



**Investigating the Relationship between EFL
Argumentative Writing and Critical Thinking
Skills among Students of English
Section at Faculty of Education**

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ABSTRACT

The present study aimed to investigate the relationship between EFL argumentative writing and critical thinking skills of students at the Faculty of Education. The participants of the study were 45 second-year students enrolled in the English section at the Faculty of Education, Benha University. The instruments and materials of the study included an EFL argumentative writing skills test, an analytic rubric for scoring and analyzing the participants' performance, a critical thinking skills test, and an analytic rubric for scoring and analyzing the participants' performance. The EFL argumentative writing and the critical thinking skills tests were administered to the study participants. The Pearson correlation coefficient was used to find out whether there was a significant correlation between the study participants' EFL argumentative writing and critical thinking. The findings revealed that there was a positive relationship between the development of EFL argumentative writing and critical thinking skills of second-year English major students at the Faculty of Education. Consequently, great emphasis should be given to the significant correlation between argumentative writing and critical thinking skills for the development of English major students' academic progress.

Keywords: EFL argumentative writing, critical thinking

دراسة العلاقة بين مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية والتفكير الناقد لدى طلاب شعبة اللغة الإنجليزية بكلية التربية

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المستخلص

هدفت الدراسة الحالية الي دراسة العلاقة بين مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية ومهارات التفكير الناقد لدى طلاب كلية التربية. وتكونت عينة الدراسة من ٤٥ طالب من طلاب الفرقة الثانية شعبة اللغة الإنجليزية بكلية التربية جامعة بنها. واشتملت أدوات الدراسة على اختبار مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية، ومقياس أداء متدرج لتقديره، واختبار مهارات التفكير الناقد، ومقياس أداء متدرج لتقديره. وقد تم تطبيق اختبارين مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية واختبارين مهارات التفكير الناقد علي المشاركين في الدراسة. وللكشف عن وجود علاقة ارتباطية بين الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية والتفكير الناقد لدى طلاب الفرقة الثانية بشعبة اللغة الإنجليزية، تم استخدام معامل ارتباط بيرسون. كشفت النتائج أنه توجد علاقة إيجابية بين تنمية مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية ومهارات التفكير الناقد لدى طلاب الفرقة الثانية بشعبة اللغة الإنجليزية. وبالتالي، ينبغي التركيز بشكل كبير على الارتباط الهام بين مهارات الكتابة الجدلية ومهارات التفكير الناقد من اجل التقدم الأكاديمي لطلاب شعبة اللغة الإنجليزية.

الكلمات المفتاحية: مهارات الكتابة الجدلية باللغة الإنجليزية كلغة أجنبية ، التفكير

الناقد

Introduction

Argumentative writing helps the individual to express his thoughts and opinions and defend his own position through reasoning, observation, reflection, and analysis. In critical thinking, one makes up his mind through observation, experience, reasoning, communication, analysis, and evaluation. Thus, it can be said that argumentative writing and critical thinking are interrelated. Development in argumentative writing skills may result in an improvement in critical thinking skills as well. As a result, acquiring critical thinking skills may help EFL students write argumentative essays of high quality as the critical thinking skills will be reflected in their argumentative writing.

Argumentation is referred to as the effective reasoning. It is the act of providing proof or evidence to back up claims. It is the capacity for providing justifications (Zarefsky, 2005:6). Richards and Schmidt (2010) defined argumentative writing as a composition which "attempts to support a controversial point or defend a position on which there is a difference of opinion" (p. 372). Hirvela and Belcher (2021) defined argumentative writing as "the writing in which, at a minimum, an author states a claim, uses some form of evidence, reasons, examples, etc. -to support the claim, and shows how the evidence supports the claim, i.e., engages in what is called warranting" (p.1).

In an EFL argumentative essay, gathering and analyzing evidence is necessary to develop a credible or persuasive position. The claims presented lack credibility if they are not backed up by evidence; they are only views and cannot be considered valid academic arguments. Evidence may be accessible in both print and digital media, including books, newspapers, journals, documentaries, websites, and photos. Additionally, it might be discovered in personal experiences. It can be obtained via reading, surveying, watching, interviewing, observing, testing, or interviewing. Many different kinds of evidence are usually needed to make a case that is genuinely compelling. When a claim is backed by evidence from several sources, it increases the possibility that it is true and stronger since the reader may triangulate the evidence by contrasting it with other sources (Fang, 2021: 146).

Strong EFL argumentative essays usually have an introduction, a thesis statement or claim, a supporting argument, an assessment of any

potential objections, and a conclusion. Essays often begin with a paragraph that serves as the introduction which usually contains the thesis statement. This is the claim that the essay will make an effort to support. The thesis should be expressed in just one sentence. It leads the audience from premise to premise in the essay. The thesis is supported by a convincing argument that is made in the essay's main body. Each premise is made in turn and is backed up with data, statistics, and other material that is well clarified, illustrated, and supported. In evaluating objections, strong argumentative essays make a sincere effort to take into account any readers' criticisms of the thesis statement or its premises. In conclusion, the essay usually ends with a restatement of the key issue emphasizing the importance of the thesis in the last paragraph (Vaughn, 2019: 543-545).

Because of its many requirements, EFL argumentative writing is regarded as one of the most difficult writing genres to master (Razaghi & Zamanian, 2014:14). Understanding the subject, developing a claim, organizing ideas logically, and putting ideas into writing are all challenging in the EFL argumentative writing process. Since critical thinking demands the capacity for intellectual thought, a successful essay should, to some extent, include critical thinking components (Pei et al., 2017: 32). Argumentative writing is a very important and difficult writing type for EFL university students since it requires them to express their ideas in manners that are suitable for academic writing. Nevertheless, they have difficulties while utilizing these formats (Kargozari & Sadighi, 2022: 121).

Moreover, Setyowati et al. (2020) and Saputra et al. (2021) categorized the EFL students' problems into three categories: psychological, linguistic, and cognitive. The students' emotional states associated with writing an argumentative essay gave rise to psychological problems, such as anxiety, nervousness, low self-esteem, low self-confidence, low motivation, fear of making mistakes, feeling incapable of expressing an opinion and exercising critical thought, and pressure to produce the best work possible. Regarding linguistic challenges, learners struggled with organization, word class, word construction, vocabulary, grammar, and use of pronouns, conjunctions, determiners, and prepositions. The students also had difficulty with a variety of cognitive skills such as not having the information needed to

include relevant examples and facts in the essay's body, being unaware of the argumentative essay's main components, and not acknowledging how to format references correctly.

Consequently, Critical thinking is an intellectual competence that EFL students need to have in order to write argumentatively. Thus, critical thinking is necessary for creating argumentative essays (Fahim & Mirzaii, 2014: 3-8). To be competent and productive thinkers in today's world, students need to develop their thinking skills. For students to write well in English, they must be able to think in the language while writing and be able to make logical connections among ideas and facts in addition to knowing vocabulary and syntax (Srinawati & Alwi, 2020: 204).

Critical thinking is a mental exercise involving cognitive processes. The skills of critical analytical and evaluative thinking need the application of mental processes such as classification, judgment, selection, and attention. Critical thinking is a complex process of reasoning that requires a wide range of skills and attitudes. It comprises understanding other people's arguments, evaluating the data in favour of opposing views, fairly weighing the arguments provided by opponents, being able to read between the lines, reflecting systematically on subjects, and synthesizing knowledge (Cottrell, 2017: 2).

Critical thinking is considered to be the process of complex or unusual thinking. It is the process of analyzing, comprehending the issue, grasping the data and facts, and making unbiased conclusions (Prastya et al., 2014:193). It is a cognitive skill for problem-solving, interpretation, and criticism, or the ability to make a logical argument supported by credible, factual arguments and evidence which can then persuade readers orally or in writing. It also refers to the deductive and inductive skills that are based on strong facts and evidence, logical reasoning, and conclusive evidence. Thus, the ability to analyze and appraise knowledge, data, challenges, and concerns in order to reach reliable conclusions and make appropriate judgments (Halum & Guna, 2021:97).

Critical thinking is the process of systematically evaluating or constructing ideas or assertions using logical criteria. Because it uses particular procedures and methods, it is systematic. Since it is utilized to both construct and assess new beliefs, it encompasses both formulation

and evaluation. Additionally, it operates according to rational standards, where the strength of a belief's justifications is used to evaluate it. Additionally, logic, which is the study of sound reasoning, inference, and the rules that guide it, is a component of critical thinking. Since critical thinking goes beyond simple reasoning, it also takes into account the truth or falsity of statements, the assessment of arguments and supporting data, the application of inquiry and analysis, and a number of other abilities that are useful in deciding what to believe and how to behave. Critical thinking therefore results in empowerment, knowledge, and understanding (Vaughn, 2019:4).

Critical thinking entails having skills such as the capacity to assess arguments correctly, consider relevant evidence, and spot incorrect reasoning. (Mason, 2008: 2). There are several different abilities involved in critical thinking. These abilities include comprehending instructions and advice, assembling information from multiple sources coherently, confirming the accuracy and completeness of the information, adhering to regulations, problem-solving, and identifying the information that is relevant to a particular situation and whether it supports a particular claim. It encompasses also refuting illogical ideas, striving to avoid fallacies in thought, obtaining relevant data (evidence) when needed to bolster a claim (building arguments), assessing whether supposed evidence bolsters a claim (identifying and assessing arguments), and formulating plans and decisions based on the best available data or evidence (Salmon, 2013: 3-4).

It is important because it develops people's intellectual responsibility. It makes it possible for people to think critically, act rationally (believe or act in accordance with reason rather than emotion or prejudice), think independently, follow certain standards for reflective thinking (exercise good, rational judgement), and be reasonable and fair. Additionally, critical thinking enables people to differentiate between useful and irrelevant information. By expanding people's knowledge beyond what is offered, it helps them become more knowledgeable. It aids in overcoming many prejudices that impede independent thought. It makes it possible for people to recognize errors in their ideas. It can also instruct people on how to build some defences against false beliefs. It supports people's awareness of and sensitivity to needs and emotions (Sen, 2010: 16-20).

Critical thinking is an essential skill for learning. There are two phases to learning a subject. First, when students first formulate the underlying theories, concepts, and norms of the subject matter. The second stage, or application process, is when students successfully apply those theories, concepts, and principles to real-world situations. Good teachers encourage critical thinking, or intellectually stimulating thought, at every learning level. Socratic questioning is a common practice for the class teacher. The main notion here is that a teacher who fosters critical thinking would foster reflectiveness in their students by asking questions that stimulate thought, which is essential for the creation of knowledge (Adeyemi, 2012:159).

In college, there is a strong emphasis on higher-order thinking, which is the active, critical assessment of ideas and data. Consequently, critical thinking plays a pivotal role in the college curriculum. Through a critical thinking course, students can improve their performance in the classroom by learning a variety of skills. These abilities include developing and presenting one's own convincing arguments and ideas, as well as critically analyzing the opinions of others. Of course, students need to be able to understand what they are learning in order to succeed in college. There are a number of abilities that critical thinking imparts that can greatly improve students' comprehension of the claims and subjects covered in textbooks and college courses. It can also help students evaluate what they are learning in class in a critical way. Teachers may often urge their students to "critically" assess a topic or argument that was covered in class. Students' capacity to participate in these kinds of critical evaluations can be greatly enhanced by the skills and tactics that critical thinking education offers (Bassham et al., 2013: 7-9).

Proficiency in the language and the ability to think critically about the subjects they are studying or working on are prerequisites for success for EFL students in both their academic and professional endeavours. Since students need to be able to think, reason, communicate, and continue learning outside of the classroom, it is imperative to determine whether they require support with language development in addition to other skills (Shaila & Trudell, 2010: 2). It is the responsibility of instructors to ensure that EFL students are successful, conscious, creative, ready to take on new challenges, and accepting of diversity.

EFL students need to improve their language and critical thinking skills in order to accomplish these goals. Language development and critical thinking go hand in hand. Developing excellent critical thinking abilities will improve students' communication, self-esteem, and language acquisition (Carter, 2020:50).

EFL students can broaden their horizons and perspectives in language use as well as how they perceive the world by utilizing critical thinking skills and the target language. Critical thinking-trained foreign language learners are confident in their capacity to communicate and use language creatively in order to use relevant data, reason persuasively, and come to consistent and trustworthy conclusions. It is highly recommended that EFL teachers begin teaching their students to think critically from the very beginning of their language development in order to achieve higher language performance goals in the near run (Cundar-Ruano, 2021:364).

The quality of writing will increase with critical thinking because it depends on how writers present their ideas, express their opinions without passing judgment, and get readers to consider and even believe what they have to say (Sabu & Vernandes, 2019:60). Critical thinking is one of the most important abilities to have when writing argumentative pieces. Students with strong critical thinking abilities are expected to write exceptional and convincing argumentative essays (Winarti et al., 2021:3).

In higher education, argumentation is the core of critical thinking. It involves students posing queries, having debates, and expressing their opinions while using logic and reason to support or refute claims made about particular subjects (Beniche et al., 2021:195). Certain guidelines can be used to facilitate the integration of critical thinking into argumentative writing. First, argumentative writing requires critical thinking in addition to other vital language elements. Argumentative writing and thinking go hand in hand. Before starting to write an argumentative essay, students must have a solid comprehension of the subject matter because argumentative writing is a complex skill that incorporates not only practical aspects but also cognitive and social ones (Widyastuti, 2018:183). Additionally, since an argumentative writer must assess, evaluate, and counterarguments while preserving a logical

justification in order to persuade the reader, argumentative writing is seen as proof of critical thinking abilities (Hashemi et al., 2014:77).

Argumentative writing in EFL is seen as a sophisticated type of brainstorming and critical thinking, requiring a combination of skills that might be impacted by gender disparities and cooperative learning. Critical thinking and reasoning skills are necessary for good writing (Hoorijani & Tabrizi, 2023:202). Critical thinking is necessary when writing an argumentative essay in an EFL class. The goal of the argumentative essay is to persuade or convince the reader for a variety of reasons. An argument arises when two people agree on one thing but disagree on another. A viewpoint is expressed by one side, which is backed up by evidence, while the opposing side expresses a different viewpoint and backs it up with proof. Because of this, when writing argumentative essays, it is essential to exercise critical thinking in order to produce compelling arguments (Prastya et al, 2014:192).

Students must be able to reason logically and critically about the topic when writing an EFL argumentative essay. Thereafter, in order to strengthen their claims, the explanations had to be supported by a range of data. Using the supporting information from the body paragraphs, the conclusion should be written at the end. An argumentation element should have a connection between each of its parts. Students with strong critical thinking skills may articulate ideas without depending on bias or passion, but rather by evaluating and supporting their thesis statement with more reasoned reasoning. The foundation of an argumentative essay is the use of arguments and logic. Reason and logic are also essential components of critical thinking. However, a sharp critical thinker can avoid forming incorrect presumptions without considering relevant data and logical arguments (Suhartoyo, 2017: 36-37).

Argumentative writing helps students sharpen their critical thinking abilities. Establishing, clarifying, and expanding ideas through writing an EFL argumentative essay will support the development of critical thinking abilities. More precisely, in writing an EFL argumentative essay, writers need to comprehend the statement, explain what it means, and decide if it is contentious or not to construct a suitable argument. Writers must therefore distinguish between their own and the opposing points of view to gather evidence to support their own position and disprove the opposing views. They have to evaluate the

relevance and credibility of the evidence. After that, they explain why they gathered the information and how it either confirms their arguments or disproves those of their opponents. Then, they will thoroughly check the logic to reach reasonable and convincing conclusions. In a nutshell, argumentative writing requires the use of a number of critical thinking abilities, such as inference, interpretation, and analysis. Thus, the writer must be capable of thinking critically in order to develop an effective argumentative essay (Lu, 2019: 17).

According to the previous review, it is clear that there is a significant relationship between critical thinking skills and EFL argumentative writing. Thus, many studies have investigated this relationship. Some of these studies are (Bekele et al., 2022; Cahyadewi & Lolita, 2021; Muhsin et al., 2024; Sharadgah et al., 2019). Sharadgah et al. (2019) examined how writing argumentative essays helped English major students develop their critical thinking skills in terms of interpretation, analysis, assessment, inference, and explanation. Ninety-eight male English major students enrolled in a course on essay writing at Prince Sattam bin Abdulaziz University (PSAU), in Saudi Arabia, made up the study population. Critical thinking skills were assessed using the CT score rubric developed by Facione & Facione (1994). The findings demonstrated a substantial positive correlation between critical thinking and essay-writing skills.

Cahyadewi and Lolita (2021) investigated the ways in which argumentative writing reflects critical thinking and investigated the reactions of students when challenged to use critical thinking in an argumentative essay. There were seventeen students enrolled in Unesa's English department who made up the participants. The results showed that students' critical thinking abilities were good in argumentative writing and that they could use critical thinking to solve difficulties. In conclusion, the majority of students employed critical thinking skills in their argumentative writing in an efficient and successful manner.

Bekele et al. (2022) investigated how well first-year university students' argumentative paragraph writing skills were developed by critical thinking-infused paragraph writing training. The study participants were first-year Wollega University students enrolled in the EFL common course "Communicative English Language Skills II (FLEn 1012)" during the 2020–2021 academic year. Two randomly selected

intact classrooms with 31 and 32 students in each served as the treatment group and the non-treatment group, respectively, were included in the study. The results of the argumentative paragraph writing performance scores showed that the application of critical thinking-infused paragraph writing instruction resulted in a statistically significant difference in the argumentative paragraph writing performance between the control and experimental groups. Hence, it was recommended that EFL teachers, curriculum designers, and material producers should include critical thinking instruction in their classes to help first-year students develop their argumentative paragraph writing skills.

Muhsin et al. (2024) investigated the critical thinking techniques employed in English argumentative writing by private EFL university students in Makassar, Indonesia. In particular, data from argumentative essays completed by students in the 2022–2023 fourth semester were used. By identifying and evaluating reasoning components and critical thinking abilities, students in the instructional treatment group outperformed those in the control group. Along with improved coherence and structure, the treatment group also showed improved writing skills.

Statement of the problem

The problem of the present study could be stated as follows:

Despite the importance of EFL argumentative writing and critical thinking skills among second-year students enrolled in the English section at the Faculty of Education, their level in them is low. In addition, the EFL argumentative writing and critical thinking are two interrelated aspects, hence, there is a need to investigate the correlation between them. Thus, the present study aimed to investigate the relationship between EFL argumentative writing and critical thinking skills among second-year students'.

Questions of the study

The present research was an attempt to answer the following question:

1. What is the relationship between EFL argumentative writing and critical thinking skills of second-year English major students at the Faculty of Education?

Hypothesis of the study

In the light of reviewing the literature and related studies, the following hypothesis was formulated:

"There is a positive, statistically significant correlation between the mean scores of the study participants in the post-assessment of the EFL argumentative writing and critical thinking skills ".

Delimitations of the study

The present study was delimited to the following:

1. Forty-five second-year students enrolled in the English section at the Faculty of Education, Benha University during the first semester of the academic year 2023-2024 .

Participants of the study

The participants of the study were randomly drawn from second-year students during the first semester of the 2023-2024 academic year. There was one experimental group consisting of 45 students enrolled in the English section at Benha Faculty of Education.

Instruments of the study

To achieve the purpose of the study, the following instruments were developed and used by the researcher: EFL argumentative writing skills post-test for assessing students' EFL argumentative writing skills, an analytical rubric for scoring it, critical thinking skills post-test for assessing students' critical thinking skills and an analytical rubric for scoring it.

The EFL argumentative writing skills post-test

The EFL argumentative writing skills post-test was developed to measure EFL second-year English major students' argumentative writing skills. The post-test was used to determine and measure the study participant's level in some EFL argumentative writing skills. The test consisted of three parts. Part "I" aimed to measure claim, ground, and rebuttal skills. Part "II" aimed to measure unity, mechanics, organization, and accuracy. Part "III" aimed to measure the ten main skills (claim, grounds, warrant, backing, qualifier, rebuttal, organization, unity, accuracy and mechanics).

Validity of the EFL argumentative writing skills test

To estimate validity, the EFL argumentative writing skills post-test was submitted to 10 jury members in curriculum and EFL instruction. They were asked to state their opinions regarding the clarity of the test's instructions given to the student, appropriateness of the test for students' level, clarity of the test questions and relatedness of each question to the test objectives. The jury members agreed on the appropriateness of the test items to the skills to be measured. Clarity of the test instructions and questions, appropriateness of the tests for students' level and relatedness of each question to the test objectives were reported. Jury members recommended some modifications which were taken into consideration

Reliability of the EFL argumentative writing skills test

For estimating the reliability of the argumentative writing skills test, the researcher used the two following methods:

1. Cronbach's Alpha method:

The Cronbach's alpha coefficient was calculated for the items of the EFL argumentative writing skills test. Its value reached (0.863) which is a high value indicating that the test has a high degree of reliability.

2. Test-retest reliability:

The test was administered to a sample of students, then it was re-administered to the same sample with a two-week interval. The Pearson correlation coefficient was calculated between the students'

scores in the two administrations using the SPSS program (V. 18). The value of the correlation coefficient between the two administrations in each skill as well as in the test as a whole was shown in the following table:

Table 1

Reliability coefficient for the EFL argumentative writing skills test using the test re-administration method (N = 30)

Main-skills	Claim	Grounds	Warrant	Backing	Qualifier	All Over the Test
Correlation	0.823**	0.781**	0.839**	0.781**	0.683**	
Main-skills	Rebuttal	Organization	Unity	Accuracy	Mechanics	0.948**
Correlation	0.894**	0.827**	0.628**	0.834**	0.673**	

It can be concluded from the previous table that the correlation coefficient in each of the skills as well as in the test as a whole is high and statistically significant at a significance level of (0.01) which confirms the reliability of the test.

The rubric for scoring the EFL argumentative writing skills post-test

For analysing and scoring the students' performance in the EFL argumentative writing skills test, the researcher developed an analytical rubric. The rubric consists of ten main argumentative writing skills: claim, grounds, warrant, backing, qualifier, rebuttal, organization, unity, accuracy and mechanics. The ten main skills include 23 sub-skills. The argumentative writing skills test was scored on a four-point Likert scale. Each skill in the rubric was rated from "4" to "1". "4" refers to the highest performance level, while "1" indicates the lowest performance level and made no attempt to write. Students were given "4" marks when they produced accurate writing. Students were given "3" marks when making a few mistakes that did not affect the meaning. Students were given "2" marks when making a lot of mistakes that may affect the meaning, and they were given "1" mark when making frequent mistakes causing significant problems.

The critical thinking skills post-test

The critical thinking skills test was developed to measure EFL second-year English major students' critical thinking skills. The post-test was used to determine and measure the study participant's level in some critical thinking skills. The test consisted of two parts with 22 items that measured some critical thinking skills of second-year English majors at the Benha Faculty of Education. The first part included multiple-choice questions (14 items). The second part included open-ended questions (8 items). Each item measured a specific critical thinking skill.

Validity of the critical thinking skills test

To estimate validity, the critical thinking skills post-test was submitted to 10 jury members in curriculum and EFL instruction. They were asked to state their opinions regarding the clarity of the test's instructions given to the student, the appropriateness of the test for students' level, the clarity of the test questions and the relatedness of each question to the test objectives. The jury members agreed on the appropriateness of the test items to the skills to be measured. Clarity of the test instructions and questions, appropriateness of the tests for students' level and relatedness of each question to the test objectives were reported. Jury members recommended some modifications which were taken into consideration

Reliability of the critical thinking skills test

For estimating the reliability of the critical thinking skills test, the researcher used the two following methods:

1) Cronbach's Alpha method:

The Cronbach's alpha coefficient was calculated for the items of the critical thinking skills test. Its value reached (0.887) which is a high value indicating that the test has a high degree of reliability.

2) Test-retest reliability:

The test was administered to a sample of students, then it was re-administered to the same sample with a two-week interval. The Pearson correlation coefficient was calculated between the students' scores in the two administrations using the SPSS program (V.18). The

value of the correlation coefficient between the two administrations in each skill as well as in the test as a whole was shown in the following table:

Table 2

Reliability coefficient for the critical thinking skills test using the test re-administration method (N = 30)

Main-skills	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	All over the Test
Correlation	0.782**	0.790**	0.819**	0.694**	0.736**	0.863**	0.937**

** . Correlation is significant at the 0.01 level

It can be concluded from the previous table that the correlation coefficient in each of the skills as well as in the test as a whole is high and statistically significant at a significance level of (0.01) which confirms the reliability of the test.

The rubric for scoring the critical thinking skills post-test

For analysing and scoring the students' performance in the critical thinking skills test, the researcher developed an analytical rubric. The rubric consists of eight critical thinking sub-skills which are examining the elements of the intended argument (claims, reasons, conclusions), finding out potential consequences for alternatives, constructing a coherent and relevant argument or counter-argument, suggesting different solutions for problems, inferring the reasoning to support or refute different claims, drawing warranted conclusions, taking rational decisions, and forming well-reasoned judgements. The open-ended questions of the critical thinking skills tests were scored on a four-point Likert scale. Each skill in the rubric was rated from "4" to "1". "4" refers to the highest performance level, while "1" indicates the lowest

performance. Students were given "4" marks when they produced accurate answers. Students were given "3" marks when making a few mistakes that do not affect the meaning. Students were given "2" marks when making a lot of mistakes that may affect the meaning, and they were given "1" mark when making frequent mistakes causing significant problems.

Findings and Discussion

The overall aim of this research study was to investigate the relationship between EFL argumentative writing and critical thinking skills for second-year students, enrolled in the English section at Benha Faculty of Education. To achieve this purpose, EFL argumentative writing and critical thinking skills post-tests were administered to the experimental group to test the following hypothesis:

"There is a positive, statistically significant correlation between the mean scores of the study participants in the post-assessment of EFL argumentative writing and critical thinking skills".

To test this hypothesis, the Pearson correlation coefficient between the scores of the study participants in the critical thinking test and their scores in EFL argumentative writing test was calculated using SPSS program (V. 18). Table (3) summarizes these findings.

Table 3

The correlation coefficient between the participants' mean scores in the post-assessment of the EFL argumentative writing and critical thinking skills tests

Variable	Pearson coefficient	α Sig
- Critical thinking		
- EFL argumentative writing	0.874	0.01

The above table showed that there is a strong, positive, statistically significant direct correlation at the level of significance ($\alpha \leq 0.01$) between the scores of the study participants in the post-assessment of the critical thinking skills test and their scores in the EFL argumentative writing skills test. This means that the higher the students' scores on the critical thinking test, the better their scores on the EFL argumentative writing skills test. Thus, the hypothesis of the present study research was accepted.

Based on the previously mentioned findings, it can be concluded that there is a strong positive relationship between critical thinking and EFL argumentative writing skills. This is indicated through the scores of the study participants in the EFL argumentative writing and critical thinking skills post-tests. It was found that the students who got high scores in the critical thinking skills post-test also got high scores in the EFL argumentative writing skills post-test. This indicated that the more the students used critical thinking skills, the better they could perform on EFL argumentative writing. Consequently, it can be said that critical thinking is a necessity for developing EFL argumentative writing skills.

Nowadays, every student should be a critical thinker. He should not just receive and accept the world around him. However, he should be critical in terms of analysing facts and information, being able to form his own perspective and make judgments, making decisions, and evaluating and assessing arguments. As a 21st-century prerequisite in education and the EFL context in particular, critical thinking should be incorporated into the process of EFL teaching and learning, especially the EFL argumentative writing.

Both argumentative writing and critical thinking complement each other and one cannot be separated from the other. For writing a strong and effective argumentative essay, a student needs to be a critical thinker. Critical thinking can aid students in producing a successful piece of argumentative writing as it can help them to employ more reliable data and evidence, handle counterarguments, defend conclusions, and maintain the consistency of the ideas in their essays.

Thus, it is obvious that critical thinking and EFL argumentative writing are interrelated. This result is consistent with the results of other previous studies such as (Bekele et al., 2022; Cahyadewi & Lolita, 2021;

Muhsin et al., 2024; Sharadgah et al., 2019; Wang & Shen, 2023). These studies explored the relationship between critical thinking and EFL argumentative writing among English major students. The findings of the studies revealed that there is a strong correlation between critical thinking and EFL argumentative writing. The integration of critical thinking skills played an important role in developing the students' argumentative writing performance as well as coherence, organization, and structure. Thus, the majority of the students effectively and successfully used their critical thinking in writing argumentatively.

Recommendations of the study

Based on the findings of the study, the following recommendations are suggested:

1. More attention should be paid to the importance of EFL argumentative writing skills for second-year English major students.
2. Greater emphasis should be placed on critical thinking skills and their importance in second-year English major students' lives.
3. Additional and sufficient time should be given to students to practice EFL argumentative writing and critical thinking skills.
4. Higher concentration should be paid to the significant correlation between argumentative writing and critical thinking skills for the development of EFL students' academic progress.

Suggestions for further research

- Investigating the relationship between EFL argumentative writing and creative thinking skills among faculty of education students.
- Investigating the relationship between EFL persuasive writing and critical thinking skills among faculty of education students.
- Investigating the relationship between EFL creative writing and critical thinking skills among faculty of education students.

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