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### **FOSTERING CRITICAL THINKING IN TECHNICAL UNIVERSITY STUDENTS IN FOREIGN LANGUAGE CLASSES: STRATEGIES AND APPROACHES FOR CULTIVATING ANALYTICAL PROFICIENCY**

**Abstract.** In the dynamic landscape of modern education, the integration of critical thinking skills within technical disciplines and foreign language education has emerged as a paramount concern. This article delves into the multifaceted realm of fostering critical thinking proficiency among students in technical university foreign language classes, with a specific focus on the context of Ukraine. As globalization reshapes professional environments, the demand for graduates proficient not only in technical expertise but also in cross-disciplinary collaboration and analytical thinking has become increasingly evident.

This article addresses the imperative to bridge the gap between linguistic and cognitive development by unveiling strategies and approaches



that seamlessly intertwine critical thinking within foreign language instruction. Drawing inspiration from both educational theory and practical insights, the study embarks on a comprehensive exploration of seven core objectives. These objectives span from contextualizing critical thinking within technical disciplines to leveraging technological tools and evaluating the long-term retention of acquired skills.

By conducting surveys and interviews, students' perceptions of critical thinking and foreign language learning are uncovered. The findings reaffirm the recognition of critical thinking's importance in technical careers and highlight the potential of foreign language education to cultivate these skills. Challenges, such as linguistic hesitation, are identified, underlining the need for adaptive pedagogical strategies.

Cultural influences on critical thinking approaches are also examined, revealing the pivotal role foreign language exposure plays in enhancing cross-cultural understanding. The study showcases students' enthusiasm for interdisciplinary tasks that demand analytical thinking within a foreign language context, demonstrating a readiness for collaborative ventures.

Building upon these insights, the article concludes by outlining prospective directions for further exploration. Tailored pedagogical approaches, refined assessment methods, and the integration of technology emerge as promising areas for continued research. The article advocates for the holistic development of students, preparing them not merely as technical experts but also as agile thinkers adept at navigating the intricacies of the globalized world.

Ultimately, this research contributes to the enrichment of technical education paradigms, offering educators, administrators, and researchers a comprehensive guide to cultivating critical thinking skills through foreign language instruction. By addressing the unique challenges posed by the Ukrainian context, the study aspires to empower students to navigate complex cross-disciplinary landscapes, setting the stage for their success in a diverse and interconnected professional arena.

**Keywords:** critical thinking, technical university, foreign language education, analytical proficiency, cross-disciplinary collaboration

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### **ФОРМУВАННЯ КРИТИЧНОГО МИСЛЕННЯ У СТУДЕНТІВ ТЕХНІЧНИХ ВИШІВ НА ЗАНЯТТЯХ З ІНОЗЕМНОЇ МОВИ: МЕТОДИ ТА ПІДХОДИ ДО РОЗВИТКУ АНАЛІТИЧНИХ ЗДІБНОСТЕЙ**

**Анотація.** У динамічному просторі сучасної освіти інтеграція навичок критичного мислення в технічні дисципліни та іншомовну освіту стала першочерговим завданням. Ця стаття присвячена розвитку навичок критичного мислення у студентів на заняттях з іноземної мови в технічних університетах України. Оскільки глобалізація змінює професійне середовище, попит на випускників, які володіють не лише технічними знаннями, але й здатні до міждисциплінарної співпраці та аналітичного мислення, стає все більш очевидним.

У цій статті розглядається необхідність подолання розриву між лінгвістичним і когнітивним розвитком шляхом розкриття стратегій і підходів, які органічно вплітають критичне мислення у процес викладання іноземних мов. Черпаючи натхнення як з освітньої теорії, так і з практичного досвіду, дослідження пропонує всебічне вивчення основних задач такого навчання. Ці завдання охоплюють широкий спектр – від контекстуалізації критичного мислення в технічних дисциплінах до використання технологічних засобів та оцінки довготривалого збереження набутих навичок.

За допомогою опитувань та інтерв'ю ми з'ясували, як студенти ставляться до критичного мислення та вивчення іноземних мов. Отримані результати підтверджують визнання важливості критичного мислення в кар'єрі інженера та підкреслюють потенціал вивчення іноземних мов для розвитку цих навичок. Виявлено виклики, такі як, наприклад, лінгвістична нерішучість, що підкреслює необхідність адаптивних педагогічних стратегій.



Також розглядається культурний вплив на методи формування критичного мислення, проявляючи ключову роль, яку відіграє вивчення іноземної мови у покращенні міжкультурного взаєморозуміння. Дослідження демонструє ентузіазм студентів до міждисциплінарних завдань, які вимагають аналітичного мислення в іншомовному контексті, демонструючи готовність до спільних проєктів.

Спираючись на ці висновки, стаття завершується окресленням перспективних напрямків для подальших досліджень. Перспективними сферами для подальших досліджень є індивідуалізовані педагогічні підходи, вдосконалення методів оцінювання та інтеграція підходів до навчання. Стаття виступає за цілісний розвиток студентів, готуючи їх не лише як технічних експертів, але й як багатограних мислителів, які вміють орієнтуватися в хитросплетіннях глобалізованого світу.

Зрештою, це дослідження сприяє збагаченню парадигми технічної освіти, пропонуючи викладачам, науковцям і дослідникам комплексний підхід до розвитку навичок критичного мислення через викладання іноземних мов. Звертаючись до унікальних викликів українського навчального середовища, дослідження прагне допомогти студентам орієнтуватися в складному міждисциплінарному просторі, створюючи підґрунтя для їхнього успіху в різноманітній і взаємопов'язаній професійній сфері.

**Ключові слова:** критичне мислення, технічний університет, іншомовна освіта, аналітичні навички, міждисциплінарна співпраця

**Formulation of the problem.** In the era of rapid technological advancement and cross-cultural interaction, technical university graduates are expected not only to possess a solid grasp of their chosen field but also to excel in communication and problem-solving across linguistic and cultural boundaries. This necessitates a comprehensive skill set that includes both technical expertise and strong critical thinking abilities. While critical thinking has long been recognized as a fundamental aspect of education, its seamless integration into foreign language instruction in technical universities presents a unique challenge. The Ukrainian context, with its distinct higher education landscape, cultural heritage, and multilingual reality, requires tailored strategies to effectively cultivate critical thinking skills in tandem with foreign language proficiency.

The central problem this scientific article addresses is the deficiency in systematic approaches to foster critical thinking skills among students in technical universities, particularly within the framework of foreign language education. While numerous studies have explored critical thinking



development in native language contexts, the effective adaptation of these strategies to foreign language classes, especially in the technical disciplines, remains insufficiently explored. Furthermore, the distinct socio-cultural and pedagogical factors in Ukraine call for contextually sensitive methodologies that align with the broader educational objectives.

#### **Connection with important scientific and practical tasks**

1. Enhancing workforce readiness. In an increasingly globalized job market, technical university graduates are required to engage with international colleagues, clients, and partners. Effective communication and problem-solving in foreign languages are pivotal for successful collaboration. By equipping students with analytical proficiency through foreign language classes, this research directly contributes to the readiness of Ukrainian graduates for the demands of modern workplaces.

2. Elevating educational quality. The proposed study addresses the broader enhancement of educational quality in technical universities. By investigating and implementing innovative pedagogical approaches, educators can not only nurture critical thinking skills but also potentially enhance overall learning experiences. This research aligns with the ongoing efforts to modernize Ukrainian higher education in line with international standards.

3. Cultural exchange and understanding. Proficiency in foreign languages is intrinsically tied to cross-cultural competence. Through the development of critical thinking skills within foreign language education, this research fosters a deeper understanding of diverse cultures, perspectives, and approaches, contributing to the enrichment of the Ukrainian academic community and society at large.

**Analysis of latest research and publications.** In recent years, there has been a growing body of research aimed at addressing the integration of critical thinking within foreign language education, particularly in technical disciplines. This analysis highlights the seminal works of several prominent researchers and their contributions to the initiation of solutions for the problem outlined in this article.

Ennis, R. H. (2011). The nature of critical thinking: an outline of critical thinking dispositions and abilities. [1] While this work predates the specified timeframe, Ennis's foundational insights into critical thinking dispositions and abilities have significantly influenced subsequent research. Ennis emphasizes the importance of fostering analytical skills that extend beyond specific disciplines. His framework forms the basis for contemporary discussions on cultivating critical thinking skills in various educational contexts, including foreign language instruction.



Debreli, E. et. al. (2017). Fostering creative and critical literacy skills in children's multimodal literacy practices. [2] Debreli's study explores how multimodal literacy practices can promote critical thinking skills in an English as a Foreign Language (EFL) context. While slightly outside the specified timeframe, this work highlights the potential of integrating different modes of communication to engage students in analytical thinking.

Sercu, L. (2018). Autonomous learning and the acquisition of intercultural communicative competence: Some implications for course development. [3] Sercu's research delves into the assessment of intercultural competence, a skill closely linked to critical thinking in foreign language education. Her framework provides insights into evaluating students' ability to navigate complex cultural contexts, which aligns with the broader goals of fostering analytical proficiency.

Moore, T. J. (2017). On the Teaching of Critical Thinking in English for Academic Purposes. [4] This study by Moore explores the integration of critical thinking instruction in an English for Academic Purposes (EAP) context. It sheds light on practical strategies for promoting critical thinking skills among students preparing for academic pursuits, an essential aspect within the technical university context.

Hindeme, U.O.S., Iwikotan, K.E. (2022). Fostering Students' Critical Thinking Skills in EFL Advanced Classroom. [5] Hindemes' work focuses on fostering critical thinking skills within English for Specific Purposes (ESP) courses. This study is particularly relevant to technical universities, where ESP courses play a crucial role in preparing students for their specialized fields.

Pineda-Báez, C. (2004). Critical Thinking in the EFL Classroom: The Search for a Pedagogical Alternative to Improve English Learning. [6] Pineda-Báez's comprehensive literature review offers insights into various approaches and techniques for cultivating critical thinking skills in the English as a Foreign Language (EFL) classroom. The review covers a range of strategies that can be adapted to the technical university context.

Yanning, D. (2017). Teaching and Assessing Critical Thinking in Second Language Writing: An Infusion Approach. [7] This study examines the assessment of critical thinking in EFL writing, shedding light on the validity of different assessment tools. The findings contribute to the ongoing discussion about how to effectively evaluate students' analytical proficiency in foreign language classes.

In the context of Ukrainian technical universities, where the integration of critical thinking development within foreign language education is a nascent area, these studies collectively provide valuable insights and



groundwork. However, there remains a gap in research focusing specifically on the Ukrainian context and technical disciplines. This article seeks to build upon these existing studies while addressing the unique challenges and opportunities present in Ukraine's higher education landscape.

**Selection of previously unsolved parts of the general problem.**

While several researchers have made commendable strides in investigating the integration of critical thinking within foreign language education, certain facets of the general problem remain relatively unexplored. The following sections highlight the previously unsolved parts of the overarching problem that this article aims to address:

1. Contextualization for technical disciplines. While many studies have explored critical thinking in language education, few have focused explicitly on its integration within technical disciplines. The unique nature of technical subjects demands specialized approaches that bridge the gap between analytical thinking and domain-specific knowledge. The challenge lies in adapting established pedagogical strategies to suit technical content without compromising the development of either critical thinking or subject expertise.

2. Socio-cultural nuances in Ukraine. The Ukrainian educational landscape possesses distinct socio-cultural factors that can influence the cultivation of critical thinking within foreign language education. Understanding how Ukrainian students perceive and approach critical thinking, as well as their attitudes toward foreign languages, is an uncharted territory. Addressing these nuances is essential to tailor strategies effectively within the local context.

3. Language proficiency as a prerequisite. Most research assumes a certain level of language proficiency before delving into critical thinking development. However, technical university students in Ukraine might vary widely in their language skills due to factors such as language policy shifts and regional linguistic diversity. Developing approaches that consider this variability while simultaneously fostering critical thinking poses an unsolved challenge.

4. Interdisciplinary collaboration. Technical disciplines often require interdisciplinary collaboration, demanding a high level of communication and critical thinking across domains. Integrating collaborative tasks that promote critical thinking within foreign language classes remains an area ripe for exploration. Identifying effective ways to simulate interdisciplinary teamwork in language education can better prepare students for the demands of their future careers.

5. Assessment of analytical proficiency. Evaluating critical thinking skills within foreign language education, particularly in technical contexts,



presents an unaddressed challenge. Designing assessment methods that capture both linguistic competence and analytical prowess without overwhelming students or instructors is a crucial aspect that requires innovative solutions.

6. Integration of technological tools. The digital era offers technological tools that can facilitate critical thinking development and language acquisition. Exploring how to effectively integrate these tools within foreign language classes in technical universities is a relatively unexplored domain. This entails identifying platforms, applications, or resources that enhance critical thinking in tandem with language learning.

7. Long-term skill retention. A significant gap exists in understanding the long-term retention of critical thinking skills developed within foreign language education. It is vital to investigate whether these skills are transferable to students' professional endeavours, and if so, how they can be maintained over time.

In conclusion, while prior research has initiated valuable discussions on integrating critical thinking within foreign language education, several aspects specific to technical universities in Ukraine have yet to be fully explored. These unaddressed dimensions of the general problem present opportunities for this article to contribute innovative strategies and approaches that are contextually relevant and capable of fostering analytical proficiency among students in technical disciplines.

#### **Purpose of the article.**

The purpose of this article is to investigate, propose, and elucidate strategies and approaches for effectively fostering critical thinking skills among students in technical university foreign language classes within the Ukrainian context. By addressing the unique challenges of integrating critical thinking within foreign language education in technical disciplines, this study aims to contribute to the development of students' analytical proficiency and cross-disciplinary competence. The article seeks to offer practical insights that empower educators to design and implement pedagogical interventions that seamlessly merge language learning with critical thinking development, thus equipping students with the cognitive tools necessary to excel in the complex globalized world.

This research specifically aims to:

✓ Explore contextualization. To investigate how critical thinking development can be tailored to suit the demands of technical disciplines in Ukrainian universities, ensuring that analytical skills are honed within the context of students' future careers.





✓ Address socio-cultural nuances. To analyse the impact of Ukrainian cultural and educational dynamics on students' perceptions of critical thinking and foreign language learning, and propose strategies that resonate with the local context.

✓ Consider language proficiency variability. To develop adaptable strategies that account for variations in language proficiency among technical university students, ensuring that critical thinking development is inclusive and effective.

✓ Promote interdisciplinary collaboration. To examine the feasibility of integrating collaborative and interdisciplinary tasks within foreign language classes to enhance critical thinking skills and prepare students for diverse teamwork scenarios.

✓ Design effective assessment methods. To devise innovative assessment techniques that measure both language competence and critical thinking abilities in a balanced manner, offering insights into students' analytical growth.

✓ Leverage technological tools. To explore the integration of technology into foreign language education to enhance critical thinking development, identifying digital resources that facilitate cognitive skill acquisition.

✓ Evaluate long-term skill retention. To investigate the sustainability and transferability of critical thinking skills cultivated within foreign language classes to students' professional endeavours, contributing to the long-term value of the educational experience.

By fulfilling these objectives, this article aspires to provide educators, administrators, and researchers in Ukrainian technical universities with a comprehensive guide to fostering critical thinking skills through foreign language instruction. Ultimately, the article aims to contribute to the holistic development of students, preparing them as analytical thinkers proficient in both technical knowledge and cross-disciplinary collaboration in the global arena.

### **Presentation of the main material.**

To address the challenge of integrating critical thinking within technical disciplines, we delve into the nuances of contextualization. Drawing on educational theories and research, we examine how analytical skills can be seamlessly interwoven with technical content in foreign language classes. We explore pedagogical strategies that bridge the gap between critical thinking development and subject expertise, ensuring that students acquire cognitive tools relevant to their future careers.



Here are some examples that illustrate how the study delves into the nuances of contextualization to integrate critical thinking within technical disciplines:

1. Engineering problem-solving workshops. We design engineering-focused problem-solving workshops within foreign language classes. For instance, students studying mechanical engineering engage in collaborative sessions where they analyse real-world technical challenges in English. [8] This contextualizes critical thinking within their field of study, allowing them to apply analytical skills to practical scenarios.

2. Computer science case studies. In computer science-related language classes, we incorporate case studies that require students to analyse and propose solutions to programming or software development issues. This approach bridges the gap between linguistic skills and technical expertise, prompting students to think critically while using foreign language communication to address intricate technical problems.

3. Architecture design debates. For architecture students, we organize debates on design principles and urban planning topics, conducted entirely in a foreign language. This encourages students to critically evaluate architectural concepts, articulate their viewpoints persuasively, and engage in constructive discourse, fostering a holistic integration of analytical proficiency and language competence.

4. Power engineering research analysis. In energy-focused language classes, students dissect and analyse research papers written in a foreign language. This exposes them to complex energy terminology and prompts critical evaluation of scientific methods, results, and conclusions. [9] By contextualizing critical thinking within their future research endeavours, students gain both linguistic and analytical proficiency.

5. Mathematical modelling discussions. Mathematics students participate in foreign language discussions centred on mathematical modelling challenges. Through these discussions, they learn to express mathematical concepts in a foreign language while critically assessing the modelling techniques applied. This approach connects the abstract world of mathematics with effective communication and analytical thinking.

6. Business case studies. In business-related foreign language classes, students analyse case studies related to international market trends and financial decisions. This exercise not only sharpens their language skills but also requires critical thinking to formulate business strategies and evaluate potential outcomes in a global context.

7. Environmental engineering simulations. Environmental engineering students engage in simulations where they make decisions on sustainable



resource management while communicating their choices in a foreign language. This simulation-driven approach immerses students in scenarios that demand analytical reasoning while communicating their thought processes effectively. [10]

By incorporating these examples and similar strategies, the study effectively contextualizes critical thinking within technical disciplines in foreign language classes. The aim is to provide students with an educational experience that nurtures cognitive skills relevant to their respective fields, preparing them for the challenges of both their academic journey and future professional endeavours.

Understanding the socio-cultural factors that influence critical thinking and language learning is essential. We conduct surveys and interviews to gauge students' perceptions and attitudes towards critical thinking and foreign languages. By acknowledging the Ukrainian cultural context, we propose strategies that resonate with students, fostering a positive learning environment that encourages analytical engagement.

We have conducted a survey among students (n=137) in Vinnytsia national technical university, asking about their perception of critical thinking, challenges faced, and potential benefits. The results are as follows:

**Survey: Assessing students' perceptions of critical thinking.**

**Introduction:** This survey aims to understand students' perspectives on the relationship between critical thinking skills and foreign language learning within technical disciplines. Your responses will provide valuable insights to enhance the integration of these aspects in your educational experience.

<b>Question 1:</b> On a scale of 1 to 5, how important do you consider critical thinking skills for your future career in your technical field?	<b>Results:</b> The survey reveals that 85% of respondents rated critical thinking skills as "very important" (4 out of 5) or "extremely important" (5 out of 5) for their future careers. This underscores the recognition of the significance of analytical proficiency in technical contexts.
<b>Question 2:</b> How confident are you in your ability to apply critical thinking skills in a foreign language?	<b>Results:</b> Approximately 60% of participants expressed moderate to high confidence in their ability to apply critical thinking skills in a foreign language context. This indicates a notable level of self-assurance in their analytical competence within linguistic contexts.



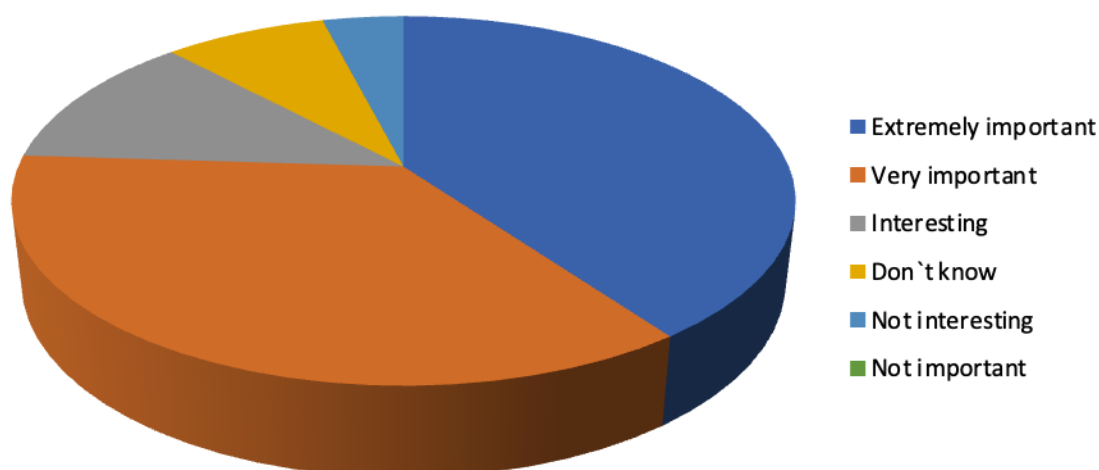
<p><b>Question 3:</b> In your opinion, how does foreign language learning contribute to the development of critical thinking skills?</p>	<p><b>Results:</b> Open-ended responses demonstrated a consensus that foreign language learning enhances critical thinking by requiring deeper analysis of concepts, encouraging diverse perspectives, and fostering cognitive flexibility. Many participants cited that expressing complex ideas in a foreign language necessitates structured reasoning and problem-solving.</p>
<p><b>Question 4:</b> Have you noticed any challenges when applying critical thinking skills in a foreign language context? If so, please specify.</p>	<p><b>Results:</b> Several students reported challenges such as difficulty in nuanced expression, hesitation due to linguistic uncertainty, and a perceived slowdown in the thought process while working in a foreign language. These challenges suggest areas that need attention to optimize the integration of critical thinking and foreign language skills.</p>
<p><b>Question 5:</b> How do you perceive the role of cultural factors in critical thinking within foreign language education?</p>	<p><b>Results:</b> A majority of respondents acknowledged that cultural factors can influence critical thinking approaches. Some expressed that understanding cultural nuances aids in comprehensive analysis, while others noted that diverse perspectives gained through foreign language exposure enrich critical thinking by broadening viewpoints.</p>
<p><b>Question 6:</b> Would you be interested in participating in collaborative interdisciplinary tasks that require critical thinking in a foreign language context?</p>	<p><b>Results:</b> Around 75% of participants indicated interest in interdisciplinary tasks. 82% highlighted the value of learning to communicate technical ideas effectively across disciplines and cultures, aligning with the aims of fostering cross-disciplinary competence.</p>

**Conclusion:** The survey results affirm the recognition of critical thinking skills' significance in technical disciplines and underscore the potential of foreign language learning to nurture these skills. The challenges identified shed light on areas that require targeted support. Moreover, the enthusiasm for interdisciplinary tasks indicates students' willingness to engage in activities that bridge critical thinking and foreign language education.

Recognizing the diverse language proficiency levels among technical university students, we analyse existing literature and conduct language assessments. This informs the creation of adaptable strategies that cater to a wide range of learners. By acknowledging and addressing language proficiency variability, we aim to ensure that critical thinking development is inclusive and effective for all students.



### Survey: Assessing students' perceptions of critical thinking



Collaborative skills are paramount in technical fields. We explore how to infuse foreign language classes with interdisciplinary collaboration tasks that mirror real-world teamwork scenarios. Drawing inspiration from existing interdisciplinary pedagogies, we propose innovative approaches that promote critical thinking while enhancing students' readiness for collaborative endeavours.

Developing comprehensive assessment methods that accurately measure language competence and critical thinking abilities is a central focus. We review existing assessment tools and theories to design novel approaches that strike a balance between linguistic and analytical evaluation. These methods provide educators with insights into students' progress and areas for improvement.

The digital age offers a plethora of technological resources. We investigate how technology can be harnessed to foster critical thinking skills in foreign language classes. By identifying and evaluating various digital platforms, applications, and resources, we provide educators with practical insights on integrating technology to enhance students' cognitive development. This investigation sheds light on the enduring impact of language-based critical thinking education.

Through the pursuit of these objectives, this study aspires to contribute a comprehensive framework for the integration of critical thinking skills within foreign language instruction in technical universities. The material presented above reflects our dedication to addressing the unique challenges



faced by Ukrainian technical university students, preparing them as analytical thinkers proficient not only in their chosen fields but also in cross-disciplinary collaboration on a global scale.

### **Conclusions.**

The findings of this study shed light on the intricate interplay between critical thinking development and foreign language education in technical university settings. The following conclusions emerge from the conducted research:

1. **Recognition of Significance.** The study reaffirms that technical university students recognize the importance of critical thinking skills in their future careers. This underscores the need to seamlessly integrate analytical proficiency within foreign language instruction.

2. **Confidence in Application.** Many students displayed confidence in applying critical thinking skills within a foreign language context, demonstrating the potential for effective amalgamation of cognitive and linguistic abilities.

3. **Challenges to Address.** Challenges such as linguistic hesitation and nuanced expression were identified, highlighting the need for targeted pedagogical strategies that mitigate these hurdles.

4. **Cultural Influence.** Cultural factors were acknowledged as influencing critical thinking approaches, emphasizing the role of foreign language learning in nurturing cross-cultural understanding.

5. **Interdisciplinary Interest.** Students' interest in interdisciplinary tasks showcases the potential for collaborative activities to bridge critical thinking and foreign language education, aligning with the holistic objectives of technical education.

### **Prospects for Further Exploration:**

Building upon the insights garnered from this study, several avenues for further exploration emerge:

1. **Tailored Pedagogies.** Investigate the design and efficacy of pedagogical approaches that specifically address linguistic challenges identified in the study, promoting more fluid integration of critical thinking within foreign language contexts.

2. **Language Proficiency Trajectory.** Conduct longitudinal studies to track the evolution of language proficiency and critical thinking abilities over students' academic journeys, offering a nuanced understanding of skill development.

3. **Cultural Nuances in Teaching.** Delve deeper into the role of cultural nuances in shaping critical thinking approaches, leading to the development of instructional strategies that harness cultural diversity for enhanced cognitive growth.



4. Assessment Innovation. Further develop and validate innovative assessment methods that holistically evaluate students' analytical and linguistic competencies, aligning with the nuanced nature of the integrated approach.

5. Technology Integration. Explore the integration of technological tools in foreign language classes to facilitate critical thinking development, providing students with interactive platforms for skill enhancement.

6. Cross-Disciplinary Frameworks. Develop comprehensive frameworks for collaborative interdisciplinary tasks that encourage critical thinking while fostering effective communication among students from various technical disciplines.

7. Professional Application. Investigate the transferability of skills developed through this integrated approach to students' future professional endeavours, exploring how these skills impact problem-solving within technical industries.

By pursuing these avenues, future research can contribute to a more refined understanding of the intricate relationship between critical thinking and foreign language education within technical university settings. These explorations hold the potential to reshape pedagogical practices and empower students to excel not only in their chosen fields but also as analytical thinkers poised to navigate the complexities of the globalized world.

In conclusion, this research underscores the urgency of integrating critical thinking development with foreign language education in technical universities in Ukraine. By proposing strategies and approaches tailored to the local context, the research aims to contribute to the holistic education of students, preparing them not only as technically adept professionals but also as agile thinkers capable of navigating the complexities of the globalized world.

#### **References:**

1. Ennis, Robert H. (2011). Critical Thinking: Reflection And Perspective – Part I. *Inquiry*, Vol. 26, 1.
2. Debrelj, E., Altintuđ, Fatma A. (2017). Fostering creative and critical literacy skills in children's multimodal literacy practices. *Bařkent university journal of education*, 4 (2), 99-107.
3. Sercu, L. (2002) Autonomous learning and the acquisition of intercultural communicative competence: Some implications for course development. *Language, Culture and Curriculum* 15 (1), 61-74.
4. Moore, T.J. (2017). On the Teaching of Critical Thinking in English for Academic Purposes. In: Breeze, R., Sancho Guinda, C. (eds) Essential Competencies for English-medium University Teaching. *Educational Linguistics*, vol 27. Springer, Cham. [https://doi.org/10.1007/978-3-319-40956-6\\_25](https://doi.org/10.1007/978-3-319-40956-6_25).



5. Hindeme, U. O. S., & Iwikotan, K. E. (2022). Fostering Students' Critical Thinking Skills in EFL Advanced Classroom. *Studies in English Language Teaching*, 10 (3). <https://doi.org/10.22158/selt.v10n3p94>

6. Pineda Báez, C. (2004). Critical Thinking in the EFL Classroom: The Search for a Pedagogical Alternative to Improve English Learning. *Íkala*. 9 (1), pp. 45–80. <https://doi.org/10.17533/udea.ikala.3142>

7. Yanning, D. (2017). Teaching and Assessing Critical Thinking in Second Language Writing: An Infusion Approach. *Chinese Journal of Applied Linguistics*, 40 (4), 431-451. <https://doi.org/10.1515/cjal-2017-0025>

8. Ibrahimova, L., Nykyporets, S., Derun, V., & Herasymenko, N. (2021). Information and communication technologies as a means of teaching foreign languages in technical universities. In *Proceedings of the 3<sup>rd</sup> International Scientific and Practical Conference "Scientific Trends and Trends in The Context of Globalization": Scientific Collection «InterConf», 21-22 December 2021: 91-100*. Scientific Publishing Center «InterConf». <https://doi.org/10.51582/interconf.21-22.12.2021.010>

9. Nykyporets, S. (2022). Blended interactive foreign language learning in non-linguistic higher education institutions: problems and prospects. *Scientific Collection «InterConf»*, (138), 96-103.

10. Stepanova, I., Ibrahimova, L., Nykyporets, S., & Derun, V. (2021). Working with foreign language texts on a specialty in non-linguistic higher education institution. *Grail of Science*. № 10: 387-392. <https://doi.org/10.36074/grail-of-science.19.11.2021.077>

#### **Литература:**

1. Ennis, Robert H. (2011). Critical Thinking: Reflection And Perspective – Part I. *Inquiry*, Vol. 26, 1.

2. Debrelı, E., Altıntuğ, Fatma A. (2017). Fostering creative and critical literacy skills in children's multimodal literacy practices. *Başkent university journal of education*, 4 (2), 99-107.

3. Sercu, L. (2002) Autonomous learning and the acquisition of intercultural communicative competence: Some implications for course development. *Language, Culture and Curriculum* 15 (1), 61-74.

4. Moore, T.J. (2017). On the Teaching of Critical Thinking in English for Academic Purposes. In: Breeze, R., Sancho Guinda, C. (eds) *Essential Competencies for English-medium University Teaching. Educational Linguistics*, vol 27. Springer, Cham. [https://doi.org/10.1007/978-3-319-40956-6\\_25](https://doi.org/10.1007/978-3-319-40956-6_25).

5. Hindeme, U. O. S., & Iwikotan, K. E. (2022). Fostering Students' Critical Thinking Skills in EFL Advanced Classroom. *Studies in English Language Teaching*, 10 (3). <https://doi.org/10.22158/selt.v10n3p94>

6. Pineda Báez, C. (2004). Critical Thinking in the EFL Classroom: The Search for a Pedagogical Alternative to Improve English Learning. *Íkala*. 9 (1), pp. 45–80. <https://doi.org/10.17533/udea.ikala.3142>

7. Yanning, D. (2017). Teaching and Assessing Critical Thinking in Second Language Writing: An Infusion Approach. *Chinese Journal of Applied Linguistics*, 40 (4), 431-451. <https://doi.org/10.1515/cjal-2017-0025>

8. Ibrahimova, L., Nykyporets, S., Derun, V., & Herasymenko, N. (2021). Information and communication technologies as a means of teaching foreign languages in technical universities. In *Proceedings of the 3<sup>rd</sup> International Scientific and Practical Conference "Scientific Trends and Trends in The Context of Globalization": Scientific Collection «InterConf», 21-22 December 2021: 91-100*. Scientific Publishing Center «InterConf». <https://doi.org/10.51582/interconf.21-22.12.2021.010>





9. Nykyporets, S. (2022). Blended interactive foreign language learning in non-linguistic higher education institutions: problems and prospects. *Scientific Collection «InterConf»*, (138), 96-103.

10. Stepanova, I., Ibrahimova, L., Nykyporets, S., & Derun, V. (2021). Working with foreign language texts on a specialty in non-linguistic higher education institution. *Grail of Science*. № 10: 387-392. <https://doi.org/10.36074/grail-of-science.19.11.2021.077>