ASJP Algerian Scientific Journal Platform

Revue Algérienne Des Sciences Du Langage

Volume: 10 / N°: 1 (2025), pp205- 227

RASDL Revue Algérienne des Sciences Du Langage

Received 07/03/2025 Accepted : 01/06/2025

Exploring Critical Thinking Skills Use in Argumentative Essay Writing Case of 4th-year ENSB English Language Students

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Abstract

Twenty-first century education is expected to promote key study skills to cope with the new demands of the digital world, such as the use of technology, autonomous learning, and critical thinking skills. The latter is an essential requirement in most academic settings, where students need to demonstrate developed cognitive and metacognitive abilities, such as the ability to analyze and criticize information and regulate thinking processes. This case study aims to assess the use of critical thinking skills in writing argumentative essays by undergraduate teacher-trainees in the department of English at the École Normale Supérieure de Bouzareah, Algiers. The study employs an adapted version of Facione's (1994) rubric of critical thinking skills and an argumentative writing task to collect data. The statistical results demonstrated that the students moderately employ the majority of critical thinking skills. However, they exhibited significant weaknesses in identifying and structuring counterarguments, logically refuting opposing views, and assessing and supporting claims with evidence. The comparison between high and low critical thinkers revealed that the former group outperformed in structuring and integrating their ideas in the essay with a more consistent use of skills and a greater command of higher-order thinking skills. Nevertheless, neither group engaged with counterargumentation. A major implication of this study is that pedagogical approaches should aim to increase awareness among both ENSB students and teachers while implementing targeted exercises that strengthen evidence-based argumentation and counterargumentation competencies.

Keywords: critical thinking skills, argumentative writing, EFL teacher-trainees, high critical thinkers, low critical thinkers.

1. Introduction

Education is reinventing itself to keep pace with the changing needs of today's workplace. Skills such as critical thinking, creativity, and problem-solving skills are now seen as essential. These so-called 21st century competencies have developed into both significant learning objectives and necessary professional skills. Critical thinking skills, in particular, are associated with several benefits in educational contexts. From a broader standpoint, they are seen as the foundation of liberal education since they enable students to question the traditional authority of teachers (Facione, 2015). Within the classroom context, developing critical thinking abilities offers several benefits, including improved learning outcomes and higher motivation (Trilling & Fadel, 2009).

In L2 education, cultivating students' ability to analyze, evaluate, and synthesize information has become important. A growing body of research shows that teaching critical thinking enhances language learning skills, including vocabulary acquisition, reading comprehension, and argumentative writing (e.g., Malmir & Shoorcheh, 2012; Tusino et al., 2020; Hashamdar & Maleki, 2018). However, in order to teach particular skills successfully, it is important to first evaluate students' weaknesses and understand the underlying causes of those difficulties (Floyd, 2011). Accordingly, prior research has shown that EFL students have difficulties applying and using critical thinking techniques while writing argumentative essays (e.g., McKinley, 2013; Al-Dumairi, 2016 & Al-Jabari, 2016; Srinawati & Alwi, 2020; Lu & Swatevacharkul, 2024). Besides linguistic weaknesses such as word formation, vocabulary choice (diction), and structure, they have all agreed on lack of critical thinking skills in students' writing. Most notably, these studies highlighted students' challenges in developing a critical voice, synthesizing ideas, and producing academic arguments in general.

In the Algerian EFL context, research on critical thinking has mostly concentrated on teachers' perceptions and practices, with less emphasis placed on learners' skills and needs (e.g., Achoura & Merrouche, 2011; Baghoussi, 2021; Jouimaa, 2021). Research on the critical thinking skills of Algerian adult EFL learners, especially teacher-trainees at the pre-service teacher training college (ENSB), is limited, particularly in relation to their performance in argumentative essay writing. To gain a systematic understanding of the teacher-trainees' skills, it is imperative to assess their critical thinking. By determining which specific elements of critical thinking present difficulties for this group of students, teachers can modify their pedagogical approaches and provide focused assistance to help them develop their critical thinking skills.

This study aims initially to assess the status quo of EFL teacher-trainees' critical thinking, i.e., the extent to which they use critical thinking skills. For this phase, the students will be engaged in writing an argumentative essay on their views on writing a dissertation as a requirement for their graduation from the ENSB. Second, it investigates the differences in critical thinking components (CTC) between high and low critical thinkers to determine how each group utilizes specific components of critical thinking. Thus, two main research questions are put forward:

RQ1: To what extent do ENSB English teacher-trainees demonstrate critical thinking skills in writing argumentative essays?

RQ2: How do ENSB high and low critical thinkers compare in their performance on individual critical thinking skills?

2. Literature review

This section provides a review of the core concepts and previous findings related to critical thinking in L2 argumentative essay writing. It begins with a definition of critical thinking, followed by a discussion of previous research on critical thinking skills in EFL writing. Finally, it presents Facione's (1990) model of critical thinking.

2.1. Definition of critical thinking

A review of the literature on critical thinking reveals that the term is tricky, mainly because different people have different and occasionally contradictory ideas about it (Thomas & Lok, 2015; Vandermensbrugghe, 2004). That being said, the majority of definitions agree that critical thinking necessitates an active engagement with ideas that is "focused on deciding what to believe or do" (Ennis, 2015, p. 32). Active engagement with information is frequently described in terms of a range of cognitive processes and mental dispositions, including 'knowledge of the most basic structures in thinking (the elements of thought) and the most basic intellectual standards for thinking (universal intellectual standards)' (Paul & Elder, 2005, p.7). A comprehensive definition is provided by Facione (1990), who defines it as the 'purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based' (p.2). Accordingly, critical thinking is an introspective, goal-directed activity that encompasses both cognitive abilities and personal characteristics that affect how people approach thinking. It includes the abilities that "distinguish a skilled but sophisticated thinker from a skilled fair-minded thinker" (Paul

& Elder, 2005, p.7). It is argued that qualities like skepticism, open-mindedness, curiosity, inquisitiveness, and rationality contribute to the development of a more deliberate and introspective approach to problem-solving and decision-making.

2.2. Previous research on critical thinking in EFL writing

The body of research on the correlation between critical thinking and writing is significant and can be attributed to the cognitive demands of this productive skill and its nature, most notably in higher education (Phyu, 2024; Koukpossi et al., 2024; Srisudarso, 2024; Xiaolei et al., 2023). However, empirical research on the rate and variation of critical thinking skills use by adult students and in specific contexts (like EFL) can be said to be insufficient. This section examines key claims and findings regarding the relationship between critical thinking and writing, focusing on the use and variability of critical thinking skills and subskills in writing argumentative essays among university EFL students.

The literature on the link between writing and critical thinking emphasizes that: 'writing capabilities are tied to the development of critical thinking capacity in students, both which are recognized as requisites for students' academic success, success in the workplace, and in life' (Baron & Sternberg, 1987; Condon & Kelly-Riley, 2004; as cited in Karanja, 2021, p.230). However, and despite this apparent overlap between the productive skill of writing and the higher-order critical thinking skills, Goodwin (2014) claims that writing does not necessarily and directly teach critical thinking. Thus, a number of factors such as writing in L1, foreign language proficiency, metalinguistic awareness, sociocultural background, etc., were alternatively considered to better explain the mutual connection or otherwise influence that might exist between writing and critical thinking.

Similarly, a number of studies on critical thinking in EFL writing have identified these factors as key issues influencing the level of critical thinking undergraduate students demonstrate when completing academic tasks. Atkinson (1997) and Atkinson and Ramanathan (1999), for example, emphasized the sociocultural dimension of critical thinking, asserting that critical thinking was mainly shaped by the Western perspective and that 'many Eastern communities could not be expected to internalize critical thinking as they had not been brought up to question authority' (in Mehta & Al-Mahrooqi, 2014, p.2). In conjunction to this view, Ramanathan and Kaplan (1996, in Stapleton, 2002, p. 250) argued that 'presenting a strong voice is a Western notion that is not necessarily relevant in other cultures'. On the other hand, Kubota (1998, in Stapleton, 2002) opposed this idea through the findings of her study with her Japanese students, revealing that their L2 writing quality depends more on the quality of their L1 writing rather than on culture per se.

Despite the existence of research findings on the factors that link or otherwise affect writing and critical thinking skills, few studies have compared or distinguished between high and low critical thinkers. Previous research shows that high critical thinkers tend to outperform low critical thinkers in some aspects of argumentative writing (Golpour, 2014; Pei, Zheng, Zhang and Liu, 2017). However, they indicate that there are areas where both high and low critical thinkers encounter significant challenges. For differences in performance, Tan (2023) conducted an experiment with two groups of Chinese university students that examined four CT criteria: unambiguity, fair-mindedness, substance, and consistency. The results demonstrated that evidence and substance were not satisfactory, and there were no major differences in overall L2 critical thinking, mainly clarity, substance, or consistency among participants with different L2 levels. However, higher-level L2 students performed better than lower-level students in drawing conclusions and in fair-mindedness. In a different study, Wu, Duan and Ma (2023), investigated the macro-structure of argumentative texts composed by Chinese EFL students and how their critical thinking skills are reflected in rhetorical moves. The findings reveal that although students understand core argumentative structures, they face challenges with some sub-critical thinking components, such as counterarguments and rebuttals, suggesting a lack of critical thinking ability in these aspects.

This section synthesizes the findings related to critical thinking (CT) and argumentative writing. The review highlights a significant gap in the literature regarding the assessment of critical thinking skills in academic writing at the university level. To address this, the following section proposes Facione's (1990) framework as a valid method for measuring CT in the present study.

2.3. Facione's (1990) model of critical thinking

The study at hand adopts Facione's framework of critical thinking skills and subskills for its wide use and application in educational research, including EFL studies (Moeiniasl et al., 2022; Nejmaoui, 2018; Bernstein Greenhoot, 2016; Liu Stapleton, 2018 and Teng Yue, 2022). The study aims to examine how undergraduate students employ critical thinking skills in argumentative writing, such as the ability to identify, evaluate, and explain arguments. Facione's suggested list (see below) provides a detailed taxonomy that encompasses both cognitive and metacognitive skills, making it, therefore, a suitable analytical rubric to measure the students critical thinking skills and subcomponents.

Facione's (1990) model of critical thinking abilities includes six key components. The first one is interpretation, which implies understanding and conveying the meaning of experiences, situations, data, events and judgments. Second, analysis refers to identifying relationships

relevant to questions, statements, concepts, descriptions, or other representations that express beliefs, judgments, experiences, reasons, information, or opinions. Third, evaluation involves assessing the credibility of questions or representations in the form of reports or descriptions related to perceptions, experiences, situations, judgments, beliefs, or opinions, as well as interpreting the logical strength of their connections. Fourth, inference entails identifying and gathering necessary elements to draw logical conclusions, formulate assumptions and hypotheses, and consider relevant information to derive implications from data, situations, questions, and other representations. Fifth, explanation is the ability to clearly and logically describe reasons based on existing data. Lastly, self-regulation is the skill to monitor one's cognitive processes and the elements involved in problem-solving, particularly in applying analysis and evaluation skills. Table 1 below summarizes the skills and subcomponents of critical thinking as identified by experts in the Delphi research (Facione, 1990). It is important to note that the model pertains to critical thinking per se. In this study, the components have been adapted to address the critical thinking skills involved in writing argumentation.

Table N° 01: Critical thinking skills and subskills

Consensus list of critical thinking cognitive skills and subskills	
Interpretation	Categorization
	Decoding Significance
	Clarifying Meaning
Analysis	Examining Ideas
	Identifying Arguments
	Analyzing Arguments
Evaluation	Assessing Claims
	Assessing Arguments
Inference	Querying Evidence
	Conjecturing Alternatives
	Drawing Conclusions

Explanation	Stating Results Justifying Procedures Presenting Arguments
Self-regulation	Self-examination Self-correction

Source: Facione, 1990, p.7

Other equally relevant rubrics exist in the literature for the assessment and evaluation of critical thinking skills in writing in general and for EFL teaching in particular. Some of these scales are: Ennis and Weir's Essay Test (1985), Paul-Elder Critical Thinking Framework (2001), Brookfield's Critical Thinking Framework (1993), The Critical Thinking Value Rubric (2009) in addition to others. Most of the rubrics used can be applied across a range of disciplines to promote critical thinking as a universal ability and they all emphasize the need to:

- Construct clear and logical arguments
- Assess the validity of the argument provided
- Analyze and synthesize ideas coherently
- Draw valid conclusions (logic reasoning)
- Reflect on and self-regulate the processing of ideas
- Articulate and organize ideas clearly and logically (structure)

This study adopts and adapts Facione's (1994) rubric as a scaling measure of critical thinking in argumentative writing due to its reported validity and consistency, as reported in previous studies (Facione et al., 1998; Elder & Paul, 2008; Liu, Frank, and Liao, 2014).

3. Methodology

3.1. Participants

Fourth-year high school teacher-trainees enrolled during the 2024/2025 academic year participated in this study. A simple random sample of 59 students' writing essays was selected from a population of 100 writing samples. They had already studied writing for four years and were well-versed in the academic requirements of essay writing. The participants were chosen to help assess the teacher-trainees' critical thinking abilities and identify differences in critical thinking components (CTC) between high and low critical thinkers.

3.2. Methods

The methodology adopted for this study is quantitative, employing both descriptive and inferential statistical analyses. The primary data collection method is an argumentative writing task assigned to the students. These essays are intended to display the students' critical thinking skills, which will be evaluated using an adapted version of the Holistic Critical Thinking Skills Rubric (HCTSR) created by Facione (1994), as the second data gathering instrument. This rubric is a key tool for assessing critical thinking in diverse educational settings. Instead of focusing on individual skills, its design places a high priority on a comprehensive assessment of students' critical thinking ability. This comprehensive method allows teachers to evaluate the overall quality of students' reasoning and problem-solving abilities, which is essential in domains like education and language acquisition, which demand intricate decision-making. The original rubric was simplified and adapted to facilitate the scoring procedure of the students' argumentative essays. More precisely, some skills were divided into two components, following Facione's detailed description of these skills in his theoretical framework. The aim was to gain insights into the teacher-trainees' specific strengths and weaknesses. Furthermore, Facione's original four-grade scoring rubric was revised into a five-grade one to better fit the study's objective of comparing high and low critical thinkers. In order to accurately identify and categorize students with moderate critical thinking skills, the five-grade rubric has an 'average' category (score of 3). In order to ensure that only students with clearly high or low critical thinking abilities were included for examination, this classification was crucial in separating and eliminating average critical thinkers from the study. It is also worth noting that the adapted rubric excludes self-regulation due to the fact that it cannot be directly observed in the students' essays. Thus, the rubric is used to measure mainly the observable skills like identification of arguments, synthesizing ideas and evidence, and assessing and supporting claims. Table 2 displays the skills and subcomponents addressed in grading the essays by the two researchers.

Table N° 02: CT Skills in the original and adapted rubric and their description

CT Skills in the Original Rubric	CT Skills in the Adapted Rubric	Skill Description
Accurately interprets evidence, statements, graphics, questions, etc.	Categorization & Decoding (CAD)	The capacity to categorize ideas into meaningful categories and identify their importance in a particular context.

	Clarifying Meaning (CM)	The capacity to clarify meaning by rephrasing or elaborating on complex concepts in order to make them easier to understand.
Identifies the most important arguments (reasons and claims) pro and con.	Identifying and Structuring Arguments (IASA)	The ability to pinpoint key arguments, break them down into components, and logically structure them.
	Identifying and Structuring Counterarguments (IASC)	The ability to identify other points of view, acknowledge their advantages and disadvantages, and incorporate them coherently.
Thoughtfully analyzes and evaluates major alternative points of view.	logical Refutation of Opposing Views (LROOV)	The ability to methodically dissect opposing viewpoints through logical analysis and sound reasoning.
Draws warranted, judicious, non-fallacious conclusions.	Drawing Logical Conclusions (DLC)	The ability to link concepts and use reasoning to arrive at logical conclusions
	Synthesizing Ideas and Evidence (SIAE)	The capacity to connect ideas and evidence from multiple sources to support the thesis statement, showing how each piece complements the others.
Justifies key results and procedures, explains assumptions and reasons.	Assessing and Supporting Claims (AASC)	The ability to evaluate arguments and supporting evidence critically for sufficiency, relevance, and credibility.
Fair-mindedly follows where evidence and reasons lead.	Reasoning and Clarity (RAC)	The use of logical reasoning and clear explanation to support the thesis statement.
	Presentation of Arguments	The ability of expressing ideas in a fluent and logically connected

and Coherence (PAC) manner.

In order to separate high and low critical thinkers, and exclude the moderate ones, a percentage-based classification method is employed. The mean-based distinction was not employed since it may misclassify students, as it reflects group performance rather than a meaningful proficiency level.

Classification Standards:

• Students scoring equal to or higher than 70% on the rubric are allocated 35-50 points and subsequently classified as high critical thinkers (HCT).

• Students scoring equal to or below 50% on the rubric are allocated 10-25 points and are subsequently classified as low critical thinkers (LCT).

A threshold of 70%, instead of 80%, was adopted. This is because a disproportionately small percentage of high critical thinkers was generated by the 80% threshold. Lowering the threshold helped to improve the representativeness and analytical value of the classification. Moreover, given the educational background and training level of ENSB students, the threshold allowed the inclusion of students who had strong and developing critical thinking skills without being excessively restrictive.

3.3. Procedure of data collection and data analysis

The study was conducted is two parts. The first part started on November 10th and ended on December 10th during the 2024-2025 academic year. The study sample was required to write an argumentative essay expressing their thoughts on whether or not writing a dissertation should be a requirement for graduating from a teacher training school. The theme of the essay was selected to bear direct relevance to their status as teacher-trainees, with the aim of encouraging them to express personal viewpoints on the matter. The participants had to provide consent, after which they were given 1 hour to write their essays. In the second phase, the students' essays were analyzed in their content using Facione's revised scoring rubric. Students were then classified into categories of high and low critical thinkers. After the classification process, the findings were examined using descriptive and inferential statistics. Python version 3.8. was used to conduct the statistical tests, i.e., mean, standard deviation, and independent samples t-test. Tests of normality and other assumptions were conducted

before performing the t-test. The next section presents the main results obtained followed by a discussion of the findings.

4. Findings

This section presents the analysis, interpretation, and discussion of the study findings. Descriptive statistics were generated and an independent samples t-test was performed in order to answer the research questions.

4.1. EFL teacher-trainees' critical thinking skills in EFL argumentative writing

Table 3 presents the mean scores, standard deviations, and rank for critical thinking (CT) skills in EFL argumentative writing. These statistics contribute to answering the first research question. Below is the analysis and interpretation of the results.

Table N° 03: Mean scores of critical thinking skills in EFL argumentative writing

CT Skill	Mean	SD	Rank
CAD	3.52	1.10	7
CM	3.62	0.90	4
IASA	4.08	1.00	1
IASC	1.03	0.18	9
AASC	2.79	0.63	8
LROOV	1.03	0.18	9
DLC	3.69	1.02	3
SIAE	3.59	1.20	6
RAC	3.61	1.05	5
PAC	3.76	1.05	2

The results presented in Table 3 show that the argumentative essays written by the teacher-trainees demonstrate varying levels of critical thinking proficiency across several components. Identifying and Structuring Arguments (IASA: 4.08) received the highest mean score,

followed by Presentation and Coherence (PAC: 3.76) and Drawing Logical Conclusions (DLC: 3.69). Clarifying Meaning (CM: 3.62), Reasoning and Clarity (RAC: 3.61), Synthesizing Ideas and Evidence (SIAE: 3.59), and Categorization and Decoding (CAD: 3.52) obtained a moderate mean value, indicating, intermediate skill level. Three critical thinking components, however, showed noticeably low scores: Logical Refutation of Opposing Views (LROOV: 1.03), Identifying and Structuring Counterarguments (IASC: 1.03), and Assessing and Supporting Claims (AASC: 2.79). The standard deviations show that IASC and LROOV have the lowest variability (both SD=0.18) while SIAE has the largest variability (SD=1.20), indicating consistent but low performance on engaging with counterarguments among the student participants.

These findings indicate that the teacher-trainees possess strong abilities in constructing and organizing their arguments while presenting them coherently, which shows a solid grasp of basic essay writing skills. However, their ability to assess and support their arguments with evidence is underdeveloped. They also reveal that the teacher-trainees have acquired sufficient skills when it comes to thinking logically, drawing logical conclusions, synthesizing ideas and evidence, clearly describing concepts, and classifying and contextualizing ideas. The extremely low scores obtained by IASC and LROOV shed light on a significant weakness in their capacity to engage with opposing opinions, pointing to a tendency for one-sided argumentation. This means that the teacher-trainees can effectively identify and organize their perspectives, but struggle with the more sophisticated aspects of critical thinking that require engaging with and responding to alternative viewpoints. Their consistently poor performance in IASC and LROOV, as indicated by standard deviation scores (0.18), is quite revealing with regard to their inability to think critically, and particularly to recognize and interact with divergent opinions. This shows that strategic instruction that aims at promoting these particular critical thinking abilities is necessary.

4.2. Comparison of critical thinking skills in EFL argumentative writing between high and low critical thinkers

Table 4 presents the statistical results elicited to answer the second research question of this study. It displays the mean scores and t-test measures that depict the comparison between high and low critical thinkers in argumentative writing.

Table N° 04: Descriptive statistics and t-Test results for high and low critical thinking groups

CT Skill	High Critical	Low Critical

	Thinkers		Thinkers		T	p-value
	Mean	SD	Mean	SD		
CAD	4.47	0.51	2.2	0.67	-11.15	< .001
CM	4.31	0.47	2.6	0.63	-9.02	< .001
IASA	4.78	0.41	3	0.65	-9.68	< .001
IASC	1.05	0.22	1.06	0.25	0.16	.867
AASC	3.15	0.37	2.33	0.72	-4.30	< .001
LROOV	1.05	0.22	1.06	0.25	0.16	.867
DLC	4.68	0.47	2.6	0.63	-10.95	< .001
SIAE	4.78	0.41	2.13	0.63	-14.59	< .001
RAC	4.57	0.50	2.33	0.48	-13.03	< .001
PAC	4.73	0.45	2.6	0.50	-12.96	< .001

As shown in table 4, high and low critical thinkers exhibit different levels of proficiency in the majority of skills. High critical thinkers showed exceptionally strong performance in, a number of domains, with the highest means obtained by synthesizing ideas and evidence (SIAE), identifying and structuring arguments (IASA) (both 4.78), presentation and coherence (PAC: 4.73), drawing logical conclusions (DLC: 4.68), and reasoning and clarity (RAC: 4.57). Diametrically opposed scores are obtained by both identifying and structuring counterarguments (IASC) and logical refutation of opposing views (LROOV) with a mean value of 1.05. As for low critical thinkers, they consistently scored worse, with the majority of their means falling between 2.13 and 3.0. CAD, IASA, AASC, DLC, SIAE, RAC, and PAC were among the components with statistical significance ($p < .001$), suggesting significant differences across the two groups. The IASC and LROOV, where both groups performed poorly, showed no discernible differences ($p = .867$). Additionally, the standard deviations were generally smaller for high critical thinkers (the majority ranging from 0.41 to 0.51) compared to low critical thinkers (the majority ranging from 0.63 to 0.72), suggesting more consistent performance among high critical thinkers.

These findings reveal a significant gap between high and low critical thinkers' abilities in argumentative writing. Differences between the first and second group are observed at the level of most critical thinking components. High critical thinkers are proficient at structuring

arguments, integrating ideas, and logically expressing their thoughts, as evidenced by the noticeable differences in components like IASA, SIAE, and PAC. Nonetheless, the similarly subpar performance of both groups in IASC and LROOV (with no discernible difference) suggests that even highly critical thinkers find it difficult to deal with opposing viewpoints and counterarguments. Regardless of general critical thinking ability, this points to a systematic deficiency in the development of these particular critical thinking skills. It is worth mentioning that the larger variations associated with low critical thinkers suggest less stable command of these skills. On the other hand, the smaller standard deviations associated with high critical thinkers, indicate more consistent use of critical thinking skills in this group. This points to a need for directed teaching in counterargumentation skills for all the students, while also indicating that additional instruction in basic argumentation skills would benefit low critical thinkers.

4. Discussion of the findings

The findings related to the first research question reveal that students demonstrate more expertise in recognizing and evaluating supporting arguments in their EFL argumentative writing through their proficient use of the skill of Identifying and Structuring Arguments (IASA). On the other hand, they seem to struggle with the skills of Assessing and Supporting Claims (ASC), Identifying and Structuring Counterarguments (IASC) and Logical Refutation of Opposing Views (LROOV), where students' proficiency decreased, showing that these are more demanding CT components. As for the skills of Drawing Logical Conclusions (DLC), Presentation and Coherence (PAC), Clarifying Meaning (CM), Reasoning and Clarity (RAC), Synthesizing Ideas and Evidence (SIAE), and Categorization and decoding (CAD), students showed moderate performance in these higher-order thinking skills that can represent logical reasoning and synthesizing.

The disparities noticed across skill categories indicate that some of them are more problematic than others. Students excelled in less demanding skills like identification of arguments and their presentation (IASA and PAC respectively). These are parallel to lower order thinking skills in Bloom's taxonomy (Anderson & Krathwohl, 2001, in Wilson, 2016) where students are capable of restating and presenting previously learned or memorized arguments, most importantly when they are assigned writing tasks on topics they are familiar with. However, at a more advanced level, students' CT proficiency seems to be moderate to weak, namely when higher-order thinking skills are involved. This can be noticed from the decline in performance as students move from synthesizing ideas and categorizing to the more challenging skills of

refutation of opposing views, identifying counterarguments, and assessing claims. Previous findings (e.g., Stapleton & Wu, 2015) explain this by pointing to students' overreliance on surface-level argumentation that lacks deeper analysis and evaluation.

Several factors have been identified in the literature to explain the decrease in performance of CT skills among EFL university students when writing argumentative prose, most notably at a more advanced/higher-order thinking level. As indicated in the literature section of this paper, some key variables are related to L1 writing conventions that might prevent EFL students from exposing or expressing their counterarguments as mentioned by Qin & Karabacak (2010), Wingate (2011) and Stapleton (2001), who have highlighted some sociocultural and educational rules that compel students to favor agreement over opposition when expressing their views. Another important consideration is the FL proficiency level which, in some cases, hinders the process of higher-order thinking (Ennis, 1996). This difficulty is, however, not exclusive to EFL learners, as Kuhn (1991) asserted that even native speakers tend to present and expose arguments when debating rather than evaluate and assess their strength. Besides, and as the revised Bloom's taxonomy shows, it is commonly agreed that evaluative reasoning is more complex than simply constructing an argument. The former is more cognitively and metacognitively demanding especially that it operates in an EFL context where L1 and L2 writing norms do not align nor the cultural and educational backgrounds of the students. Therefore, the study findings have important implications for writing instruction, which should focus on improving the most challenging and least addressed CT skills, most notably identifying and structuring counterarguments and refutation of opposing views.

The second research question addresses the comparison between HCT and LCT. The statistical results display variation among the participants in their performance levels. The largest difference in the t-scores corresponds to Synthesizing Ideas and Evidence (SIAE), Reasoning and Clarity (RAC), and Presentation and Coherence (PAC), while the smallest difference is obtained by Clarifying Meaning (CM), Drawing logical Conclusions (DLC), and Categorization and Decoding (CAD). Put differently, the results indicate that what really distinguishes advanced critical thinkers is not their basic critical thinking abilities such as organization of ideas, contextualization, and clarification of meaning, which align with the low levels of Bloom's taxonomy (comprehending and applying). What sets the two groups apart is the capacity of high critical thinkers to engage with complexity through synthesizing different pieces of information in a meaningful way, using logical reasoning and clear explanation to support the thesis statement, and presenting complex ideas coherently. The low

mean value obtained by the two groups in identifying and structuring counterarguments (IASC) and logical refutation of opposing views (LROOV) indicates that these skills are not exhibited by the teacher-trainees, suggesting a lack of explicit instruction or lack of emphasis on these argumentative essay components. Although less important, the difference between the two groups in Identifying and Structuring Arguments (IASA) and assessing and Supporting claims (AASC) suggest that high critical thinkers are better at assessing and supporting claims with evidence and identifying and structuring arguments. AASC, more particularly, is an area that requires further improvements for both groups.

Related studies in the context of EFL writing is limited, which highlights the lack of sufficient research in the field. However, at a broader level, our results align which research indicating that adult higher critical thinkers are more proficient than lower ones in higher-order thinking skills. For example, research led by Dwyer et al. (2011) and Teng and Yue (2022) reported the cause-and-effect relationship between increased critical thinking abilities and reasoning skills and the correlation between critical thinking and coherence in writing, respectively. Moreover, Abrami et al.'s (2008) meta-analysis documented the relationship between critical thinking skills and logical reasoning. Finally, our results join those of Johan (2024), who found that argumentation, including both evidence-based argumentation and counterargumentation was underdeveloped in the argumentative essays written by both high and low critical thinkers.

In the current content of research, high critical thinkers may use writing strategies, like brainstorming and outlining, which help in generating different ideas and presenting them in a coherent manner, respectively. In a 2011 study, Nikoopour et al. (2011) examined the connection between critical thinking and language learning strategy use among Iranian language learners. Their results show that some direct and indirect language learning strategies, including social, metacognitive, and cognitive, are significantly correlated with critical thinking. Ku and Ho (2009) sought to investigate the role of metacognitive techniques in critical thinking, in a different study. The results indicate, that "good critical thinkers" engage in more metacognitive processes. High critical thinkers may also engage in the writing exercise more frequently while also being more cognitively engaged. In a study led by Johan (2024), it was concluded that students with high and extremely high critical thinking abilities favored more difficult language learning tasks that called for higher-order thinking. Conversely, people who were classified as having low critical thinking skills favored learning tasks that called for low-order thinking. This implies that these skills develop and improve in response to direct instruction and practice. As for CM, DLC, and CAD, they are basic skills

that are introduced early in the first and second year of study, at ENSB, as part of paragraph and essay writing instruction. Students are taught how to identify relevant ideas, organize them in terms of the introductory, body, and concluding paragraphs. This can explain the less significant, yet notable difference between high and low critical thinkers in these areas. Once again, the results suggest that these skills would benefit from explicit instruction and regular practice.

The results obtained from the current study unveiled significant writing issues at the undergraduate level whereby participants demonstrated an acceptable level of CT skills use, yet with some highlighted flaws at a more advanced level. For this, a number of recommendations is put forward to address certain gaps. The study calls for a more developed, intensive, and guided practice in the identification and use of counterarguments in writing in addition to balancing views and alternative perspectives. This can be done through the implementation of debate-based activities, as suggested by Stapleton and Wu (2015), that can act as a warming up stage to reinforce critical thinking, argument articulation, organization, and recognition and identification of opposing views. Moreover, and as a closely related concept to critical thinking, instruction should be directed to raising metacognitive awareness to the range and use of CT skills and their subcomponents. This could enhance their control and regulatory processes into managing and differentiating the different thinking processes required for writing a well-articulated and sound argumentative essay. In this vein, incorporating reflection and reflective practices would enhance students thinking process not only at lower levels but also allow them to evaluate and use argument and counterarguments more effectively at a higher level and thus promote their criticality in writing. In light of this, teachers can direct their attention to the role cognitive and metacognitive strategy instruction can play in enhancing their students critical thinking abilities via the employment of effective strategies like: planning, brainstorming, monitoring, revising, and evaluating.

1. Conclusion

From a wider viewpoint, this exploration revealed that ENSB students are moderate critical thinkers. Their critical evaluation of arguments and supporting evidence, however, is woefully inadequate, and their inability to consider and analyze alternative viewpoints is much more obvious. Furthermore, it was discovered that high critical thinkers outperformed their low-level counterparts in critical thinking, particularly when it came to tasks demanding higher-order thinking. Surprisingly, they performed at the same low level in counterargumentation. These results point to a critical gap in EFL teacher preparation that needs to be filled for

academic reasons as well as to foster tolerance and peaceful co-existence in future classrooms, where strong argumentation and critical thinking form the basis of meaningful dialogue.

Add to that and considering that critical thinking in academic EFL writing was investigated within a higher education context (ENSB teacher training school), it is essential to equip students with advanced higher-order thinking abilities such as evaluation of arguments and opposing views in a strategic manner. This can be realized through leveraging instructional modes and materials to that level by adopting a wide range of activities like classroom debates and discussions that can foster and activate the skills under study. Besides, other equally significant and relevant variables come into play alongside critical thinking and may considerably impact its use, namely reflection, cognitive and metacognitive strategy use, and instruction. These can be addressed in future research endeavors that might measure or explore the impact of these factors (or others) on critical thinking skills use in writing or other language skills.

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