. For instance, ST132 claimed that social media is a major threat to society, that he/she extends the premises to support the claim by saying that social media addiction leads to stress and mental disorders and it makes us have less time. The premises revolve around a basic assumption that the more somebody does this, the more they will get that without characterizing contextual details that may reflect the objectivity of the build-up case. The student should have started by validating why social media creates a major threat to society instead of directly assuming that social media addiction will eventually lead to mental strain and time inefficiency. The exploration of writing a good claim with acceptable premises needs to be revisited to the point where the students need to understand how they position themselves on the discussed issue.

4.3 Divergent Arguments

The last diagram structure, a divergent argument, identified in the students' argumentative essays refers to a premise that supports several claims. The following samples reflect on the idea that a premise is found in the last part of their argument after specifying details in their claims.

Thai students' samples:

- 13) People might think that social media has a positive effect, but it reduces the interaction and communication between peers (**claim 1**). In addition to wasting your time, social media causes excessive playing and connecting with social media while with other people or in meetings (**claim 2**). Also, we can't concentrate when we're doing homework or projects (**claim 3**). When we do our homework or work, we tend to use social media, which makes us waste time on other things on social media that are not our homework or work that may result in our goal not being achieved within the time limit. Most importantly, too much use of social media makes us less interested in real life (**claim 4**). As you can see, the social media is totally an enemy to us (**premise**). (ST142)
- 14) In general, most students want to study online (**claim 1**). There is no need to travel to study (**claim 2**). Online learning requires a method of teaching content in a logical sequence of content which is different from a lecture or one-on-one classroom (**claim 3**). Therefore, online learning is essential for effective learning (**premise**). (ST159)

Indonesian students' samples:

- 15) The implementation of the character education is based on the social function of cultures, traditions, values and norm of Indonesian people (**claim 1**). The 2013 curriculum implements several values in the students' textbook (**claim 2**). Thus, English textbook tend to contain social practices that may be not directly shown (**premise**). (ST273)
- 16) Anti-smoking advertisements do not cause people to not stop smoking because the message in anti-smoking advertisements does not make smokers afraid of the dangers posed by smoking (**claim 1**). Smokers do not believe in the effects of the disease because it does not occur directly after they smoke (**claim 2**). Advertisement warning of the dangers of smoking apparently does not affect cigarette sales turnover and the level of consumer cigarette consumption (**claim 3**). So, cigarette advertising is not very effective because people are just afraid but don't stop smoking (**premise**). (ST282)

Both samples portray a reasoning chain in inductive reasoning by focusing on a specific observation in their pattern details of the claims followed by a general conclusion in a premise. In the Thai student's sample (ST142), with the topic of social media and its effects, the premise was identified as a stance to oppose social media in four major claims: reducing interaction, excessive playing and connecting, not focusing on tasks, and a lack of interest in real life. Likewise, Indonesian student's sample (ST282) focused on the premise that the anti-smoking advertising is not effective by three claims: people are not afraid of the danger of smoking, people do not believe in the effects of the disease, and the warning does not affect the sale and the consumption of cigarettes.

As observed in the samples above, the premise was similarly identified as a concluding remark of the previous claims. The components in claims, however, still did not exhibit complexity in their argumentation, but the structure is obvious in modelling divergent arguments. Their experiences in responding to provocative issues highlight this way of delivering arguments. As previously detailed in issues regarding argumentative writing, Mei (2007) found that EFL student writers tend to respond to provocative issues with repetitive claims and a single premise. This finding is similar to Reddy and Pradita (2022), who found that EFL student writers tended to apply their understanding of creating claims. The participants of their research used lexemes that were related to proclaim and disclaim expressions more than the lexemes that represent premises. To some extent, there is a consistent pattern of EFL student-writers argumentation structure. However, observing the pattern found in the previous two decades' studies implies that there should be a concern about the English writing curriculum in EFL higher education.

5. DISCUSSION

From the findings of the argument diagramming as sampled above, we found a major attempt from the students to write their body section of the argumentative essays by evaluating a phenomenon. However, in terms of engaging themselves with the phenomenon, the students still based their positioning as a writer who just writes what he/she read instead of evaluating it from dialogically alternative voices after several data research regardless of the types of argument structures they attempted to write. Missing logical connections often occurred in the students' argumentative essay writing in all types of argument structures as they were unaware that there should have been a validating reasoning before claiming that a particular effect would happen

because of what they claimed to be the reason in the first place. On closer inspection, jumping logic would be a habitual practice that the students performed when writing an argumentative essay. [Rusfandi \(2015\)](#) validated this phenomenon where most EFL students were aware of the structural combinations in writing but had not reached their competence level in fluently performing it in their English texts. The finding of current study also affirms that the students were still concerned with following the argument structures instead of validating the content, in this case, their reasoning when generating claims and premises.

This study found that there is a difference to observe in terms of the overall quality of an essay and the argumentative quality of its text. Though there is a connection between these two, they should be treated as distinct constructs to be further assessed. First, in terms of the overall quality of the students' argumentative essays, we found that they followed the generic structure of the essay quite well. The students know how to compose what goes into the introductory, body, and conclusion paragraphs. They could also start identifying their stance on a certain issue in their assigned topic. However, regarding the quality of the argument itself, this study found the importance of matching the base of the argument diagramming function under the writers' argumentative ability. This has been warned by [Chryssafidou \(2014\)](#) as the students may face a potential challenge in integrating the scholars' viewpoints when they lack experience in critical writing, and this results in the students' difficulty in voicing out their arguments structurally. Most EFL students grounded their stance solely using basic argument patterns, reflecting their ability, especially for learners with low argumentative writing ability. The study from [Philippakos and MacArthur \(2019\)](#) that also adopted the framework of strategy instruction from [Coirier and Golder \(1993\)](#) and [Golder and Coirier \(1994\)](#) found that there was an improvement in their low-skilled students' writing, especially in terms of lexical density. As they cited, it is possible that when the students attempt to write in a more complex argumentation structure, it is apparent that their writing quality may deteriorate. The study found that EFL students need to be acquainted with a dynamic range of argumentative structures that should be exposed from early on. This way, they become more aware of the structures and know how to recognize them.

This study also essentially foregrounds the need to explore the cognition process underlying the interaction between argument diagramming and the writer. Writing itself is a process of cognition in which each individual processes it differently. The affordances of the argument diagramming are not always responding to their needs and expectations. The results of engaging with this argument structure become somewhat mixed among writers, with some strengths and weaknesses in their argumentation schema. Those results may come from potentially two reasons. First, the students were brought up in an environment that might not emphasize the need to question things or when the course of argumentative writing was done in a teacher-centered strategy. This has been observed by [Johns \(2017\)](#) and [Stapleton \(2017\)](#), where most EFL writing classes did not let dialogue and discussion happen among students. With that, the students lack the habit of expressing their ideas and may not react favorably to the suggestion of questioning the necessity of arguing the provided issue in argumentative essays. Second, all higher education in EFL settings has mostly been in a high expectation that their students should master critical thinking skills, but this system may not yet be established. In argumentative writing, the dynamic negotiation of students' skills lies in a generic structure and in such ideas of reforming the students'

critical thinking. This needs balanced support from all angles, such as more exposure to argumentation patterns from other countries' argumentative writing, more assistance from the teachers who can facilitate access to more argumentative structures in essays, as well as standardized rubrics that may help the teachers orient themselves to set minimum requirements of the assignment. Indeed, all of those considerations will take some time to re-assess.

6. CONCLUSION

This study attempts a practical approach to identifying the argumentative diagramming in the students' argumentative writing. The presence of argument diagramming empirically examines the students' ability in structuring their arguments. It indicates that although they intended to create an argument, their argument structures may have contained logical fallacies. However, by recognizing the structures as such, this study may draw attention to the missing claims and premises and provide constructive feedback to improve the quality of their argumentative writing.

This research sheds some implications on the teaching of academic writing. First, teachers should make their EFL students aware of argument structures. This is essentially important because, in the pre-writing stage, EFL students may create stronger outlines when they are made aware of the broad range of argument structures. This study does not imply that a basic argument structure is less qualified than the convergent and divergent ones. In fact, this study endorses EFL teachers to strengthen the students' potential in writing basic argument structures. Before composing arguments in divergent and convergent argument structures, the students should be equipped to develop a basic argument structure. The second implication is that EFL teachers should reconsider pedagogical instructions in assisting the students' writing to assure that the argument structures are skillfully delivered. This research, however, has limitations in extending the scope of EFL students' essay writings. Further studies can present an additional scope of other EFL countries.

ACKNOWLEDGMENTS

This research is fully supported by an internal research grant from Walailak University Grant Number WU64243 and has followed ethical procedures for human protection in conducting the research.

REFERENCES

- Abadiano, H. R. (1995). Cohesion strategies and genre in expository prose: An analysis of the writing of children of ethnolinguistic cultural groups. *Pragmatics*, 5(3), 299-324. <https://doi.org/10.1075/prag.5.3.02aba>
- Ahmed, A. (2010). Students' problems with cohesion and coherence in EFL essay writing in Egypt: Different perspectives. *Literacy Information and Computer Education Journal*, 1(4), 211-221. <https://doi.org/10.20533/licej.2040.2589.2010.0030>

- Aldridge, J. M., Fraser, B., Taylor, P. C., & Chen, C.-C. (2000). Constructivist learning environments in a cross-national study in Taiwan and Australia. *International Journal of Science Education*, 22(1), 37-55. <https://doi.org/10.1080/095006900289994>
- Altinmakas, D., & Bayyurt, Y. (2019). An exploratory study on factors influencing undergraduate students' academic writing practices in Turkey. *Journal of English for Academic Purposes*, 37, 88-103. <https://doi.org/10.1016/j.jeap.2018.11.006>
- Andriessen, J., Baker, M., & Suthers, D. (2003). *Arguing to learn: Confronting cognitions in computer-supported collaborative learning environments*. Kluwer Academic.
- Bacha, N. N. (2010). Teaching the academic argument in a university EFL environment. *Journal of English for Academic Purposes*, 9(3), 229-241. <https://doi.org/10.1016/j.jeap.2010.05.001>
- Bazerman, C. (1988). *Shaping written knowledge*. The University of Wisconsin Press.
- Cekiso, M., Tshotsho, B., & Somniso, M. (2016). Exploring first-year university students' challenges with coherence writing strategies in essay writing in a South African university. *International Journal of Educational Sciences*, 12(3), 241-246. <https://doi.org/10.1080/09751122.2016.11890431>
- Celce-Murcia, M., & Olshtain, E. (2000). *Discourse and context in language teaching: A guide for language teachers*. Cambridge University Press.
- Chandrasegaran, A. (2008). NNS students' arguments in English: Observations in formal and informal contexts. *Journal of Second Language Writing*, 17(4), 237-254. <https://doi.org/10.1016/j.jslw.2008.04.003>
- Chin, C., & Osborne, J. (2010). Supporting argumentation through students' questions: Case studies in science classrooms. *Journal of the Learning Sciences*, 19(2), 230-284. <https://doi.org/10.1080/10508400903530036>
- Chrysafidou, E. (2014). *Argument diagramming and planning cognition in argumentative writing* [Doctoral dissertation, University of Birmingham]. UBIRA ETheses. <http://etheses.bham.ac.uk/id/eprint/5048>
- Coirier, P., & Golder, C. (1993). Writing argumentative text: A developmental study of the acquisition of supporting structures. *European Journal of Psychology of Education*, 8(2), 169-181. <https://doi.org/10.1007/BF03173160>
- Golder, C., & Coirier, P. (1994). Argumentative text writing: Developmental trends. *Discourse Processes*, 18(2), 187-210. <https://doi.org/10.1080/01638539409544891>
- Hammad, A. E. (2013). Palestinian EFL university-level students' use of writing strategies in relation to their EFL writing strategies in relation to their EFL writing performance. *Journal of Basic and Applied Scientific Research*, 3(10), 214-223.
- Hankemans, A. F. S. (2000). State of the art: The structure of argumentation. *Argumentation*, 14(4), 447-473. <https://doi.org/10.1023/A:1007800305762>
- Harrell, M., & Wetzell, D. (2015). Using argument diagramming to teach critical thinking in a first-year writing course. In M. Davies & R. Barnett (Eds.), *The Palgrave handbook of critical thinking in higher education* (pp. 213-232). Palgrave Macmillan. https://doi.org/10.1057/9781137378057_14
- Harris, G. J., & Cunningham, H. D. (1994). *The Simon and Schuster guide to writing*. Prentice Hall.

- Hyland, K., & Hyland, F. (2006). Feedback on second language students' writing. *Language Teaching*, 39(02), 83-101. <https://doi.org/10.1017/S0261444806003399>
- Jackson, S. (2002). Designing argumentation protocols for the classroom. In F. H. van Eemeren (Ed.), *Advances in pragma-dialectics* (pp. 105-120). SicSat.
- Johns, A. M. (2017). Augmenting argumentation in second language writing. *Journal of Second Language Writing*, 36, 79-80. <https://doi.org/10.1016/j.jslw.2017.05.005>
- Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.), *International encyclopedia of communication* (Vol. 1, pp. 403-407). Oxford University Press. http://repository.upenn.edu/asc_papers/226
- Liu, X. (2013). Evaluation in Chinese university EFL students' English argumentative writing: An APPRAISAL study. *Electronic Journal of Foreign Language Teaching*, 10(1), 40-53.
- Lubis, A. H. (2020). The argumentation structure of research article 'findings and discussion' sections written by non-native English speaker novice writers: A case of Indonesian undergraduate students. *Asian Englishes*, 22(2), 143-162. <https://doi.org/10.1080/13488678.2019.1669300>
- Mei, W. S. (2007). The use of engagement resources in high- and low-rated undergraduate geography essays. *Journal of English for Academic Purposes*, 6(3), 254-271. <https://doi.org/10.1016/j.jeap.2007.09.006>
- Mercer, N. (2005). Sociocultural discourse analysis: Analysing classroom talk as a social mode of thinking. *Journal of Applied Linguistics*, 1, 137-168.
- Morton, J., & Storch, N. (2019). Developing an authorial voice in PhD multilingual student writing: The reader's perspective. *Journal of Second Language Writing*, 43, 15-23. <https://doi.org/10.1016/j.jslw.2018.02.004>
- Nejmaoui, N. (2018). Improving EFL learners' critical thinking skills in argumentative writing. *English Language Teaching*, 12(1), 98-109. <http://dx.doi.org/10.5539/elt.v12n1p98>
- Nussbaum, E. M. (2008). Collaborative discourse, argumentation, and learning: Preface and literature review. *Contemporary Educational Psychology*, 33(3), 345-359. <https://doi.org/10.1016/j.cedpsych.2008.06.001>
- Okada, A., & Shum, S. B. (2008). Evidence-based dialogue maps as a research tool to investigate the quality of school pupils' scientific argumentation. *International Journal of Research & Method in Education*, 31(3), 291-315. <https://doi.org/10.1080/17437270802417184>
- Philippakos, Z. A. T., & MacArthur, C. A. (2019). Writing strategy instruction for low-skilled postsecondary students. In D. Perin (Ed.), *The Wiley handbook of adult literacy* (pp. 495-515). John Wiley & Sons. <https://doi.org/10.1002/9781119261407.ch23>
- Phuket, P. R. N., & Othman, N. B. (2015). Understanding EFL students' errors in writing. *Journal of Education and Practice*, 6(32), 99-106.
- Qaddumi, M. (1995). *Textual deviation and coherence problems in the writings of Arab students at the University of Bahrain: Sources and solutions* [Doctoral dissertation, University of Nottingham]. Nottingham eTheses. <https://eprints.nottingham.ac.uk/11212/>

- Reddy, A. L. M. F., & Pradita, I. (2022). Appraisals analysis on the argumentation structure of Indonesian undergraduate students' research articles. *IALLTEACH: Issues in Applied Linguistics & Language Teaching*, 4(1), 97-106. <http://dx.doi.org/10.37253/iallteach.v4i1.6711>
- Rusfandi. (2015). Argument-counterargument structure in Indonesian EFL learners' English argumentative essays: A dialogic concept of writing. *RELC Journal*, 46(2), 181-197. <https://doi.org/10.1177/0033688215587607>
- Schafersman, S. D. (1991, January). *An introduction to critical thinking*. Retrieved on June 14, 2021 from <https://facultycenter.ischool.syr.edu/wp-content/uploads/2012/02/Critical-Thinking.pdf>
- Stab, C., & Gurevych, I. (2017). Parsing argumentation structures in persuasive essays. *Computational Linguistics*, 43(3), 619-659. https://doi.org/10.1162/COLI_a_00295
- Stapleton, P. (2001). Assessing critical thinking in the writing of Japanese university students: Insights about assumptions and content familiarity. *Written Communication*, 18(4), 506-548. <https://doi.org/10.1177/0741088301018004004>
- Stapleton, P. (2017). Ability to argue: Rooted in nature. *Journal of Second Language Writing*, 36, 83-84. <https://doi.org/10.1016/j.jslw.2017.05.007>
- Suthers, D. D., Toth, E., & Weiner, A. (1997). An integrated approach to implementing collaborative inquiry in the classroom. In R. Hall, N. Miyake, & N. Enyedy (Eds.), *Proceedings of the 2nd International Conference on Computer Support for Collaborative Learning* (pp. 275-282). International Society of the Learning Sciences. <https://doi.org/10.3115/1599773.1599807>
- Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.
- Wray, A. (2012). What do we (think we) know about formulaic language? An evaluation of the current state of play. *Annual Review of Applied Linguistics*, 32, 231-254. <https://doi.org/10.1017/S026719051200013X>