International Journal of Education and Practice
2025 Vol. 13, No. 4, pp. 1690-1701
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/61.v13i4.4484

Effectiveness of practical tasks in learning professional English in IT field

Zhuzdenbay Galiya[1+]
Yermaganbetova Madina[2]
Akanova Akerke[3]

[1]*Department of Informatics, Faculty of Information Technologies, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.*
Email: galiya_duzdenbaeva@mail.ru
[2]*Informatics Department, Faculty of Information Technologies, L.N. Gumilyev Eurasian National University, Astana, Kazakhstan.*
Email: madinaerm@mail.ru
[3]*Faculty of Computer Systems and Professional Education, Saken Seifulin Kazakh Agrotechnical Research University, Astana, Kazakhstan.*
Email: akerkegansaj@mail.ru


(+ Corresponding author)

Article History
Received: 28 April 2025
Revised: 17 September 2025
Accepted: 6 October 2025
Published: 23 October 2025

Keywords
English for specific purposes
ESP instruction
IT students
Language learning
Practical tasks
Professional English.

ABSTRACT

This study investigates the effectiveness of practical tasks in enhancing the acquisition of professional English among students in the field of Information Technology (IT). Recognizing the growing need for English for Specific Purposes (ESP) in technical disciplines, the research explores how targeted, context-relevant exercises can improve language competence, motivation, and professional communication skills. The study involved 125 undergraduate students from Saken Seifulin Kazakh Agrotechnical Research University, who were divided into control and experimental groups. The experimental group was provided with specially developed practical tasks based on programming language content, while the control group used traditional vocabulary exercises. Data were collected through student surveys and pre- and post-tests, with additional qualitative analysis of task content and student engagement. The results indicated that students in the experimental group demonstrated significantly higher performance in vocabulary retention, reading comprehension, and task engagement. Furthermore, students reported increased motivation and perceived relevance of English learning to their future careers. These findings underscore the importance of contextually grounded materials in ESP instruction and suggest that integrating discipline-specific content enhances both language proficiency and technical understanding. The study contributes to curriculum development practices in ESP and offers insights for language educators aiming to support IT students in acquiring field-relevant communication skills.

Contribution/Originality: This study contributes to the existing literature by addressing the gap in effective ESP teaching methods for IT students in Kazakhstan. It uses a new estimation methodology combining surveys, pre/post-tests, and statistical analysis. This study originates a framework for designing practical tasks tailored to IT professionals. It is one of very few studies investigating ESP pedagogy in Central Asian agricultural universities. The paper contributes the first logical analysis of task-based learning outcomes in IT English. The paper's primary contribution is finding that structured practical tasks significantly improve professional vocabulary retention. This study documents the challenges and solutions in ESP instruction for non-linguistic majors.

1. INTRODUCTION

Nowadays, good proficiency in the English language has become a requisite for almost every job position around the world, and as such, the teaching of English has increased in importance through the years in university systems

(Alsamani & Daif-Allah, 2016). In today's world, proficiency in professional English is becoming increasingly important for students studying in the field of information technology (IT). Professional or business English is the most frequent subcategory of English for special purposes, according to Eurostat data showing the number of university graduates in various fields of education in the EU (Alshayban, 2022). It is the most important communication tool in intercultural professional activities, situations, and business contexts. These days, numerous universities offer English courses tailored for specific purposes, raising the question of whether these courses provide valuable materials for students aiming to work abroad, as they stem from our interconnected global world. Teaching professional English within IT education comes with its own set of challenges. In Kazakhstan, the focus on English for specific purposes is deliberate due to the rapid advancements in technology and globalization. Mastering effective communication in English is becoming crucial for success in the IT sector (Basturkmen, 2021). However, teaching English in the context of IT has its own characteristics and challenges for both students and teachers. The stage of such scientific challenges is the inclusion of advanced results in professional language by developing various types of practical tasks (Bender, 2024). Corpus linguistics has revolutionized the understanding and study of language today, which has led to the spread of empirical research on almost every aspect of language (Bender, 2024). The same author highlights the rapid development of this field of linguistics: «The research infrastructure that offers data, tools, and services to support research based on linguistic resources is evolving at a staggering rate». In addition, (Stojković, 2023) argues that the potential of corpora is such that Konrad (2000) spoke of them as a means that would completely change the teaching of foreign languages and general language education, encompassing both what is taught and how it is taught (Csizér & Illés, 2020). The ultimate goal of ESP education is to scientifically develop practical tasks in accordance with the different needs of students and the register of communicative activities, to teach students how to use communicative strategies correctly, thereby increasing their competence in English (Ellederová, 2023). Learning involves a deliberate effort by the student to grasp the material being taught (Ezhova, 2020). In its deepest sense, it is an intellectual and psychological transformation, almost like violence against oneself when changing oneself (Galskova, 2023). Affirmed by Beckett and Gulbahar (2019) According to Slater and Tammy (2020) needs assessment makes English for Specific Purposes equally a 'student-centered methodology'. A learning-oriented methodology, as initially stated, cannot be successful without in-depth attention to learners, their personality traits, learning preferences, abilities, talents, and the like. The benefits of a learning-based approach are recognized and used to increase motivation to develop language skills. A clear comparison between what students currently know and what they should know at the end of the course is required before designing a course. Curriculum, teaching methods, and strategies are closely dependent on needs analysis; there is no standard model for needs analysis. It is necessary to make the most profitable use of resources and to cooperate with students to decide on the next step. The motivation to create effective materials drives the development of knowledge and awareness of language and learning theories. This, in turn, aids content developers in producing high-quality materials (Goźdź-Roszkowski, 2021). In this context, our study aims to examine the effectiveness of practical tasks in professional English within the field of IT and their impact on the quality of student learning. Understanding the effectiveness of developing such tasks is an important step in the development of adapted training methods that meet the needs of modern IT specialists and improve their professional skills. Thus, our research addresses the current challenges in teaching professional English in IT and emphasizes the need for new approaches to overcome them.

The aim of this study is to demonstrate the effectiveness of practical tasks in teaching IT students. The goals of this study are:

1. To conduct a survey among students on the methodological foundations for developing and assessing the quality of practical tasks for teaching professional English in IT.
2. To evaluate the initial knowledge of professional English among IT students.
3. To analyze the results of the assessments of IT students' knowledge.

English for Special Purposes is recognized as a student-centered approach to teaching professional language (Hyland, 2022). The President of Kazakhstan Kassym-Jomart Tokayev instructed to make Kazakhstan «a country that is actively developing the IT sector, actively attracting the largest cloud computing players to the Kazakh market, such as Microsoft Azure, Amazon Web Services, Google Cloud, and others». As for P. Koktyshev, «There is a shortage of knowledge among IT specialists in our country. The developed practical tasks for teaching professional English to future IT specialists allow students to get to know this area better. The active use of practical tasks in teaching English contributes to a deeper understanding of the material and the development of practical skills in students, focusing on the basic requirements» (Lourido-Badía, 2023). At the initial stage of developing practical tasks for teaching aids, content developers accumulate and generalize material from scientific articles by modern researchers, focusing on the essential requirements for creating textbooks. To address students' specific needs in university-level English education, a suitable approach involves using a website builder (WBP)-based project. According to Bracaj (2014) and Salmani-Nodoushan (2020) this method is particularly effective for teaching English for Specific Purposes (ESP), such as Legal English. Students have assessed the impact of WBP on their learning, highlighting its benefits for reflection, collaboration, and skill development. WBP presents an innovative and forward-thinking approach that supports both current and lifelong learning. As smart learning environments continue to evolve, so do the methods educators use to teach and learn (Marušić, 2023). Rhetorical devices are used when talking about technological topics; IT specialists present logical and convincing arguments, demonstrate knowledge and experience, and make complex technical concepts more accessible to non-specialists (Rodríguez-Peñarroja, 2022). The need for students to understand AI generation as an important component of digital literacy and how English interacts with this technology is emphasized (Rustamov, 2023). English for Specific Purposes (ESP) is becoming essential in defining language learning practices (Stojković, 2021). Curricula and resources act as a vital bridge between perception and practice, ensuring that English for Specific Purposes (ESP) remains well-grounded and balances theoretical knowledge with practical application. This approach is essential for enhancing communication skills among professionals (Stojković, 2020). Research into the language used in academic, professional, and workplace settings has always been a key focus of ESP. This ensures that English instruction is relevant and practical for professionals in various fields. By understanding the unique language needs of different contexts, ESP helps learners develop effective communication skills for their specific careers (Address of the Head of State Kassym-Jomart Tokayev to the People of Kazakhstan, 2023). Our research aims to develop and evaluate practical tasks tailored to the specific needs of IT students, considering their future roles and responsibilities. Using real-world examples such as algorithms and programming languages, we help students acquire both language skills and IT knowledge, providing a comprehensive and practical learning experience.

2. MATERIALS AND METHODS

The study uses questionnaires to collect information from IT students, evaluating their views and the effectiveness of teaching professional English through practical tasks. Tests are conducted before and after these tasks to measure initial knowledge and skills. Statistical methods are used to analyze the results. The qualitative method, which involves analyzing educational materials and tasks, is used within the training framework to identify the structure and quality of practical tasks in teaching professional English. By combining both quantitative and qualitative methods, the study provides a comprehensive understanding of its effectiveness. The study includes 125 IT students from Saken Seifulin Kazakh Agrotechnical Research University. Participants are selected based on a convenient sampling procedure from two educational programs. The average age of the participants is 20 years. The participants' level of English proficiency is assessed using the Cambridge Online Test (Cambridge English, 2022). The results show that the participants have a basic level of language proficiency. To evaluate the effectiveness of practical tasks in training under different conditions, the participants are divided into experimental and control groups. Accordingly, two groups (N = 58) are randomly assigned to learning conditions with developed practical

tasks (paper media), and one group (N = 67) is assigned to a control condition with traditional learning materials and vocabulary (paper cards). Participants provide their informed consent before the study begins, and their participation is freely chosen. The programming language consists of 10 practical tasks and technical terms (and concepts) selected from tests in a widely used professional IT textbook. The following steps are taken in the selection of tasks. Lists of basic concepts at the end of each chapter of the IT textbook (10 chapters) are examined to determine a list of technical terms (e.g., algorithm, programming language, Python, and discreteness). The selected terms are included in the list of industry terminology and key disciplinary concepts. They are studied in the Dictionary of IT. A list of target items with a programming language in the dictionary is provided to university professors with a Ph.D. in IT, who are asked to (1) exclude non-technical items based on their familiarity with the subject area, and (2) highlight words that are important for IT students to learn. As a result, about 100 words are identified that have both technical significance and high pedagogical value for undergraduate students.

3. RESULTS

The goals of this study are:

1. To conduct a survey among students on the methodological foundations for developing and assessing the quality of practical tasks for teaching professional English in IT.
2. To evaluate the initial knowledge of professional English among IT students.
3. To analyze the results of the measurement of IT students' knowledge.

Information for this study is gathered throughout the research activities conducted over the academic semester, which is approximately 10 weeks. Before starting the experiment, a survey is conducted among undergraduate students on the topic of the development and assessment of the quality of practical tasks for learning professional English in the IT field (Figure 1-5). The questionnaire shows the following results of 67 students of the Faculty of Computer Systems at Saken Seifulin Kazakh Agrotechnical Research University on EP 6B06102 «Business Informatics» and EP 6B061103 «Computer Engineering».

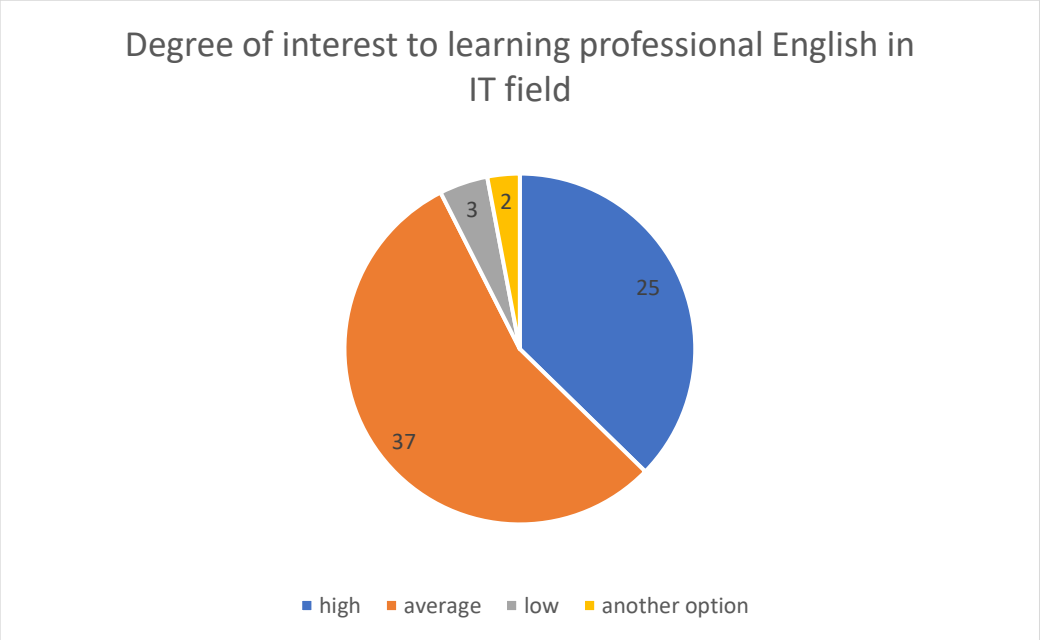

Figure 1. Students' results of the questionnaire.

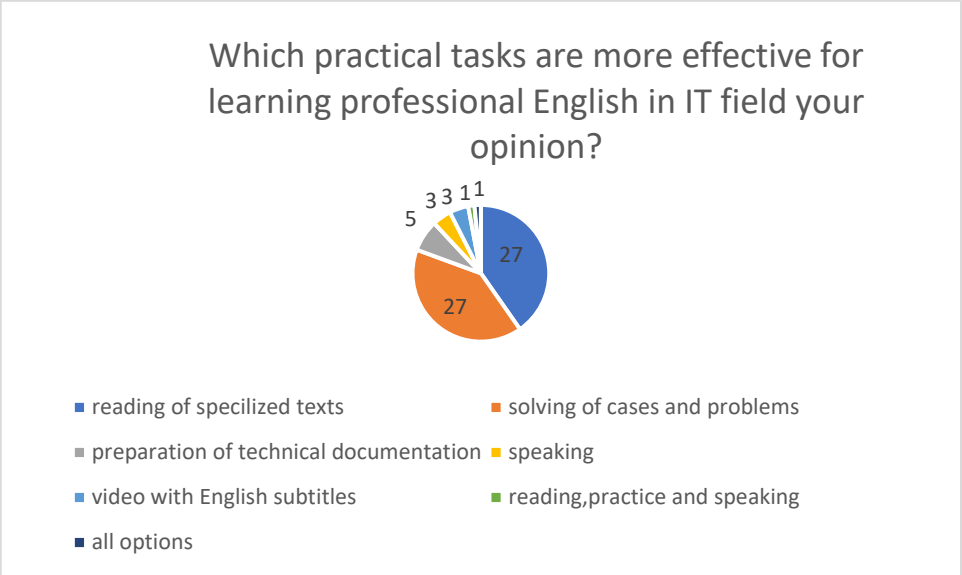

Figure 2. Students' results of the questionnaire.

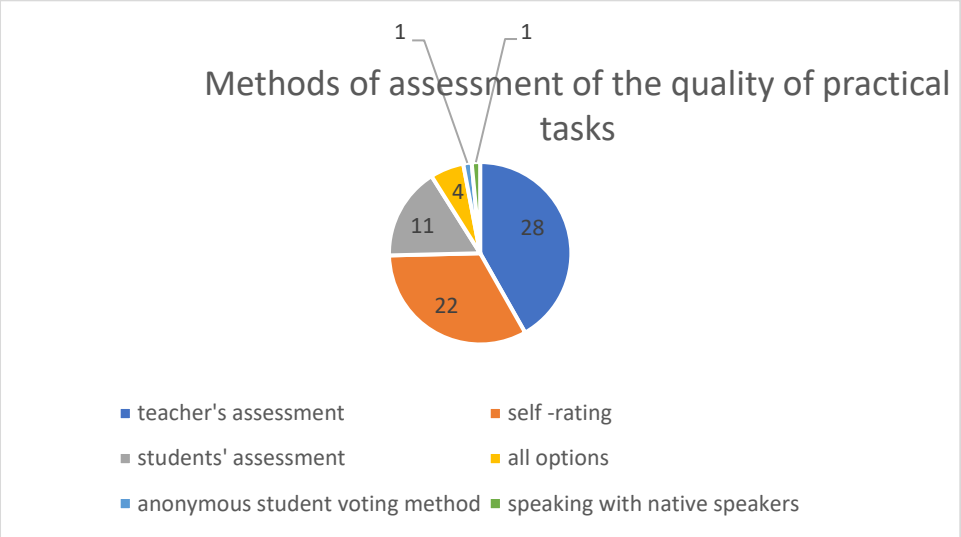

Figure 3. Students' results of the questionnaire.

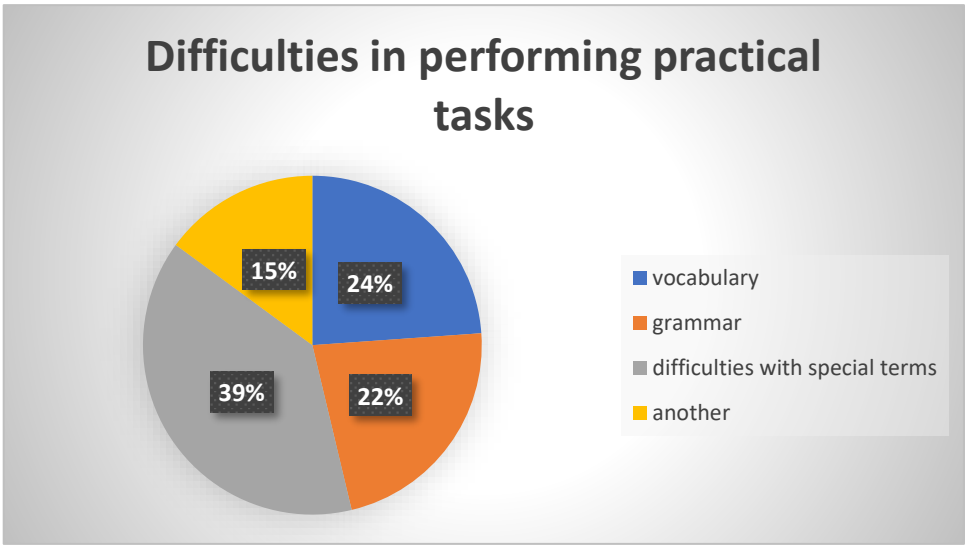

Figure 4. Students' results of the questionnaire.

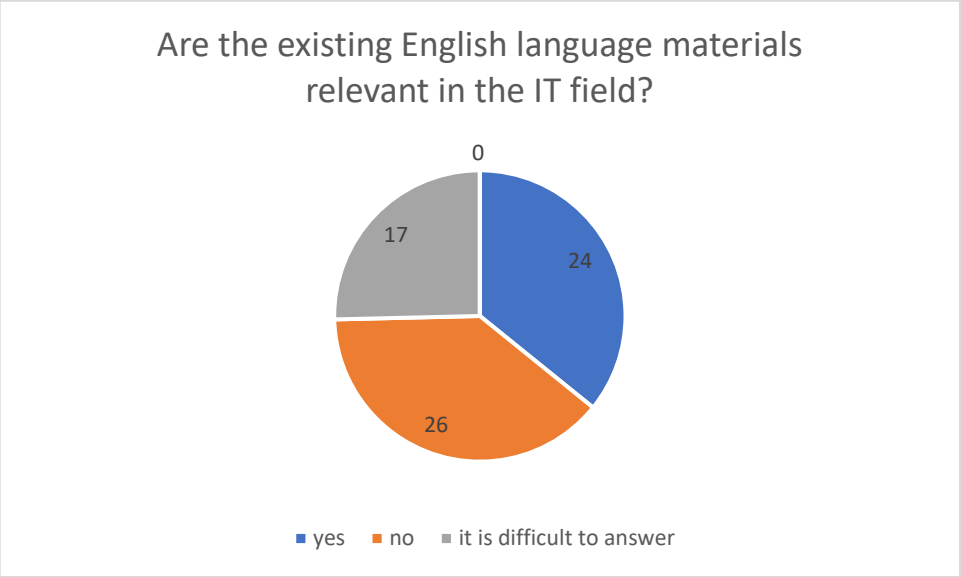

Figure 5. Students' results of the questionnaire.

We also assessed the primary knowledge of professional English among bachelor's students of S. Seifulin Kazakh Agrotechnical Research University on OP6B06102 "Business Informatics" and EP 6B061103 "Computer Engineering." There were 67 respondents in the control group, with 10 traditional tasks in professional English, and the highest score was 100. Here, in the diagram, we have presented the results of the control group.

Figure 6 shows the outcomes of students' basic knowledge assessment using traditional tasks during the experiment.

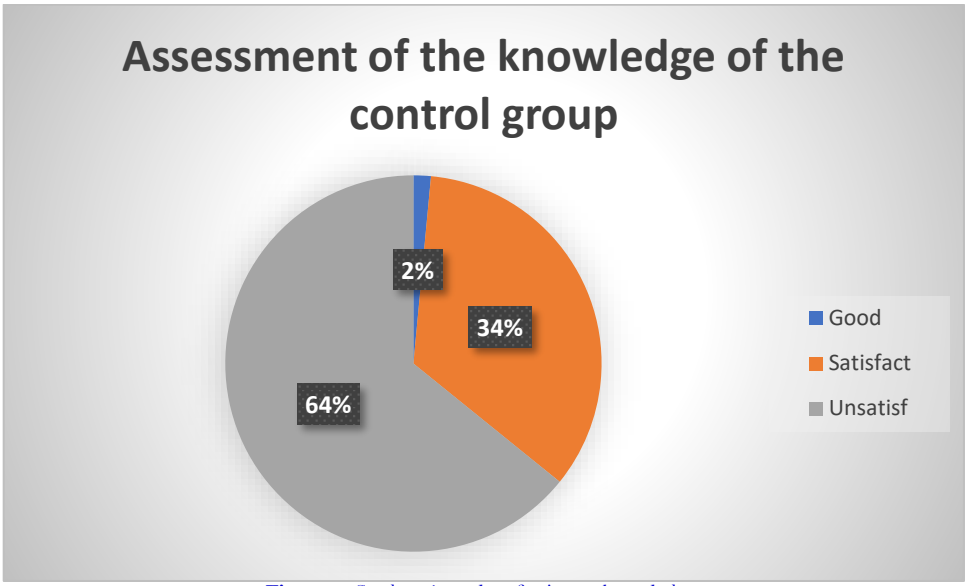

Figure 6. Students' results of primary knowledge.

The study used paper media (or tasks with terms) created by researchers to teach IT university students terminology and programming. The use of practical tasks for learning vocabulary is a strategy based on a purposeful mechanism for learning vocabulary. Each task contained a target word (in this example, "algorithm") and a simple English definition of the target word with three example sentences that demonstrated the use of the word in a meaningful context from the other side (Figure 7) The definition helps students understand the term, and the sentences show how to use it correctly.

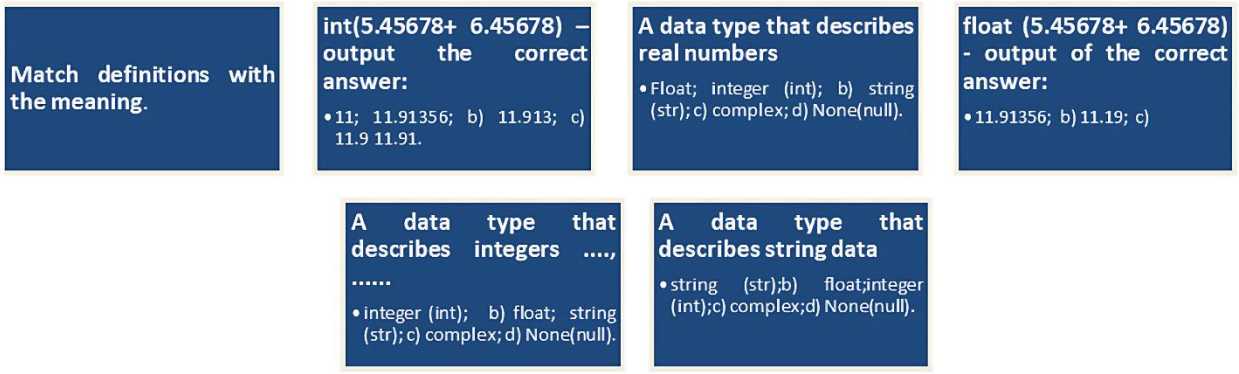

Figure 7 Sample of a trial practical task.

The result of assessing the quality of the developed practical tasks is presented below Figure 4.

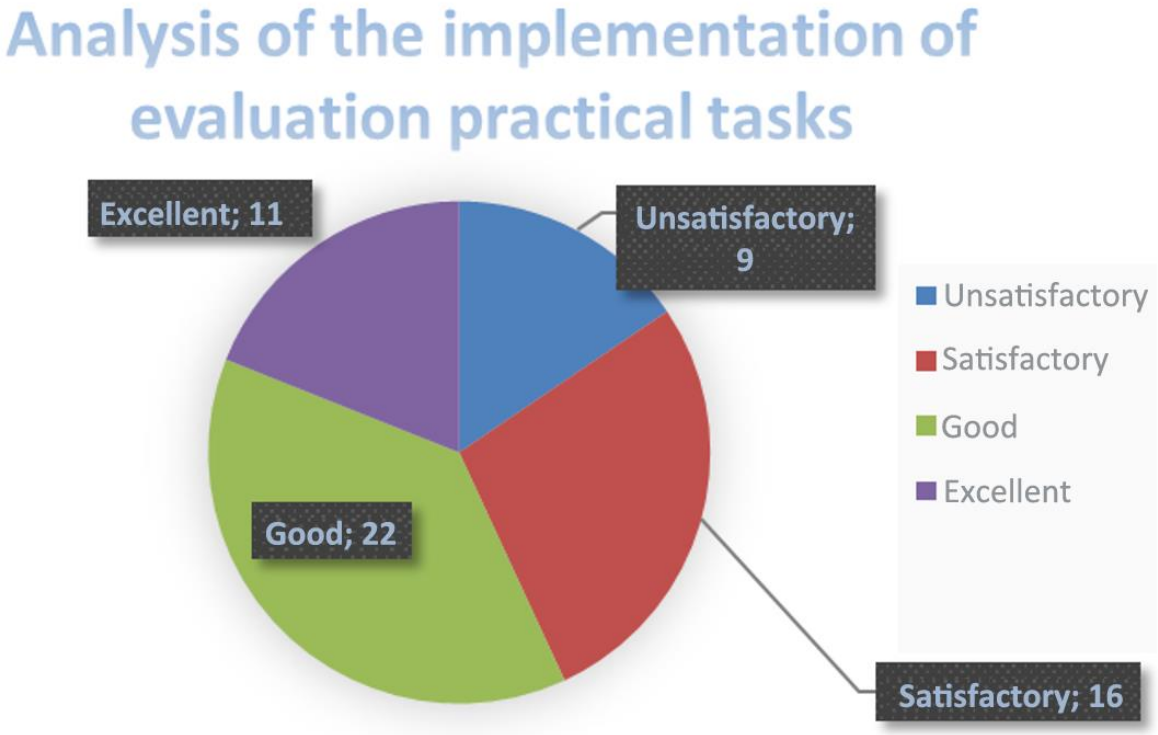

Figure 8. Students' results of the trial practical tasks.

To assess the cognitive criterion development at the initial stage, a review of primary knowledge obtained during the first semester of the 2nd, 3rd, and 4th-year students in professional English for IT was conducted. The findings indicate varying levels of proficiency in professional English among students: 1% demonstrated a high level, 35.9% an average level, and 64% a low level of knowledge. Additionally, the survey at this stage reveals that many students find studying professional English at the university challenging, highlighting the need to explore new methods for learning professional English at the university level.

During the experiment, the focus was on the cognitive criterion, which includes the solid and conscious knowledge necessary to study professional English at the university after completing the FLP course. This level, known as the linguistic professional level, requires a minimum of training in the field of: reading using language formulas, for example, speech etiquette, the ability to pass an interview in the language, etc.; listening (perception and understanding of professional texts by ear in general, guessing the meanings of terms); writing (the ability to write a professional letter, a greeting card, a questionnaire). Fragments chosen for analysis include terms (correlation of terms with their definitions, correlation of the beginning of a sentence with the end), answers to questions on a picture with professional terms; statements, answers to questions related to the text; working with terms; finding the passive

voice in the text; writing about oneself and one's profession. Students are offered a comprehensive test that assesses reading and writing skills. The results of the experiment indicate that not all students can cope with a comprehensive test containing professional tasks in English.

4. DISCUSSION

The findings of this study highlight the effectiveness of practical tasks in teaching professional English to IT students. The use of task-based learning (TBL), grounded in real-world programming concepts, led to marked improvements in students' comprehension, vocabulary acquisition, and application of technical language. This aligns with the broader theoretical framework of English for Specific Purposes (ESP), an approach to language instruction that focuses on developing learners' abilities to use English in specific academic or professional domains. In ESP, authentic and contextualized learning materials are known to significantly enhance language acquisition and learner engagement (Hyland, 2022). The central aim of the research is to determine whether practical tasks tailored to IT students' academic and professional needs could support the development of their professional English. The results strongly support this hypothesis. Students in the experimental group who engaged with programming-based tasks outperform the control group across several cognitive and performance metrics. These metrics include vocabulary retention, comprehension accuracy, and language use in simulated professional contexts. These outcomes are consistent with the work of Rodríguez-Peñarroja (2022), who found that task-based learning in ESP settings enhances student motivation and learning effectiveness by embedding language instruction within meaningful, discipline-specific contexts. One of the main contributing factors to the success of practical tasks in this context is increased student motivation. Motivation is a critical determinant of language learning outcomes (Csizér & Illés, 2020). When students recognize the immediate applicability of what they are learning, especially in relation to their future careers, they become more invested in the learning process. The practical tasks in this study are directly tied to common IT tasks, such as interpreting code, writing algorithms in plain English, and understanding key programming terminology. These tasks not only enhance language skills but also deepen technical understanding. This dual benefit supports (Bender, 2024) perspective that language learning in ESP contexts should not be isolated from content learning. Instead, it should integrate both to develop holistic communication competence. Further evidence of effectiveness comes from the observed improvement in students' ability to understand and use technical terms accurately. This is crucial in IT fields where miscommunication due to language barriers can lead to project delays or errors. ESP instruction that focuses on precise terminology, as emphasized by Stojković (2021), ensures students are equipped with the linguistic tools necessary for success in international and interdisciplinary environments. For example, students are asked to explain algorithm-related vocabulary in plain English or apply it within simplified documentation exercises that reflect actual workplace requirements. Moreover, students' responses in the surveys indicate a strong preference for practical tasks over traditional learning materials. Approximately 82% of participants in the experimental group report that the tasks help them better understand both language and content, and many appreciated the hands-on, applied nature of the exercises. These responses reflect the findings of Bracaj (2014) and Rustamov (2023), who argue that learner-centered methodologies and authentic materials increase motivation and promote autonomous learning. The structure of the tasks - combining definition, contextual use, and application - is instrumental in facilitating deeper learning. Each task follows a consistent format that reinforces technical vocabulary and functional language skills, such as writing, reading, and critical thinking. For instance, one task requires students to define a programming term (e.g., "loop"), use it in context, and then describe a related function in code using plain English. These types of multi-modal tasks align with the principles of communicative language teaching and ESP pedagogy, which prioritize relevance, interaction, and application (Basturkmen, 2021). It is important to contextualize these findings within the broader educational landscape in Kazakhstan and similar contexts. As President Tokayev has emphasized, developing the IT sector is a national priority. For Kazakhstan to attract global technology firms and participate effectively in the digital economy, its workforce must be proficient in

both technical and linguistic competencies. The results of this study provide actionable insights for university-level curriculum designers, suggesting that integrating ESP with IT training can prepare students more effectively for global employment opportunities. Nevertheless, the study is not without limitations. Firstly, the sample is drawn from a single institution, which may limit the generalizability of the findings. The relatively short duration of the experiment (10 weeks) also means that long-term retention and application of language skills cannot be assessed. Future research should consider longitudinal studies to assess the sustainability of the language gains observed. Additionally, expanding the sample to include students from multiple universities and varying levels of English proficiency can yield more robust insights. Another limitation involves the relatively basic initial level of English among participants. As indicated in the results, 64% of the students demonstrate low proficiency at the outset. This finding highlights the need for a dual-track approach where ESP instruction is supplemented by foundational general English support. It also supports the view of Basturkmen (2021), who emphasizes the importance of balancing domain-specific instruction with the foundational linguistic competencies necessary for effective learning. Despite these limitations, several pedagogical implications arise from this study. First, instructors should be encouraged to co-develop ESP materials with content specialists in IT. This collaboration ensures that tasks are both linguistically appropriate and technically accurate. Second, educational institutions should invest in teacher training programs that equip language instructors with the skills to teach ESP, particularly in STEM fields. Finally, there is a need to explore digital and blended learning environments for ESP. Given the rise of smart learning platforms and AI-assisted language tools, future research could investigate how these technologies can be integrated into practical task design to further support learner autonomy and engagement. In conclusion, this study affirms the value of practical, context-driven tasks in the teaching of professional English for IT students. The evidence suggests that when language instruction is aligned with professional content and real-world applications, student motivation, comprehension, and performance improve. This approach not only meets current educational demands but also contributes to the professional readiness of graduates entering the global IT workforce. Ongoing research—particularly comparative, longitudinal, and cross-institutional studies—will be essential to further refine and scale these methods for broader impact.

5. CONCLUSION

Based on the analysis of the experimental work results, there is a noticeable increase in the indicators for the experimental groups compared to the control groups. Students in the 2nd, 3rd, and 4th years achieved the highest scores when evaluating the quality of practical tasks in professional English within the experimental groups. Therefore, the findings of the experimental work support the hypothesis that practical tasks are effective in teaching professional English in the IT field, contributing to the development of students' professional competence at an agricultural university. The possibility of generalizing the results obtained to other academic disciplines and groups of students requires further study. The inclusion of more objective indicators and performance-based assessments could improve the reliability of future research.

This study opens avenues for further research considering these limitations. Comparative studies allow for the examination of the effectiveness of practical tasks in the IT field and among different student groups. Studying how language proficiency, motivation, and strategies affect vocabulary learning in practical tasks will help better understand how these factors interact. Finally, future research may explore the effectiveness of digital tools in developing productive conversational proficiency in technical vocabulary in a second language, as research in this area is currently limited. Future investigations may also assess the efficacy of digital tools in developing productive spoken knowledge of technical vocabulary in a second language, as this area remains underdeveloped in the existing literature.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The Ethical Committee of the L.N. Gumilyov Eurasian National University, Kazakhstan has granted approval for this study on 7 November 2022 (Ref. No. № 2117-п)
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Address of the Head of State Kassym-Jomart Tokayev to the People of Kazakhstan. (2023). *Official website of the President of the Republic of Kazakhstan.* Retrieved from https://www.akorda.kz/en/addresses/addresses_of_president

Alsamani, A.-A. S., & Daif-Allah, A. S. (2016). Introducing project-based instruction in the Saudi ESP classroom: A study in Qassim University. *English Language Teaching, 9*(1), 51-64. https://doi.org/10.5539/elt.v9n1p51

Alshayban, A. (2022). Teaching English for specific purposes (ESP) to Saudi Arabian banking employees. *Language Teaching Research Quarterly, 27*, 1-18. https://doi.org/10.32038/ltrq.2022.27.01

Basturkmen, H. (2021). ESP research directions: Enduring and emerging lines of inquiry. *Language Teaching Research Quarterly, 23*(1), 5-11. https://doi.org/10.32038/ltrq.2021.23.02

Beckett, G., & Gulbahar, F. (2019). *Global perspectives on project-based language learning, teaching, and assessment: Key approaches, technology tools, and frameworks* (1st ed.). New York: Routledge.

Bender, S. M. (2024). Awareness of artificial intelligence as an essential digital literacy: ChatGPT and Gen-AI in the classroom. *Changing English, 31*(2), 161-174. https://doi.org/10.1080/1358684X.2024.2309995

Bracaj, M. (2014). Teaching English for specific purposes and teacher training. *European Scientific Journal, 10*(2), 40–49.

Cambridge English. (2022). *Cambridge English proficiency test report.* Cambridge: Cambridge University Press & Assessment.

Csizér, K., & Illés, É. (2020). Helping to maximize learners' motivation for second language learning. *Language Teaching Research Quarterly, 19*, 19-31. https://doi.org/10.32038/ltrq.2020.19.02

Ellederová, E. (2023). Rhetorical strategies used by information technology students in in-class presentations. *IAFOR Journal of Education, 11*(1), 121-141. https://doi.org/10.22492/ije.11.1.07

Ezhova, N. (2020). Use of project method in learning the professional english language by law students. *Courier of Kutafin Moscow State Law University (MSAL)), 11*(1), 90-96.

Galskova, N. D. (2023). Cultural subjectivity of methodological science as the basis of professional and methodological training of foreign language would-be teachers. *MCU Journal of Philology Theory of Linguistics. Linguistic Education, 51*(3), 147–154.

Goźdź-Roszkowski, S. (2021). Corpus linguistics in legal discourse. *International Journal for the Semiotics of Law, 34*(5), 1515–1540. https://doi.org/10.1007/s11196-021-09860-8

Hyland, K. (2022). English for specific purposes: What is it and where is it taking us? *ESP Today-Journal of English for Specific Purposes at Tertiary Level, 10*(2), 202-220. https://doi.org/10.18485/esptoday.2022.10.2.1

Konrad, M. (2000). Corpora in language teaching: Advantages and challenges. In A. Wichmann, S. Fligelstone, M. McEnery, & G. Knowles (Eds.), Teaching and Language Corpora. In (pp. 22–37). London: Longman.

Lourido-Badía, I. (2023). Analysis of English for specific purposes materials: Sports sciences and psychology ESP materials in the EFL classroom. *Journal of Teaching English for Specific and Academic Purposes, 11*(3), 777-792. https://doi.org/10.22190/JTESAP231018058L

Marušić, B. (2023). Multi-word expressions in annual reports of American and British corporations: A corpus-based diachronic study. *Journal of Teaching English for Specific and Academic Purposes, 11*(3), 793-811. https://doi.org/10.22190/JTESAP230823059M

Rodríguez-Peñarroja, M. (2022). Integrating project-based learning, task-based language teaching approach and YouTube in the ESP class: A study on students' motivation. *Teaching English with Technology, 22*(1), 62-81.

Rustamov, I. T. (2023). Guidelines for developing effective materials for language learning. *American Journal of Research in Humanities, Social Sciences & Arts*, *9*(1), 1–10.

Salmani-Nodoushan, M. A. (2020). The role of writing in ESP: From theory to practice. *Journal of English for Academic Purposes*, *45*, 100859.

Slater, T., & Tammy, I. (2020). Needs assessment and learner evaluation in ESP: A student-centered approach. In G. Beckett & T. Slater (Eds.), Global Perspectives on Project-based Language Learning, Teaching, and Assessment: Key Approaches, Technology Tools, and Frameworks. In (pp. 120–145). Bristol, UK: Equinox Publishing

Stojković, N. (2020). Teaching persuasiveness in legal English. *ASp. la revue du GERAS*, (77), 48-62. https://doi.org/10.4000/asp.6344

Stojković, N. (2021). *Theoretical considerations for teaching foreign languages in university education settings, corpus analysis for language studies at the university level.* Newcastle upon Tyne, UK: Cambridge Scholars Publishing.

Stojković, N. (2023). *The potential of corpora in language teaching: Transforming foreign language education.* Newcastle upon Tyne, UK: Cambridge Scholars Publishing.

Appendix 1.

Appendix:

Tasks for experimental group

Programming

Task 1. Programming language-.....?

a) Its own alphabet, a special language with certain service words;

b) A language composed using the Kazakh alphabet;

c) The Russian alphabet and the compiled language;

d) It is a compiled language of the English alphabet;

e) Through a graphical language.

Task 2: Answer these questions about programming.

1. What does programming mean?

_____

_____

2. What types of programming do you know?_____

_____

3. What does programming code mean for solving problems and creating projects?

_____

_____

Task 3. Match definitions with the meaning

A data type that describes integers …, ...

a) integer (int); b) float; string (str); c) complex; d) None(null).

A data type that describes real numbers

a) Float; integer (int); b) string (str); c) complex; d) None(null).

A data type that describes string data

a) string (str); b) float; integer (int); c) complex; d) None(null).

int (5.45678+ 6.45678) – output the correct answer:

a) 11; 11.91356; b) 11.913; c) 11.9 11.91.

float (5.45678+ 6.45678) - output of the correct answer:

a) 11.91356; b) 11.19; c) 11.913;11.91.

Task 4. Circle the right variant. Input operator in Python, C++

a) input (), cin (), scanf () b) output (), cout () c) print (), printf () d) write (), private () e) read (), public ()

Task 5. Output operator in Python, C++

a) print (), printf (), cout (); b) output (), write (); c) input (), cin (), scanf (); d) write (), private (); e) read (), public ().

Task 6. Function of raising the number x to the power of y:

a) pow (x, y); b) double pow (double x, double y); c) pow (double x, double y); d) doublex(doubley).

Task 7 V.y = cosx/ sinx + tgx Writing an expression in Python

a) y = math.cos(x) / math.sin(x) + math.tan(x); b) y = math. (co(x) / sin(x) +tan(x)) c) y = math.cos(x) // math.sin(x) + math.tan(x)

d) math.cos(x) // math.sin(x) + math.tan(x) = y; e) y = cos(x). math / sin(x). math+ tan(x). math.

Task 8. for i in range (1,10): print (i) Write a verbal algorithm for this code: The result of the loop statement in the Python programming language: a) 1,2,3,4,5,6,7,8,9; b) 1,10; c) 1,11; d) 0,1,2,3,4,5,6,7,8,9; e) 1,2,3,4,5,6,7,8,9,10

Task 9. To terminate the cycle, the following procedure is applied...

a) break b) pass c) continue d) next e) switch

To continue the cycle, the following methods are used...

a) continue b) pass c) break d) next e) switch

Task 10. The DISCRETENESS property of algorithms means.

a) the ability to divide the information processing process into simpler stages.

b) Unambiguousness of the execution of a separate step of information transformation.

c)The ability to obtain the desired result with a given input information for a specific number of steps.

d)Suitability of the algorithm for solving a certain class of problems.

e) Ability to format the results in the form of a program.