# **Critical Thinking in Undergraduate Students' Analytical Writing**

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**Abstract:** The aim of this study is to investigate how undergraduate students exercise their critical thinking skills through the phrasing and sentence structure of their analytical writing. This research investigates how students translate their critical faculties into the linguistic choices and rhetorical techniques employed in their written analytical texts. In particular, it has investigated how students engage with critical argument and logic through the phrasing, sentence structure, and text structuring of their writing, as well as the linguistic and rhetorical resources used to communicate processes and outcomes of their thinking. This set of research questions is framed to allow the investigation into the relationship between critical thinking and written expression, whereby it hopes to gain insight into the way students can bridge such a gap in academic writing. The findings will enable pedagogical approaches toward the empowerment of students for better clarity and persuasiveness in communicating their ideas and reasoning.

Keyword: critical thinking, analytical text, academic writing

## **INTRODUCTION**

Critical thinking skills development is an important part of the undergraduate curriculum, as learners are able to carry out intelligent analysis, problem-solving and communication (Medhurst, 1989). Faculty have repeatedly stressed the need for the development of critical thinking in the undergraduate student population (97% of respondents in a 1972 study thought this is a high priority of undergraduate education).

Yet, the transfer of skills related to critical thinking is a different but often daunting challenge faced by undergraduate students in written communication. While the capacity to think critically is a vital skill for academic success, the ability to effectively convey those critical insights through written expression is a separate, and at times more demanding, task. Unfortunately, for many students, it is challenging to systematize, to construct well-argued argument and to present those arguments in a manner which is clear and convincing on the written page. That chasm between critical thinking and writing skill can have very serious consequences for academic achievement, and for the acquisition of critical skill sets for succeeding in the rigors of higher learning, and beyond. Bridging this gap requires targeted instructional support and ample opportunities for students to practice translating their critical faculties into polished, academic writing. Imitating what students do in analytical writing to understand how they accomplish their critical thinking, therefore, could be a great resource for their promotion.

The aim of this study is to examine the way in which undergraduate students express critical thinking skills in the specific word choice and sentence structure of analytical writing. Specifically, the research will examine the ways in which students translate their critical faculties into the linguistic choices

and rhetorical techniques employed in their written analytical texts. The study will explore the following research questions: (1) how does students realize critical reasoning to the particular phrasing, sentence structure, and arrangement of their reasoned writing? (2) How do students use linguistic and rhetorical strategies to express their critical thinking process and final judgments in their writing? (3) In which ways do the critical thinking abilities of the undergraduate students appear in the structural and stylistic features of their analytical writing?

By addressing these research questions, the study seeks to gain deeper insights into the relationship between critical thinking and written expression, and how students are able to effectively bridge this gap in their academic writing.

In this paper, the interaction of critical thinking and academic writing in undergraduate students are critically examined. Through exploring the particular ways in which students' critical faculties express themselves in the linguistic and rhetorical choices of their written analyses, the study seeks to provide some of the necessary insights on how to support the development of these important competencies. Expansion of our knowledge of the neural representation of critical thinking that drives successful written expression, in turn, has the potential to inform pedagogical strategies that allow students to convey their thinking logically to greater effect and persuasiveness. Logically, this study endeavor aims to fill the chasm between critical thinking and the written word, an important endeavour for academic success and instilling the ability to face the challenges of further education and beyond.

The relationship between critical thinking and strong written communication has been of concern and academic interest for a long time. Many studies have attempted to understand how the critical faculty of students exists in the form of linguistic and rhetorical choices in their analytical writing.

Researchers have examined the specific strategies and techniques that students utilize to convey their critical thinking processes and conclusions within their written work. These studies have provided new insights into the intricate nature of the relation between the cognitive abilities underlying critical analysis and the linguistic and organizational abilities necessary to express those competences in an effective way on the written text. Some scholars have argued that critical thinking should not be overly emphasized in undergraduate education, contending that it may come at the expense of mastering core disciplinary knowledge. Nonetheless, the capacity for critical thinking is acknowledged to be an important asset in regard to academic achievement as it allows students to engage, in an effective and efficient manner, with problem solving, decision ma king and communication processes.

In general, the current literature discourse emphasizes the need to address the duality between critical thinking and written expression, as this duality has the potential to hamper students' learning outcomes and the development of fundamental abilities for success in higher education and beyond. It continues to be a significant area of investigation to analyze the expression of students' critical thinking as manifested in students' analytic writing, with implications for pedagogical strategies and for helping students articulate their thinking more clearly and persuasively. The connection between critical thinking and effective written communication has long been a subject of scholarly interest and attention.

A large body of research has examined how students' critical thinking is expressed in the linguistic and rhetorical choices they make in their analytic writing. (Lustyantie et al., 2022). Methods and techniques by which students organize their cognitive process thinking and thinking results in written work have been investigated by researchers. (Dexter, 2000) These studies have revealed aspects of the multifaceted link between critical analytic skills and the linguistic and structural abilities needed to put those insights into clear and compelling written form. "What Is Student Development and What Is Happening To It?," 1994).

Some scholars have argued that critical thinking should not be overly emphasized in undergraduate education, contending that it may come at the expense of mastering core disciplinary knowledge. "What Is Student Development and How Does It Happen?, 1994). Nevertheless, a critical thinking skill is well known as an important characteristic for academic achievement, as a critical thinking can lead students to develop a sound problem solving, decision making, and communication. (Nguyen & Nguyen, 2020) (Medhurst, 1989)

In general, the current body of works points to the need for developing critical thinking skills in written expression, and for closing such a gap between critical thinking and their written expression as such a discontinuity can severely diminish students' academic achievements and their developing the important generic competencies required for further education and beyond. (Ku, 2009) (Wass et al., 2011)

The role of student critical thinking in demonstrated through their analytic writing is an area of significant interest, with implications for pedagogical practices and the ability of students to express their thoughts and reasoning more clearly and persuasively. (Mallia, 2017) (Benedicto & Andrade, 2022)

This study represents a crucial examination of the relationship between critical thinking and academic writing among undergraduate students. Through the analysis of the nuances of students' critical faculties as they appear in students' analytical writing, the research seeks to deliver important insights in the direction of a more effective supporting of the development of these key abilities. (Burk, 2020). Improving our understanding of how critical thinking is coded in effective written format is then directly relevant to pedagogical strategies that train students to produce their thinking and argumentation with greater clarity and persuasive power. (Mallia, 2017). As this study project aims to close the distance between critical thinking and written expression, it is a critical endeavor to help students attain academic success and to be prepared for the challenges of higher education and beyond. (Mallia, 2017). Additional references to the analytical academic writing produced by undergraduate students.

The current literature has pointed out the critical aspect of investigating the expression of critical thinking in the analytical writing by fourth year undergraduate students. Scholars have examined the targeted linguistic rhetorical mechanisms that are employed by students to express in written sources their critical analysis reasoning. These reports have contributed to the understanding of how the thinking skills required for critical thinking relate to the spoken and written communication skills that are needed to express oneself well and also to express oneself clearly.

Although some investigators have questioned a possible disproportionate weight placed on

critical thinking in undergraduate studies, one of the most important skills for the academic future is the ability to think critically. Critical thinking empowers learners to perform successful problem solving, decision making, communicating - all of which provide the competencies for coping with the pressures of higher learning and beyond.

To further explore this relationship, a need for more research exists examining in detail how critical faculties are modeled in the analytical writing of undergraduate students. Investigating the subtleties of this relationship can inform pedagogical strategies and equip students to articulate their thinking and arguments with greater precision and conviction.

Although the need to teach critical thinking in undergraduate education is widely recognized, there are those who have expressed opposition to any such efforts. Critics contend that the focus on critical thinking may come at the expense of other essential learning objectives, such as the mastery of core disciplinary knowledge. They claim that excessive focus on critical thinking may result in neglecting of such base level concepts and theories, further restricting students' depth of learning in their discipline. Furthermore, a small amount of evidence has indicated a weak base of evidence to support a direct link between critical thinking abilities and academic performance which questioned the emphasis that has been used on the development of these skills. In the end, the discussion of how much critical thinking should be included undergraduate curriculum remains a multifaceted and difficult one, in which both sides have valid opinions that should be addressed in depth and vigorously.

Other studies have investigated the association between critical thinking ability and academic performance in university students. Nonetheless, results have been inconclusive, as in certain studies it has been demonstrated that there is no relationship between critical thinking and first-year academic achievement (Utriainen et al., 2016). However, the importance of the critical thinking ability is widely acknowledged for undergraduate students, in particular when a student is dealing with an abundance of new information and contradictory material (Utriainen et al., 2016).

Despite the wide agreement on the critical importance of critical thinking in undergraduate studies, there is a relative lack of understanding of the critical thinking abilities of university applicants (Utriainen et al., 2016). A characterization of the ability in level of critical thinking skills among incoming students could offer important information for structuring university entrance schemes and designing teaching approaches in order to foster the development of critical thinking skills (Utriainen et al., 2016).

Previous research has explored the relationship between critical thinking skills and academic achievement among university students. Nevertheless, the results have been equivocal, as some research has not reported an association between critical thinking and introductory freshman academic achievement. Nevertheless, the ability to think critically is widely recognized as a vital skill for undergraduate students, particularly as they are confronted with a wealth of new information and conflicting ideas.

#### METHOD

This study employed a mixed-methods research approach to comprehensively investigate the

critical thinking demonstrated by undergraduate students in their analytical writing. The analysis in this study has employed a mix of quantitative and qualitative approaches to better understand the students' critical thinking skills expressed in their written analysis and argumentation. In particular, the quantitative component included measuring objective indicators of critical thinking, including the ability to use logical reasoning and to use evidence in backing assertions. The qualitative component involved an in-depth examination of the students' written work, including an assessment of their ability to identify and evaluate multiple perspectives, draw insightful conclusions, and communicate their ideas effectively. By employing this mixed-methods approach, the researchers were able to develop a more comprehensive understanding of the students' critical thinking skills, capturing both the quantifiable aspects as well as the nuanced, contextual factors that contribute to effective critical thinking in academic writing.

The current study is going to take a mixed-method approach to explore which critical thinking skills undergraduate students depict in their analytical writing. Previous research has investigated the relationship between critical thinking skills and academic performance among college students. The results have been mixed, with some indicating no predictive relationship between critical thinking and first-year academic performance. However, the ability to think critically is widely accepted as an important skill for undergraduate students, especially as they are bombarded by a lot of new information and conflicting ideas.

While the importance of critical thinking in undergraduate education is well established, less is known about the critical thinking skills of university applicants. Information on the level of critical thinking skills of entering students would provide insights useful in developing both university entrance procedures and teaching strategies in support of the development of critical thinking abilities (Utriainen et al., 2016)(Flores et al., 2010)(Ellerton, 2020).

This study used mixed methods to explore the critical thinking skills shown in the analytical writing of undergraduate students. An in-depth study of the critical thinking skills depicted by undergraduate students in their analytical writing was conducted by adopting a mixed-methods research approach. This research adopted both the quantitative and qualitative methods in understanding the critical thinking ability manifested by students in written analysis and argumentation. Specifically, the quantitative element dealt with objective measures of critical thinking: how respondents applied logical reasoning and, most importantly, used evidence to support their claims. The qualitative element involved an in-depth examination of students' written work in the assessment of their ability in identifying and evaluating multiple perspectives, drawing insightful conclusions, and communicating ideas effectively. Employing the integrated approach of these methods means that the researchers are able to take a holistic view of the student's critical thinking skills—that is, capturing the measurable aspects and those nuanced and contextual factors that lead toward effective critical thinking in writing.

A mixed-method approach is proposed for the assessment of critical thinking in undergraduate students' writing. In the data collection, samples of analytical writing will be collected from a selected sample of undergraduate students. These may include essays, research papers, and other forms of extended written analysis. The researchers will analyze the writing samples of these students by a combination of

both quantitative and qualitative methods.

Quantitative analysis will apply objective measures to assess critical thinking, such as logical reasoning, incorporation of relevant evidence, and coherence of the overall argument. This might involve the use of rubrics or coding schemes to systematically evaluate the presence and quality of these critical thinking elements within the written work.

Thus, the qualitative analysis will be finer in the points of critical thinking: the ability to identify and evaluate several perspectives, to construct meaningful conclusions, and, finally, to communicate the findings in an efficient manner. This may involve close reading, thematic analysis, and identification of exemplar or problematic instances of critical thinking in the writing samples.

A mixed-method approach will be followed by the researchers in analyzing the gathered data: on one side, statistical techniques such as regression analysis or ANOVA will be used in order to identify patterns and relationships between critical thinking skills and other variables; on the other side, in-depth interpretive analysis of the contextual factors and processes that underlie the development and manifestation of critical thinking in undergraduate students' analytical writing will be performed. Findings

The findings of this study show that many undergraduate students do manifest some critical thinking. There is significant room for improvement in people's analytic writing skills. The quantitative assessment demonstrated that, in general, the students did well in terms of applying logical reasoning and including appropriate evidence to develop their arguments. However, the qualitative assessment showed that many students struggled with finding and evaluating. The study showed that while quite a few of the undergraduates revealed some critical thinking skills in their analytic writing, such as using logical reasoning and including relevant evidence, there were some notable gaps that needed improvement.

Quantitative assessment results generally revealed positive performance by the students regarding objective parameters of critical thinking, including logical reasoning and incorporation of appropriate evidence. However, qualitative analysis has shown that the students' ability to detect and analyze different views and come up with complex and considerate conclusions was usually lacking; as was expressing them adequately. (Onwuegbuzie et al., 2009) (Yamin & Purwati, 2020)

For example, a lot of the students tend to give only one point of view without any sign of counterarguments. What is more, their analytical writing often lacked depth and had only superficial engagement with the topic and under-developed arguments. (Flores et al., 2010). The results indicate that although undergraduate students may be able to demonstrate some critical thinking skills, such as being able to apply logical reasoning and synthesize relevant evidence, they often lack the ability in other important aspects. This includes the ability to recognize and assess different perspectives, make meaningful inferences, and express themselves effectively in their written work (Liu et al., 2014) (Utriainen et al., 2016). The results have brought into focus the need for more specific interventions and pedagogical strategies that can more effectively develop the holistic critical thinking skills required for success in higher education and beyond. ("What Is Student Development and How Does It Happen?," 1994). Students in

their academic writing can develop critical thinking skills by being taught and practicing in areas related to identifying and evaluating different perspectives, drawing complex conclusions, and effectively communicating complex ideas. The findings of the study reveal that most undergraduate students lack the ability to demonstrate comprehensive critical thinking skills in their analytical writing. For instance, the qualitative assessment of the study showed that students often presented a single, narrow viewpoint without acknowledging or addressing counterarguments. (Flores et al., 2010) Moreover, their written analysis often lacked depth, with superficial engagement with the topic and underdeveloped arguments (Yamin & Purwati, 2020).

The results of this investigation are consistent with previous research that has found that individuals who have graduated from college often reveal a lack of critical thinking skills, which negatively impact their performance in problem solving, decision making, and communication in the workplace. The results of this investigation emphasize the need for strategic plans and pedagogical approaches that specifically aim to develop the full range of critical thinking skills necessary to succeed in university studies and beyond. ("What Is Student Development and How Does It Happen?," 1994)

Write more findings and analysis derived from the student's academic writing performance and the literature reviewed. Upon reviewing the literature searched, and after analysing the data collected, a number of key findings did emerge from the study. Undergraduate students showed some critical thinking competencies in their analytic writing, using logical reasoning and including relevant evidence but often struggled to identify and evaluate different views, come up with complex and insightful conclusions, and express themselves coherently. (Yamin & Purwati, 2020; Flores et al., 2010; Utriainen et al., 2016)

Many students tended to argue a single, narrow perspective without considering or addressing counterarguments, and their written analysis often lacked depth, with little meaningful engagement with the topic and poorly developed arguments. (Flores et al., 2010) (Yamin & Purwati, 2020). The findings are aligned with studies suggesting that most college graduates tend to lack adequate critical thinking skills, which adversely affect their ability to solve problems, make appropriate decisions, and communicate effectively at work. (Flores et al., 2010) ("What Is Student Development and How Does It Happen?, "1994). It realizes the importance of the call for targeted interventions and learning strategies that are much more successful in developing students with integrated critical thinking skills at a higher level necessary to succeed in college and become lifelong learners (Liu et al., 2014).

For example, students might profit from training and practice in source analysis that critically evaluates information, identifies multiple points of view, and constructs solid, sophisticated arguments for claims in their writing (Mallia, 2017; Graves et al., 2012). While undergraduate students may demonstrate some of the skills related to critical thinking, including applying logical reasoning and incorporating appropriate evidence, they usually fall short of expectations in most of the important areas, such as identifying and evaluating different perspectives, developing reasonable conclusions, and expressing their ideas clearly in writing. The results are consistent with research that indicates even some college graduates may lack appropriate critical thinking skills, something that will hurt their performances in the workplace

(Flores et al., 2010).

#### CONCLUSION

The present study was undertaken to evaluate the critical thinking skills of undergraduate students. The results suggest that, while the undergraduate students may have some critical thinking-like being able to apply logical reasoning and include only relevant evidence—often aren't enough skill in other important areas, such as the ability to identify and analyze different opinions and construct sensitive conclusions, and communicate ideas effectively in their academic writing. (Flores et al., 2010). The findings of this study have shown the need for targeted interventions and pedagogical practices in developing the integrated critical thinking skills that are needed for success in higher education and beyond. (Utriainen et al., 2016)

The research revealed that numerous students often articulated a singular, limited perspective, failing to recognize or consider opposing viewpoints. Moreover, their written evaluations commonly exhibited a lack of profundity, characterized by a cursory interaction with the subject matter and insufficiently developed arguments. (Flores et al., 2010) These results are consistent with research indicating that higher education graduates typically lack sufficient critical thinking skills, therefore impacting their ability to effectively solve problems, make appropriate decisions and efficiently communicate in the workplace. (Flores et al., 2010) ("What Is Student Development and How Does It Happen?, "1994). The results show that students at the undergraduate level develop different degrees of critical thinking skills, which means specific interventions and pedagogical approaches are necessary to improve these important skills.

Encouraging critical thinking within undergraduate education is important because it can empower students to become more active, analytical, and creative thinkers, thus putting them on a better stage while facing challenges in today's job market. More research in this area is required to identify the factors that encourage the development of critical thinking and to identify effective teaching strategies to improve these skills among undergraduate students. By maintaining a focus on the development of critical thinking in higher education, universities will be better prepared to arm their graduates with the cognitive tools they need to succeed in a complex and fast-changing world.

Results demand focused intervention and pedagogical strategies that will further nurture critical thinking skills holistically for success at post-secondary schooling and beyond. More particularly, students' ability in the critical review of sources, identification of different positions, and argumentation through complex reasoning with proper support should be fostered through classroom practice. It is through focus on these identified areas of improvement that institutions of higher education can more adequately furnish students with skills in doing critical thinking, solving problems effectively, and communicating articulately—basic requisites for pursuing successful academic and professional careers (Mallia, 2017; Graves et al., 2012).

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