JOTTER: Journal of Teacher Training and Educational Research
e-ISSN 3025-4817
Vol. 2, No. 3, 2025, pp. 99 - 110

Critical Thinking in Pre-Service English Teachers: Evaluating and Promoting Analytical Skills through Academic Writing

Claudia Rodríguez-Escobar[1]*, Carmen Kanelos-Saldías[2]
[1]Universidad Bernardo O'Higgins, Santiago, Chile
[2]Universidad Católica del Maule, Talca, Chile
*Corresponding Author: claudia.rodriguez.escobar@gmail.com

ARTICLE INFORMATION
***Article History*:**
Received 2025-02-05
Revised 2025-03-20
Accepted 2025-04-30

Keywords:
Academic Writing, Critical Thinking Skills, Pre-service English Teachers, Teacher Education.

DOI:
10.71280/jotter.v2i3.440

A B S T R A C T

Critical thinking is acknowledged to be essential for the educators of the 21st century. Consistent with this, this research project aimed to evaluate the critical thinking abilities of third-year students of the English Teacher Training Programme at a Chilean university, who completed their initial two years of academic instruction exclusively online due to the COVID-19 pandemic. During the diagnosis stage, these pre-service teachers were asked to write a short essay about a topic covered in class. This phase showed participants' lack of comprehension of the topics as their essays tended to address the issues superficially and present weak arguments, and pre-test results confirmed this. Therefore, four pedagogical interventions were designed and implemented throughout the term, using academic writing as a tool to develop critical thinking abilities. These interventions consisted of continuous feedback on the participants' writings, an academic writing course, attendance at a webinar on critical thinking and English language teaching, and group reflection sessions. The results of the post-test showed significant improvement in both content organisation and the quality of the arguments presented in the essays. The participants demonstrated a more critical and analytical approach to addressing the topics of their writings, demonstrating a significant progress in their analytical reasoning skills. This research highlights the importance of addressing and strengthening critical thinking skills in pre-service teachers, especially after being immersed in a virtual education context. The pedagogical interventions implemented proved to be effective in improving participants' critical reasoning, representing a valuable contribution to their future teaching practice.

INTRODUCTION

The Covid-19 pandemic brought a number of challenges for our society, affecting all kinds of professional contexts. In particular, in the field of education, the lack of opportunities for collaboration and reflection among peers due to confinement was the prelude to a situation that would gradually generate a gap in the development of students' critical thinking skills (CTS). The lack of face-to-face interactions within a classroom caused students to be isolated both from their peers and from the content of the courses themselves. Consequently, teachers had to adapt their classes and didactic material, focusing more on the delivery of content than on giving students opportunities for reflection (Paudel, 2021; Lv et al., 2022; Topping, 2023), thus affecting the development of analytical skills in academic and social contexts (Bozkurt et al., 2020; Freitas et al., 2020; Lv et al., 2022; Clary et al., 2022).

Critical thinking (CT) is well known in the educational field as contemporary authors, academics, and researchers emphasise how important it is to prepare teachers and students to deal with the complexities of today's society. As defined by Halpern (2014), CT involves focused, reasoned, and goal-oriented thinking with the purpose of solving problems, making decisions, or evaluating the evidence and arguments one is presented with. In the case of educators, these skills are paramount for their professional growth and development; moreover, they are going to use them in their teaching practice and also foster them in their students, allowing them to engage in the challenges of the 21st century (Saleh, 2019).

Teacher education is one area where CTS should be developed given the diverse and dynamic nature of classroom environments. In this respect, Nejmaoui (2019a, 2019b) argues that pre-service teachers are to acquire appropriate analytical and reflective skills in order to adapt their teaching practice to different learning needs and styles, be able to assess their own methodologies, and also encourage the development of CT in their students. However, the pandemic accentuated the existing gaps in this area as teacher education programmes had to shift to online instruction, which reduced the opportunities for both collaborative learning and critical discussions. The limited chances student teachers had to interact with their peers and teachers or mentors in the virtual settings that lessons were being held hindered the development of deep, analytical reasoning and reflective practices, which are essential components of CTS.

Having said that, integrating CT into nowadays' teacher training curriculum becomes vital considering the challenges posed by a constant influx of information —especially from social media— and the rise of misinformation and fake news. Teachers must adapt to technological developments as well as foster digital literacy among their learners, promoting a critical viewpoint regarding media consumption and preparing them with the necessary skills to critically analyse and evaluate sources of information. Teachers also need to be prepared to manage all kinds of teaching contexts where they will need skills such as problem-solving, flexibility, and adaptation (Mete, 2020b; Nuroh et al., 2020) in order to successfully lead a classroom.

In light of these challenges, this study examines how academic writing (AW) can contribute to the development of CTS in future teachers as it requires a structured, analytical, and evidence-based approach in order to build and present arguments. As a pedagogical tool, this characteristic makes it an effective resource for the development of reflective and critical reasoning skills, as it gives the writer the space to explore and expand on the topic being tackled.

Thus, with AW as the primary instrument to collect data, this study has two main objectives: First, to diagnose the state of CTS among third-year pre-service teachers who experienced the initial two years of their programme exclusively online; and second, to design and implement pedagogical interventions to enhance these skills through structured academic writing activities to bridge the gap exacerbated by the virtual academic environment due to the pandemic. Ultimately, this research project aims to contribute to the wider field of teacher education by presenting insights into possible strategies to integrate CTS into the curriculum in order to prepare future educators to face the complexities of contemporary classrooms.

Critical thinking and teacher education

Considered a fundamental skill for the 21st century, critical thinking (CT) can be understood as the ability to analyse, evaluate, and synthesise information in order to make logical judgements. It involves a process in which one skilfully conceptualises, applies, and evaluates information based on careful observation, experience, reflection, reasoning, or communication (Facione, 2011; Paul & Elder, 2012;). CT is crucial for academic performance as well as for personal and professional development in the educational field as it helps pre-service and in-service teachers to negotiate

complicated issues and make judgments based on careful analysis in various aspects of their practice. Thus, the development of CT is an essential component of teacher education since it equips aspiring educators with the knowledge and abilities needed to create a reflective and analytical learning environment (Brookfield, 2012; Paul 2012; Mpofu & Maphalala, 2017). In this respect, teachers who understand the value of implementing class activities that promote CTS development will empower and inspire their students to challenge assumptions and consider alternative points of view, thus promoting meaningful learning (Facione, 2011; Saleh, 2019; Mete, 2020a, 2020b). This component is essential for equipping students to handle the demands of the modern world, where acquiring knowledge alone is not enough.

Bloom's taxonomy (1956) has been used in teacher training worldwide given its robust framework for classifying educational goals, which helps educators design curriculum, assessments, and instructional strategies that promote higher-order thinking. This taxonomy provides a systematic approach for teachers to scaffold learning experiences that progressively build students' cognitive abilities from basic knowledge recall to complex evaluative and creative tasks. One of the primary reasons for Bloom's taxonomy's widespread adoption in teacher education is its versatility and adaptability to various educational contexts and subjects. It categorises learning into six levels: knowledge, comprehension, application, analysis, evaluation, and creation. Thus, this framework allows teachers to design clear, measurable learning objectives that correspond to varying levels of cognitive complexity. This organisation allows learners to acquire factual knowledge and develop the ability to understand, apply, examine, synthesise, and assess information. For instance, in an English as a foreign language (EFL) setting, Bloom's taxonomy can guide teachers in the creation of activities that move from the basic comprehension of a written text to a more complex analysis of its topics and structure. This taxonomy can also be effective in the creation of differentiated instruction strategies according to the students' proficiency level to meet their diverse learning needs. Thus, all learners benefit, as those needing additional support can reinforce foundational skills, while others are encouraged to engage in higher-order thinking tasks (Rahman & Manaf, 2017; Mpofu & Maphalala 2017). At an assessment level, Bloom's taxonomy also works with both formative and summative assessments as it helps evaluate the understanding and retention of information as well as its application, analysis, and synthesis, as promoted in the higher levels of the taxonomy. This inclusive assessment approach can give a more accurate representation of students' understanding and CTS, allowing additional instructional planning and intervention if needed (Facione, 2011; Tabrizi & Rideout, 2017).

The taxonomy classifies cognitive skills into six hierarchical levels: (1) Knowledge (which is the recall of facts, terms, basic concepts, and answers, and recognising or remembering what has been learned), (2) Comprehension (which implies understanding the meaning, translation, and interpretation of instructions and problems, and grasping the meaning of information), (3) Application (which is the ability to use learned material in new and concrete situations, and applying rules, methods, concepts, principles, laws, and theories), (4) Analysis (where one is able to break down information into its component parts, understanding its structure, and recognising organisational principles), (5) Synthesis (related to the ability to combine and put parts together to form a new whole or pattern), and finally (6) Evaluation (which implies having the ability to judge by assessing, comparing, and contrasting ideas, and making choices based on analytical argument). Each level in Bloom's Taxonomy represents a step in the cognitive process that helps learners move from basic recall to higher-order thinking, fostering deeper understanding and critical analysis. Therefore, educators can promote a progression of cognitive skills by designing learning activities and assessment instruments around this hierarchy. Bloom's Taxonomy and CTS are closely related and

go hand in hand as both work with the development of advanced cognitive abilities essential for deep, meaningful learning and effective problem-solving.

Academic writing and critical thinking

Academic writing (AW) is distinct from creative, personal, or job-related writing due to its formal nature, where completeness and organisation are paramount. It involves both knowledge attainment and transformation, and it demands that writers adhere to a formal style and structure, fulfilling specific academic requirements (Hinkel, 2020).

The purpose of AW, which is a crucial and often compulsory component of tertiary education, can differ according on its aim. Thus, it could be a report on research findings, a discussion on a certain issue, or an essay-style response to a question considering many angles. In the field of English Language Teaching (ELT), academic writing involves awareness of certain language features such as the use of precise terminology and complex grammatical structures. Thus, English language learners often find academic writing in English distinct and more challenging than writing in their native language mainly due to the differences in lexicon, grammar, and content organisation (Brown & Abeywickrama, 2019). In ELT training, academic writing plays an important role as universities frequently expect their students to show both language proficiency and a high level of critical reasoning. This makes it a crucial skill that implies having a logical, well-structured approach to presenting arguments, analysing information, and developing coherent ideas effectively (Bezanilla et al., 2019; Bean & Melzer, 2021).

The two most frequent forms of AW in higher education settings are expository and argumentative writing. The first has the purpose of explaining or informing the reader about a particular topic. The writer presents facts, data, and explanation in such a lucid and logical manner so that the reader fully understands the subject, without necessarily being influenced by a particular viewpoint. In argumentative writing, on the other hand, the writer takes a clear stance and presents convincing arguments that are supported by reliable sources and critical analysis with the intention of persuading the reader of the validity of their viewpoint, reason why this is a popular style for essays and papers (Bitchener et al., 2017; Giltrow et al., 2021). In other words, CTS development and AW are closely related since both encompass the ability to analyse, evaluate, and synthesise information. When students are involved in the process of academic writing, they must effectively convey their ideas and construct solid arguments that are backed up with critically analysed sources, identify possible biases and discriminate between legitimate and untrustworthy information. This process of evaluation encourages students to question assumptions, consider multiple standpoints, and develop strong arguments. Moreover, the nature of the writing process—drafting, receiving feedback, and rewriting—encourages reflective thinking and continuous improvement, which are essential for enhancing critical thinking skills (Cottrell, 2011).

RESEARCH METHODS

This action research sought to improve the learning process of aspiring teachers as they navigate the dynamic landscape of contemporary education. The researchers examined, analysed, and assessed the development of critical thinking skills (CTS) among pre-service EFL teachers, using academic writing—specifically, short essays written in English—as the primary assessment tool and data collection instrument. The design and implementation of targeted pedagogical interventions were also applied as secondary sources for data collection. Thus, the research questions that guided this project were:

1. What is the initial level of critical thinking skills in third-year students of the English Teacher Training programme, as demonstrated by their short essay writing before receiving targeted pedagogical interventions?

2. What impact do the targeted pedagogical interventions have on the development of participants' critical thinking skills?

3. What improvements, if any, are observed in participants' short essay writing following the pedagogical interventions?

The research enlisted the voluntary participation of 37 third-year students enrolled in the English Teacher Training programme at a Chilean university who were concurrently undertaking a course in communicative competences in English. As per their level of language proficiency, the group had a B1 level according to the Common European Framework of Reference for Languages (CEFR) at the moment of their participation. It is worth noting that the COVID-19 pandemic forced these pre-service teachers to complete the first two years of their academic preparation entirely online. As a result, they had few opportunities to engage in reflection and feedback instances, both in groups or with the teachers in charge of the courses. Thus, the teaching and learning context due to the pandemic added an additional challenge in relation to the development of their CTS and evidenced the importance of focusing on this issue in today's education.

A mixed-method approach was chosen since it includes quantitative and qualitative components, allowing for a more comprehensive and fuller understanding of the examined phenomenon. The quantitative phase included statistical analysis of the essays, which allowed for quantification and comparison of gains in participants' analytical reasoning abilities between pre- and post-tests. The qualitative phase included a thorough examination of the essays, as well as teacher feedback and peer reflection throughout the interventions. This allowed the researchers to recognise possible patterns and more subjective perceptions of the CT development process. Thus, the mixed-method methodology ensured a detailed and rigorous approach, enhancing data validity and reliability while also providing deeper insights into the development of CTS in aspiring EFL teachers.

In order to assess participants' critical reasoning abilities, short essays were used as the primary data collection instrument and were evaluated using a course-specific rubric that assessed both linguistic aspects and CTS considering levels four and five in Bloom's taxonomy (i.e., analysis and evaluation). Considering productive skills, this approach was considered appropriate since essay writing allows students more time to analyse their ideas compared to speaking, for example, giving an ideal means for them to present their thoughts and arguments in a systematic and critical manner. The essays addressed significant issues related to the course "Communicative Competences in English: Academic and Cultural Approaches," such as religion throughout history, social movements across time, and the role of women in current society, among others. Participants were requested to write essays before and after the pedagogical interventions (pre-test and post-test), which offered useful data for assessing individual and group progress in the development of CTS. The research comprised four phases:

a) Phase 0 - Diagnosis: At the end of the first term of 2022, and before taking an academic writing course, a diagnosis was applied to determine the participants' level of CTS. They were asked to choose one out of three questions and respond in the form of a short essay (500-600 words approximately within 90 minutes). The questions were: (1) How has religion influenced historical events and/or changes in our society? (2) In your opinion, why was the Civil Rights Movement in the United States successful? (3) How does social media influence public opinion? The topics of these questions had been previously discussed during lessons, so participants were to some extent familiarised with them. This diagnosis provided key information for addressing the issue and the viability of the research, and designing the subsequent pedagogical interventions.

b) Phase 1 - Pre-test: At the beginning of the second term, and without knowing their results of the diagnosis in order to avoid a biased performance, the 37 participants were asked to write a short essay (again, 500-600 words approximately, within 90 minutes) on a topic previously covered in the course. Thus, they were given three questions relating to an academic and/or cultural part of the curriculum and requested to present and expand their arguments on one of them. These questions were (1) How have views toward religious diversity changed over time? (2) How has social media influenced contemporary social movements and activism? and (3) What are the social, political, and economic consequences of current migratory trends? The findings of this pre-test served as a benchmark for evaluating subsequent development.

c) Phase 2 - Pedagogical Interventions: Throughout the second term, four interventions were implemented: (1) Feedback: student teachers received feedback from the essays they wrote in the pre-test phase, and in-class writing activities with ongoing feedback were carried out to provide more opportunities for reflection and analysis; (2) Academic writing: participants enrolled in an academic writing course in English where they were instructed in the essential techniques and conventions of scholarly communication and the effective presentation of arguments for different purposes; (3) Webinar attendance: Eight weeks after data collection began, in the midst of the second term, participants attended a webinar titled "Critical Thinking and EFL Teaching" which was designed and conducted by one of the researchers in order to provide insights into the integration of CTS into EFL pedagogy, focusing primarily on Bloom's taxonomy and its cognitive domain. (4) Peer reflection: During the last intervention, participants analysed and discussed their own written work in class. These workshops combined Bloom's Taxonomy and participants' personal viewpoints on the themes. This collaborative process enabled them to critically assess their own and their classmates' writing, exchange feedback, and gain vital insights for future improvements.

d) Phase 3 - Post-test: Near the end of the second term, participants were asked to write a second short essay on a topic addressed during that time. As in the pre-test phase, they were given 90 minutes to compose a 500-600-word response on one of three class subjects. This time, the topics included: (1) How has religion shaped gender roles and expectations in different historical contexts? (2) How have artists contributed to the success of social movements? and (3) How is automation and artificial intelligence affecting job markets and social mobility? This post-test allowed the researchers to assess the impact of the pedagogical intervention on the development of participants' logical, analytical reasoning abilities.

The diagram in Figure 1 illustrates the chronological progression of the four stages experienced during the research process:

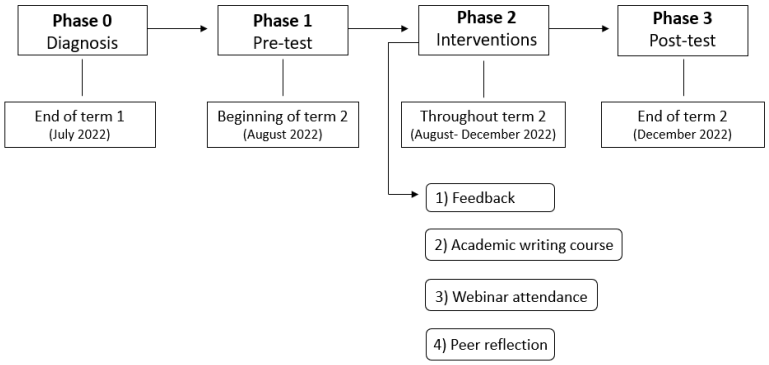


Figure 1. Phases and timeline of data collection during the action research process.

RESULTS AND DISCUSSION

The results of this study are based on the application of an academic writing assessment rubric used in the Communicative Competences course. Aligned with the cognitive levels of Bloom's Taxonomy, this rubric evaluates five key criteria, with scores ranging from a maximum of 5 points (outstanding) to a minimum of 1 point (poor or absent) for each criterion. Thus, the rubric evaluates five dimensions:

1) **Arguments, reasoning, and critical analysis**: ideas/arguments are enough to support the writing, are based on the video/content and student's critical analysis.
2) **Content organisation and format:** All paragraphs have clear, well developed and relevant information, supported appropriately. Ideas are not repeated.
3) **Use of language, grammar, and mechanics:** Grammar, syntax, use of complex structures are the expected for the level.
4) **Lexicon:** Vocabulary used is the expected for the level according to contents covered**.**
5) **Spelling and punctuation:** Appropriate use of punctuation, no spelling mistakes evidenced.

Ranging from 1 to 5 points, the assessment rubric contemplates these scores: 1 point (poor or absent), 2 points (revision is needed), 3 points (acceptable), 4 points (strong), and 5 points (outstanding). Therefore, the total score for the rubric is 25 points.

The initial assessment (Phase 0 – Diagnosis) revealed significant challenges in the participants' ability to engage with the topics of the course and fully comprehend the course material. This was revealed in their superficial approaches to the themes, as well as their limited vocabulary usage—often misusing or confusing terminology— which was a barrier in their capacity to clearly expose their ideas and arguments, making their work difficult to read and understand. Furthermore, many of the arguments were superficial, lacking a strong analysis of the information or facts presented which weakened the overall strength and impact of their essays. The pre-test results confirmed these issues, emphasising the group's need to get involved in instructional strategies to improve their CT and writing abilities. Table 1 displays the pre-test results in percentages based on the total number of participants.

Table 1. Pre-test results: Percentage of Participants (n=37) per Score Category

Criterion	5 pts Outstanding	4 pts Strong	3 pts Acceptable	2 pts Needs revision	1 pt Poor/ Absent
Arguments, reasoning, and critical analysis	8.1%	18.9%	51.4%	21.6%	0.0%
Content organisation and format	21.6%	16.2%	43.2%	18.9%	0.0%
Use of language, grammar, and mechanics	24.3%	16.2%	51.4%	8.1%	0.0%
Lexicon	29.7%	21.6%	40.5%	8.1%	0.0%
Spelling and punctuation	59.5%	18.9%	18.9%	2.7%	0.0%

The first criterion (Arguments, Reasoning, and Critical Analysis) demonstrates considerable deficits in participants' ability to formulate and deliver convincing arguments, as well as conduct critical analysis, with just 51.4% scoring 3 points, indicating an acceptable performance. In most cases, participants' essays lacked the expected depth when presenting their viewpoints, failing to connect

ideas in a coherent and cohesive manner, and providing little evidence to support their arguments, implying that they had not yet reached higher levels of cognitive processing as outlined in Bloom's Taxonomy. Notably, only 8.1% of participants scored 5 points, showing an outstanding performance, which highlighted an urgent need for interventions to enhance CTS.

In relation to the second criterion (Content Organisation and Format) we can observe that there are considerable weaknesses as 43.2% of the participants scored 3 points, considered adequate, and only 21.6% of them scored 5 points. This is consistent with the fact that many essays evidenced a weak performance in terms of coherence, with ideas that were oftentimes repeated or presented in a fragmented way, lacking a logical flow which made the progression of thoughts difficult to understand. These issues suggest that pre-service teachers struggled when trying to structure their writings in an effective, clear way.

The third category (Use of Language, Grammar, and Mechanics) demonstrated significant room for improvement, with 51.4% of aspiring teachers scoring 3 points. This shows an acceptable level of proficiency in grammar and mechanics for at least half of the participants; however, many essays contained minor grammatical errors and simple sentence structure, where the present simple tense was overly used and not justified for the context of the questions being answered.

In the use of lexicon, pre-test results reveal a considerable limitation in the use of varied and specific vocabulary as only 29.7% achieved the outstanding level, with 5 points. Almost half of the participants performed acceptable, as 40.5% of them obtained 3 points, which shows a limited variety in lexicon use making the essays lack clarity. The repetitive use of certain words and imprecise word choices in the construction of their arguments impeded the development of complex ideas, thus weakening the overall impact of the essays.

The strongest area in the pre-test was that of Spelling and Punctuation, with 59.5% of participants achieving an outstanding performance. Nonetheless, minor errors were detected in the rest of the group, as evidenced in the strong (4 points) and acceptable (3 points) categories, with 18.9% in each one.

These initial findings served as a baseline for comparison with the post-test results, which were obtained following the four pedagogical interventions and are shown in the Table 2.

Table 2. Post-test results: Percentage of Participants (n=37) per Score Category

Criterion	5 pts Outstanding	4 pts Strong	3 pts Acceptable	2 pts Needs revision	1 pt Poor/ Absent
Arguments, reasoning, and critical analysis	24.3%	67.6%	8.1%	0.0%	0.0%
Content organisation and format	40.5%	48.6%	8.1%	2.7%	0.0%
Use of language, grammar, and mechanics	43.2%	40.5%	10.8%	5.4%	0.0%
Lexicon	56.8%	32.4%	10.8%	0.0%	0.0%
Spelling and punctuation	75.5%	24.3%	0.0%	0.0%	0.0%

From the post-test results, it can be observed that there is a significant improvement in the first criterion (Arguments, Reasoning, and Critical Analysis) where 24.3% of the participants had an excellent performance while 67.6% had a good one. This change in the participants' outcome reveals that pedagogical interventions were effective in improving student teachers' CTS as well as their learning achievement.

The vast majority of essays showed a significant improvement in the presentation of arguments, which this time were well-supported with strong and appropriate evidence. Participants showed a much deeper engagement with course material and activities, connecting ideas and critically evaluating evidence and sources of information, adopting a structured and logical approach to writing. The progress observed confirms the transformative potential of instructional strategies and interventions tailored at their needs, potentially improving their critical thinking abilities. This development aligns with Bloom's Taxonomy, particularly in the transition from lower-order cognitive skills (such as remembering and understanding) to higher-order thinking (including analysing, evaluating, and creating).

In content organisation and format, the post-test revealed a clear improvement as 40.5% of participants achieved an outstanding level (5 points) and 48.6% a strong one (4 points). These percentages show the effectiveness of the academic writing course that pre-service teachers took during the intervention process as they were formally instructed in the conventional aspects of academic writing. Additionally, the feedback sessions provided student teachers with an opportunity to get personalised guidance, which helped them develop their ability to organise thoughts and develop cohesive arguments. The significant reduction in lower scores also indicates that participants internalised and applied strategies to organise their overall writing, presenting their work more clearly to the reader, thus meeting the expected academic standard.

In the third assessed criteria (Use of language, Grammar, and Mechanics), results obtained from the post-test demonstrate a significant positive change, with 43.2% of the participants scoring 5 points and 40.5% scoring 4 points, which translates into outstanding and strong respectively. Similar to the evidence from the results obtained in the organisation and format criteria, these results evidence the success of the academic writing course, and how beneficial it was for participants. Results from this criterion show an appropriate use of complex sentence structures as well as a more sophisticated use of connectors to link ideas between paragraphs, thus evidencing an improvement in grammatical accuracy. This improved the overall quality of the participants' writings and contributed to the reduction of common language errors such as collocations and prepositions commonly used in academic writing.

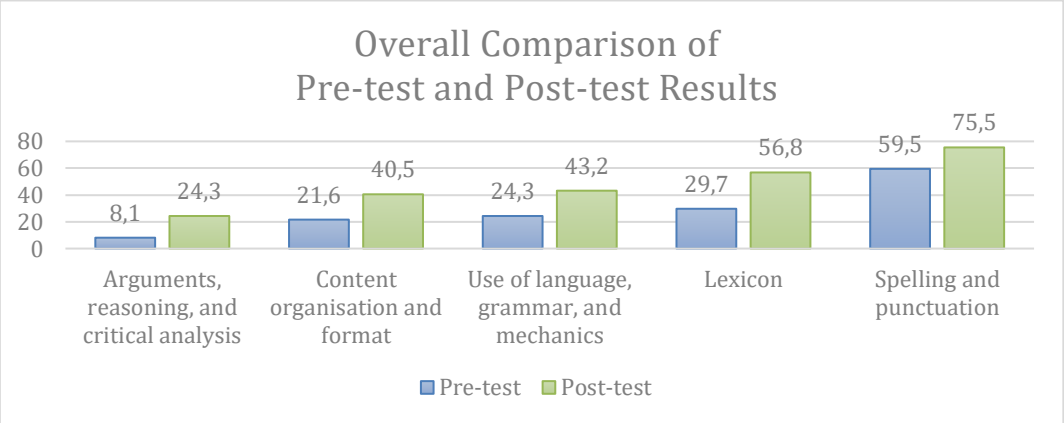
The lexicon used in the post-test also showed improvement. In this area, 56.8% of participants reached an outstanding level (5 points) and 32.4% a strong one (4 points), showing more varied and precise vocabulary when presenting their ideas and arguments. During the course of the semester, pre-service teachers were exposed to specific terminology associated with the topics covered in class. This constant exposure encouraged them to explore synonyms and complex expressions such as idioms and fixed expressions to improve the clarity of their writings. The absence of low post-test scores indicates that participants had a stronger knowledge of the academic lexicon, demonstrating the relevance of targeted vocabulary instruction in strengthening students' academic writing skills.

The post-test findings indicate significant progress in the Spelling and Punctuation criterion, with 75.7% of individuals doing exceptionally well and the rest scoring strongly. The number of low scores indicates that the feedback received both in class and during the interventions helped the participants to improve this aspect of writing. These results also indicate that pre-service teachers developed greater attention to detail, which contributed to the overall proficiency of their essays.

On the whole, the global progress visible in the post-test results indicates that the pedagogical interventions had a deep impact on both the pre-service teachers' academic writing and critical thinking abilities. Participants improved in technical aspects of writing, such as grammar and organisation, and also became better analytical thinkers, leading them to make more robust arguments based on critical analysis and evaluation.

A summary of the pre-test and post-test results analysis is given in Figure 2, showing the comparison of participants who scored 5 points in both assessments. The difference between the two groups demonstrates the overall effect of the targeted pedagogical interventions that were put in place during term two, and which contributed to the development of the participants' critical reasoning and academic writing competences, compared to the initial performance before the interventions.

Figure 2. Overall results (Pre-test and Post-test)



Fostering CT in teacher education programmes is imperative for preparing educators who can inspire and guide their students towards becoming independent, critical thinkers. The findings of this action research project suggest that the incorporation of Bloom's Taxonomy in the early stages of the teacher training process has the potential of awakening a sense of inner curiosity and analysis in aspiring teachers. This contributes to the expectations schools have for their ability to create learning environments that promote inquiry, critical reasoning, reflection, and thorough analysis.

Bloom's Taxonomy classifies cognitive skills in a hierarchy, from fundamental knowledge retention (Remembering) to the generation of new ideas (Creating). This progression promotes CT development by first laying the groundwork for knowledge and understanding, then progressing to the application of this knowledge to new situations (Applying), and finally to more complex processes such as careful examination (Analysing) and appraisal (Evaluating). The greatest level, Creating, corresponds to the top of the critical thinking process, in which people synthesise information to produce unique solutions and original ideas. Thus, by advancing methodically through these levels and employing a variety of teaching modalities in the classroom, educators may promote and measure students' CTS, enabling them to solve difficult situations and make reasoned decisions outside of school environments.

The study's findings emphasise the importance of CTS in teacher training programmes in Chile and around the world. As education evolves, particularly in light of the challenges posed by the COVID-19 pandemic, it is becoming clear that teacher education programmes must reconsider the integration of CTS development into their curricula in order to ensure that aspiring teachers are properly prepared to scaffold these skills in their students when they take on classroom responsibilities. This includes, among other actions and measures, incorporating pedagogical interventions such as the ones implemented for the purposes of this research project (continuous feedback, structured academic writing instruction, and opportunities for peer reflection) as they proved to be effective to better prepare pre-service teachers for their future practice.

In relation to the possible limitations of this study, the relatively small sample size, which consisted of 37 participants from the same university and cohort, may be a constraint as this uniformity may restrict the findings' application to larger teacher education contexts. While the results

provide valuable insights into the role of Bloom's Taxonomy in fostering CTS in pre-service teachers, future studies should consider including participants from diverse institutions, backgrounds, and educational settings to validate these findings across different contexts. Expanding the scope of research could provide a more comprehensive understanding of how teacher education programmes can effectively integrate CTS development into their curriculum.

CONCLUSION

The findings of this study are consistent with the current literature, emphasising the critical role that CTS play in higher education, particularly in light of the changes brought about by the COVID-19 pandemic. Previous investigations, such as the ones conducted by Bezanilla et al. in 2019, Mete in 2020, and Nuroh et al. in 2020, have emphasised the need of purposeful pedagogical practices for promoting CTS in higher education. This research highlights the value of adopting Bloom's Taxonomy as a framework for guiding growth in teacher education programmes. Pedagogical interventions like continuous feedback, structured academic writing, and opportunities for peer reflection were particularly useful in helping aspiring teachers enhance their analytical skills. These findings suggest that integrating such approaches into teacher training curricula can significantly improve prospective teachers' ability to cultivate CTS in their future students. Additionally, the findings underscore the necessity for teacher education programmes to implement comprehensive approaches that go beyond academic understanding and encourage practical implementation. Thus, future research directions should include studies that look at the long-term influence of these interventions on teachers' classroom practices and student performance. Furthermore, it would be useful to explore how the efficacy of these strategies varies among educational contexts, such as diverse schools or cultural backgrounds.

BIBLIOGRAPHY

Bean, J. C., & Melzer, D. (2021). *Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom.* John Wiley & Sons.

Bezanilla, M. J., Fernández-Nogueira, D., Poblete, M., & Galindo-Domínguez, H. (2019). Methodologies for teaching-learning critical thinking in higher education: The teacher's view. *Thinking skills and creativity,* 33, 1-10. https://doi.org/10.1016/j.tsc.2019.100584

Bitchener, J., Storch, N., & Wette, R. (2017). *Teaching writing for academic purposes to multilingual students: Instructional approaches.* Routledge. https://doi.org/10.4324/9781315269665

Bloom, B.S. (1956) *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* David McKay, New York.

Bozkurt, A., Jung, I., Xiao, J. et al. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1–126. http://doi.org/10.5281/zenodo.3878572

Brookfield, S. (2012). *Enseñar pensamiento crítico: una guía práctica.* Jossey-Bass.

Brown, H. D., & Abeywickrama, P. (2019). *Language assessment: Principles and classroom practices.* Pearson Education.

Clary, G., Dick, G., Akbulut, A. Y., & Van Slyke, C. (2022). The after times: College students' desire to continue with distance learning post pandemic. *Communications of the Association for Information Systems,* 50(1), 3-18. https://doi.org/10.17705/1CAIS.05003

Cottrell, S. (2011). *Critical thinking skills: Developing effective analysis and argument*. Palgrave Macmillan.

Facione, P. A. (2011). Critical thinking: What it is and why it counts. *Insight assessment* 1(1), 1-23.

Freitas, L. C., Del Prette, Z. A. P., & Del Prette, A. (2020). Social distancing in the COVID-19 pandemic: notes on possible impacts on the social skills of individuals and populations. *Estudos de Psicologia,* 25(3), 253-262. https://doi.org/10.22491/1678-4669.20200026

Giltrow, J., Gooding, R., & Burgoyne, D. (2021). *Academic writing: An introduction*. Broadview Press.

Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking*. Psychology Press.

Hinkel, E. (2020). *Teaching Academic L2 Writing: Practical Techniques in Vocabulary and Grammar*. Routledge.

Lv, X., Ma, J., Brinthaupt, T. M., Zhao, S., & Ren, X. (2022). Impacts of university lockdown during the coronavirus pandemic on college students' academic achievement and critical thinking: A longitudinal study. *Frontiers in Psychology,* 13, 1-12. https://doi.org/10.3389/fpsyg.2022.995784

Mete, D. E. (2020a). Fostering critical thinking skills in ELT through video-based reflection. *Journal of Language and Linguistic Studies,* 16(1), 104-125. https://doi.org/10.17263/jlls.712662

Mete, F. (2020b). The role of critical thinking in the context of modern education. *International Journal of Social Sciences & Educational Studies*, 7(3), 21-28. https://doi.org/10.23918/ijsses.v7i3p21

Mpofu, N., & Maphalala, M. C. (2017). Fostering critical thinking in initial teacher education curriculums: A comprehensive literature review. *Gender and Behaviour,* 15(2), 9226-9236.

Nejmaoui, N. (2019a). Assessing the impact of a metacognitive intervention on the critical thinking skills of EFL learners. *Journal of Language Teaching and Research*, 10(1), 56-67. https://doi.org/10.17507/jltr.1001.07

Nejmaoui, N. (2019b). Improving EFL Learners' Critical Thinking Skills in Argumentative Writing. *English Language Teaching*, 12(1), 98-109. https://doi.org/10.5539/elt.v12n1p98

Nuroh, H., Sumardi, S., & Supriyadi, S. (2020). Enhancing EFL learners' critical thinking skills through project-based learning in the 21st-century education. *Journal of English Language Teaching and Linguistics*, 5(1), 89-101. https://doi.org/10.21462/jeltl.v5i1.374

Paudel, P. (2021). Online education: Benefits, challenges and strategies during and after COVID-19 in higher education. *International Journal on Studies in Education*, 3(2), 70-85. https://doi.org/10.46328/ijonse.32

Paul, R., Elder, L., & Foundation for Critical Thinking. (2012). *The nature and functions of critical & creative thinking*. Foundation for Critical Thinking Press.

Paul, R.W. (2012*). Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World.* CA: Foundation for Critical Thinking.

Rahman, S. A., & Manaf, N. F. A. (2017). A Critical Analysis of Bloom's Taxonomy in Teaching Creative and Critical Thinking Skills in Malaysia through English Literature. En*glish Language Teaching*, 10(9), 245-256. http://doi.org/10.5539/elt.v10n9p245

Saleh, S. E. (2019). Critical thinking as a 21st century skill: conceptions, implementation and challenges in the EFL classroom. *European Journal of Foreign Language Teaching*, 4(1), 1-16. https://doi.org/10.5281/zenodo.2542838

Tabrizi, S., & Rideout, G. (2017). Active learning: Using Bloom's taxonomy to support critical pedagogy. *International Journal for Cross-Disciplinary Subjects in Education*, 8(3), 3202-3209. http://doi.org/10.20533/ijcdse.2042.6364.2017.0429

Topping, K. J. (2023). Advantages and disadvantages of online and face-to-face peer learning in higher education: A review. *Education Sciences*, 13(4), 326. http://doi.org/10.3390/educsci13040326