


## THE IMPACT OF PROBLEM-BASED LEARNING ON TEACHING THE ASPECT OF ORGANIZATION IN ESP WRITING

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b> Received: March 6, 2026 Revised: April 16, 2026 Accepted: April 25, 2026 Published: April 30, 2026</p> <p><b>Keywords:</b> ESP writing, Global and Local Writing Aspects Organization, Problem Based Learning</p>	<p>The rapidly evolving demands of the global workplace require higher education to move beyond traditional rote learning toward methods that mirror real-world professional challenges. By placing students at the center of authentic scenarios, problem-based instruction serves as a bridge between classroom theory and the complex communication tasks required in specialized careers. Problem-based instruction was developed to foster students' intrinsic motivation, problem-solving and collaboration skills, creativity, as well as their capacity for independent research, analysis, and reasoning. The research presented in this dissertation sought to investigate the extent to which problem-based instruction enhances the acquisition of the global aspect of writing organization in English for Specific Purposes (ESP) courses. This focus is particularly relevant, as prior studies rarely examine specific writing components, instead tending to address writing development in a more general sense. In accordance with the defined research problem, aim, and tasks, a causal method was applied in the study— a controlled experimental design with two groups. The group exposed to the experimental condition covered the basic features of business style through a previously designed teaching unit prepared according to the principles of structuring a problem-based lesson. The same content was taught in the control group, but through a lecture-demonstration instructional method. The results of the paired-samples t-test revealed that problem-based learning is highly beneficial model when the goal is to develop writing style in students learning English for Specific Purposes.</p> <p style="text-align: right;"><i>This is an open access article under the <a href="#">CC BY-SA</a> license.</i></p> 
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### INTRODUCTION

Problem-based learning (PBL) represents an instructional approach that places learners in situations where they must analyze authentic problems and collaboratively develop possible solutions. In such environments students actively construct knowledge through inquiry, discussion, and reflection rather than through passive reception of information. This

pedagogical model has been widely applied within disciplines like medicine, engineering, and social sciences, yet its implementation in foreign language education remains comparatively limited.<sup>1</sup>

Within the field of English for Specific Purposes (ESP), writing instruction often concentrates on improving general writing ability without paying sufficient attention to the development of individual components that constitute effective written communication. Writing competence, however, can be viewed as a combination of several interrelated aspects. These aspects are typically divided into global and local dimensions. Global aspects include elements such as organization, audience awareness, and clarity of purpose, while local aspects relate to grammatical accuracy, mechanics, and stylistic correctness.

Global aspects are particularly important because they reflect the writer's ability to structure ideas logically and communicate meaning effectively. Mackiewicz and Thompson (2024) define global aspects as those foundational to the document's overall success, such as argumentation, organization, audience awareness, and rhetorical purpose and state that there is a long-standing pedagogical belief that these aspects require higher-order cognitive processes, including analysis, synthesis, and evaluation. Because problem-based learning emphasizes critical reasoning and problem-solving skills, it may provide a suitable instructional framework for developing these global components of writing.

Although previous studies have explored the correlation between problem-based learning and language acquisition, there is still limited empirical evidence regarding its influence on specific dimensions of writing performance. Most research focuses on general writing improvement rather than examining how particular aspects of writing develop under different instructional conditions.

For this reason, the present study investigates the instructional effect of problem-based learning (PBL) on the organizational elements of writing within ESP courses. While previous research has extensively explored PBL's impact on general learner autonomy and vocabulary acquisition, there remains a critical gap in understanding how this pedagogical framework specifically shapes the structural coherence of specialized discourse. Organization plays a crucial role in written communication because it determines how ideas are structured and how effectively they are conveyed to the reader. However, in professional and business communication, "organization" is not merely a stylistic choice but a functional requirement for clarity and logical flow. This study moves beyond general writing outcomes to isolate how PBL's collaborative, inquiry-based nature allows students to navigate the complex rhetorical demands of ESP, offering a novel perspective on developing structural proficiency in high-stakes professional contexts.

## LITERATURE REVIEW

### Problem-Based Learning in Language Instruction

Problem-based learning can be closely associated with communicative approaches to language teaching because it encourages the use of language as a tool for meaningful interaction. During problem-solving activities students exchange information, negotiate meaning, express opinions, and collaborate with peers in order to reach a solution. Through these interactions they naturally practice various language skills while focusing on communication rather than on isolated linguistic forms.

Recent literature emphasizes that PBL leads to the "authentic integration of language skills" because learners must process information from multiple sources to complete meaningful tasks. Research indicates that because PBL focuses on real-world problems, learners are pushed beyond rote memorization to "negotiate meaning," using the target language as a functional tool rather than just a subject of study (Gabuardi, 2021). Modern frameworks describe PBL as a "holistic approach" where students take an active role, planning and evaluating their own learning while collaborating in small groups. Scoping reviews of PBL implementation consistently link the method to perceived improvements in communication skills, as students are required to discuss solutions and engage in peer-to-peer discourse (Ghani et al., 2021).

Uchihara et al. (2023) conducted a meta-analysis proving that "incidental" (subconscious) acquisition - the core of Krashen's theory - is highly effective when students are engaged in meaning-focused input activities. In PBL environments, where the "perceived goal is task completion" rather than learning a specific word or rule, students subconsciously acquire the linguistic tools needed to solve the problem which suggests that when learners are immersed in authentic, problem-driven tasks, they prioritize the message over the form. This shifts the focus from conscious 'learning' to subconscious 'acquisition,' as students naturally internalize linguistic structures through their functional application in collaborative inquiry (Uchihara et al., 2023).

Another important characteristic of problem-based learning is its potential to increase learner motivation. Instruction organized around authentic problems encourages students to participate actively in the learning process and to take responsibility for their own progress. When learners perceive classroom tasks as meaningful and relevant, they are more likely to demonstrate intrinsic motivation and sustained engagement. Almulla (2020) conducted an influential study which confirmed that the PBL approach effectively engages students by allowing them to take ownership of their learning. The research found that when students are tasked with solving authentic problems, their intrinsic motivation increases because they are no longer passive recipients of information but active investigators.

### PBL and Other Student-Centered Approaches

Several instructional approaches share certain similarities with problem-based learning. Task-based learning, inquiry-based learning, and project-based learning all

emphasize active participation and collaboration among students. However, these approaches differ in terms of the role of the teacher and the structure of learning activities.

In the context of language learning, Gonzalez-Lloret (2020) reinforces that task-based language learning is often more linguistically structured. While TBLT focuses on completing a task to practice specific communicative functions, PBL uses the language as a tool to solve a larger, non-linguistic problem. The "predetermined sequence" you mentioned is a hallmark of TBLT (Pre-task, Task cycle, Language focus), whereas PBL is more non-linear.

Aditomo and Klieme (2020) explain that while both promote active learning, inquiry based learning is often more "guided." In IBL, the teacher often provides the research question or leads students toward a specific scientific conclusion or "truth." In PBL, the problems are typically "ill-structured" or "messy," meaning there is no single right answer, and the students must define the boundaries of the problem themselves with minimal teacher direction.

Project-based learning and Problem-based learning involve complex tasks that require collaboration and research. While both are often confused, Indrawan et al. (2020) clarify that the fundamental difference lies in the "end goal." In Project-Based learning, the driving force is the creation of a product (e.g., a model, a business plan, or a presentation). In contrast, Problem-Based Learning is inquiry-driven, where the "problem" is a vehicle for acquiring new knowledge, and the analysis of the problem is more critical than the final output.

## RESEARCH METHOD

### Aim of the Study

The primary objective of this research was to examine how different instructional approaches influence the development of writing skills in ESP courses. More specifically, the study aimed to determine whether the use of problem-based learning improves students' ability to organize written texts compared with traditional lecture-based instruction.

### Hypotheses

#### General hypothesis:

H0: The implementation of problem-based learning leads to better learning outcomes in the organizational aspect of ESP writing compared with traditional instruction.

#### Specific hypotheses:

H1: There is no statistically significant difference between the pre-treatment and post-treatment measurements in the experimental group regarding the organization element of writing.

H2: There is no statistically significant difference between the pre-treatment and post-treatment measurements in the control group regarding the organization element of writing.

### Procedure

At the beginning of the study students completed an initial writing task that served as a diagnostic test of their ability to compose professional writing. The post-treatment measurement was conducted after the completion of the instructional period.

Students were given 45 minutes to complete each writing task. The initial assignment required students to write a covering letter, while the final assignment involved writing a letter of inquiry. The length of the texts was limited to approximately 150 words in order to ensure comparable writing conditions for all participants.

The group exposed to the experimental condition received instruction organized according to the principles of problem-based learning. Teaching units followed a structured sequence that included problem presentation, problem definition, hypothesis generation, analysis of possible solutions, and final conclusions.

The control group studied the same content through traditional lecture-based instruction. The teacher explained relevant concepts and provided examples of effective and ineffective business writing but did not engage students in structured problem-solving activities.

#### Participants

The study involved 126 second-year students enrolled in a Business English course. Sixty-four students formed the experimental group, while sixty-two students constituted the control group. All participants were studying at the Novi Sad School of Business and attended the course Business English II.

#### Assessment Instruments

Aligned with the research problem and questions, the study utilized a causal research design, employing a parallel-group experimental approach. Assessment procedures included both initial and final measurements, with student performance evaluated using an analytic scoring rubric

Given the specific linguistic structure examined in the study, a written letter was selected as the instruments for both the pre-treatment and post-treatment measurements. To increase objectivity in writing assessment, essay length was limited, as restricting the number of words helps standardize writing conditions. Therefore, students were instructed to write compositions not exceeding 150 words, within a 45-minute time limit. Topics were taken from the students' textbook. In the initial test, students wrote a covering letter, while in the final test they wrote a letter of inquiry.

Current research confirms that analytic rubrics are more useful for determining the proficiency levels of L2 learners because they provide diagnostic information that holistic scores lack (Tomas et al., 2019). Analytic rubrics allow for the creation of a "profile" of specific student strengths and weaknesses, which is essential for EFL learners whose writing components (like grammar vs. organization) may develop at different rates (Tomas et al., 2019). These scales are considered more appropriate when the goal is to provide "assessment for learning," as the isolated traits provide additional data points that help students self-correct

and improve their quality of writing. The transparency and explicitness of criteria in analytic rubrics reduces the use of irrelevant criteria by markers and helps ensure objective fairness in the assessment process (Tomas et al., 2019)

In line with the research question, an analytic scoring scale was used, in which audience awareness represented only one of the evaluated elements. Students' texts were assessed before and after the experimental program, with scores ranging from 1 to 5 for each of the following aspects: style, organization, grammar, mechanics, purpose, and audience. After developing problem-based learning (PBL) teaching units for each aspect and defining their key characteristics, descriptors for each score on the scale were formulated based on these characteristics.

Because social science research often relies on a single method that may involve certain limitations, triangulation was used to enhance the reliability of the results. Triangulation involves integrating different data sources, theories, methods, or researchers to obtain a more precise description of social phenomena. In this study, researcher triangulation was applied. Along with the author, two experienced Business English instructors were involved in the evaluation process. To ensure consistency, the assessors discussed the scale and agreed on the interpretation of the criteria before the evaluation process. Inter-rater agreement among the three evaluators was analyzed using factor analysis and multiple correlation (R) appropriate for non-parametric data. The tables containing the factor analysis results are cited in the paper but not included; however, they are available from the author upon request.

## RESEARCH FINDINGS

The results of the initial and final tests across the entire sample indicate that the achievements of students in the experimental group differ statistically significantly from those of the control group (Table 1).

Table 1. Results of the paired-samples t-test between the initial and final measurements for the organization aspect in the experimental and control groups.

Group	Test	N	M	SD	t
Experimental	Initial	64	2.29	0.75	-9.52*
	Final	64	3.06	0.73	
Control	Initial	62	2.84	1.08	-0.47
	Final	62	2.88	0.94	

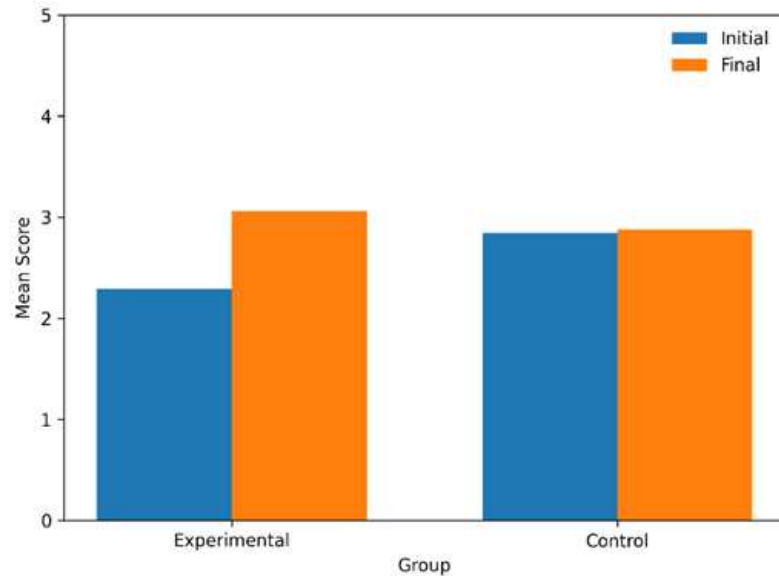


Fig. 1. Mean scores on the initial and final measurements for the organization aspect in the experimental and control groups

The results indicate that, in the initial measurement, the ideas presented in the writings of students in the group subjected to the experimental treatment (EG) were confused and disconnected, lacking logical sequence, and the content was only minimally supported by arguments. The essays produced at the initial measurement showed weak organization and insufficient unity, the absence of which caused difficulties in understanding a substantial part of the communication. In addition, constant repetition of errors was observed at the initial measurement.

In contrast to the students in the control group (CG), the group following the problem-based learning model demonstrated logical organization of content on the final test—the main ideas in the text were clearly highlighted, and the majority of the content was supported by valid arguments.

The aspect of organization comprised numerous sub-elements. Primarily, students were expected to learn to observe the principles of cohesion and coherence, which are essential for understanding and communicating ideas.

The final papers produced by the experimental group were easier to read and comprehend, as they followed a clear logical structure (e.g., chronological, spatial, or order of importance), with ideas organized in a systematic and coherent manner. EG students learned that coherence should be achieved both at the micro-level and the macro-level of the essay: at the paragraph level through the topic sentence and the concluding sentence, and at the essay level through the introductory paragraph, body paragraph(s), and concluding paragraph.

Thus, final papers in the EG were graded with higher marks according to the following criteria:

- the main idea is stated in a single sentence (topic sentence);

- examples or details supporting the main idea of the paragraph are provided;
- there is a sentence that summarizes everything in the form of a final thought at the end of the essay.

In order to improve cohesion in their papers, students in the EG learned to:

- use conjunctions or transitional phrases (transitional markers) to connect paragraphs and units within paragraphs according to specific logical relationships;
- repeat key words and, if direct repetition is too obvious, use synonyms or antonyms of the word they wish to repeat;
- use pronouns and demonstrative adjectives;
- use transitional sentences to connect paragraphs by taking an idea from the last sentence of one paragraph and using it to begin the next (dovetailing sentences);
- use parallel (coordinated) grammatical structures, that is, repeat sentence structure.

In addition to coherence and cohesion, the papers of students in the experimental group (EG) contained all the main or obligatory parts of a business letter: heading (letterhead), i.e., the sender's address; the date; the inside address; the salutation (opening greeting); the opening line; the subject line; the body of the letter; the closing line; the closing greeting; the signature; reference initials; and enclosures.

Building on the previous element of the organization aspect, students in the EG not only included all obligatory parts of the letter but also arranged them in one of the appropriate formats. Their written work demonstrates that students were familiar with all possible formats (traditional, full block, semi-block, block, square block, simplified), as well as the differences among them.

## DISCUSSION OF FINDINGS

The research findings demonstrate that Problem-Based Learning significantly enhances the organizational aspect of writing in English for Specific Purposes. This section interprets these results by situating them within the context of established pedagogical theories and prior empirical research.

The success of the PBL model in this study reinforces several key theoretical frameworks in language education. Firstly, the findings support the meta-analysis by Uchihara et al. (2023), which suggests that incidental acquisition is highly effective when students are engaged in meaning-focused tasks. In this study, EG students prioritized message over form, subconsciously internalizing linguistic structures through functional application. Secondly, the improvement in organizational coherence reflects what recent literature describes as the "authentic integration of language skills". By solving authentic problems, students used the target language as a functional tool rather than an isolated subject of study, a process also noted by Gabuardi (2021). Thirdly, The EG's progress may be attributed to increased intrinsic motivation. As Almulla (2020) observed, PBL engages students by allowing them to take ownership of their learning, transforming them from passive recipients to active investigators. Furthermore, the results support the pedagogical belief highlighted by Mackiewicz and

Thompson (2024) that global aspects require higher-order cognitive processes like analysis and synthesis. Mental Frameworks: PBL provided the necessary mental framework for students to master structural coherence because the method is designed to cultivate the reorganization and application of knowledge to novel contexts. Finally, the improvement is further attributed to the development of metacognitive strategies. The collaborative and inquiry-based nature of PBL helped students move through the planning, drafting, and revising stages of the writing process more effectively than traditional methods.

One of the most direct comparisons can be found in a study by Martinovic-Barbul (2026), which mirrors research design of this study but focuses on a different global aspect of writing. While the primary variable in this study was impact on organization, the other paper investigated the impact on audience awareness. Key outcomes have shown statistically significant improvement in logical flow and structural coherence for the PBL group, showing tone and document type fully matched the given audience. Main conclusions in both studies were made that PBL provides the framework for mastering "global" writing components. These require higher-order thinking skills—specifically analysis and synthesis—which are the natural outputs of a problem-solving environment.

In a comparative study of problem-based learning and traditional approaches in college English classrooms, Tang et al. (2020) utilized, much like this research, representative group presentations to evaluate how students discussed the "main idea and structure" of a text. It confirmed the observation that the instructor's shift from a lecturer to a "facilitator" or "problem-poser" is critical for student success in organizing complex thoughts. Interestingly, this study noted that if the teacher does not fully "restructure" their behavior (i.e., if they still lecture too much during the PBL session), the gains in expressive proficiency are minimized. This underscores the recommendation for a complete pedagogical shift rather than a surface-level application.

## CONCLUSION

The findings of this study demonstrate that Problem-Based Learning (PBL) is a highly effective instructional model for enhancing the organizational aspect of writing in English for Specific Purposes (ESP). While traditional lecture-demonstration methods showed no significant impact on student achievement, the PBL approach led to statistically significant improvements, transforming "confused and disconnected" initial compositions into logically structured professional texts. By engaging students in authentic, inquiry-driven tasks, PBL fosters the higher-order cognitive skills—such as analysis and synthesis—necessary to master global writing components like structural coherence and rhetorical purpose. Furthermore, the collaborative nature of PBL enhances metacognitive strategies, allowing students to successfully navigate the complex planning, drafting, and revising stages of the writing process.

Despite the significant outcomes observed, several limitations merit acknowledgment. First, the study's population was restricted to second-year students at a single institution (Novi Sad School of Business), which may constrain the generalizability of the findings to diverse academic settings or varying levels of linguistic proficiency. Furthermore, the temporal

parameters of the instructional period—specifically the 45-minute assessment window—precluded a longitudinal evaluation of skill retention and cognitive endurance. Finally, the scope of the writing tasks was confined to professional correspondence, namely covering letters and letters of inquiry. As such, these findings may not fully represent the rhetorical complexities inherent in the broader spectrum of specialized discourse required within the globalized workplace.

To build upon the current findings and address existing gaps in the literature, future research should broaden the scope of Problem-Based Learning (PBL) applications within English for Specific Purposes (ESP). Specifically, scholars should investigate the impact of PBL on more complex professional genres—such as technical reports, business proposals, and collaborative digital communications—to determine if the pedagogical benefits observed in professional correspondence extend to more cognitively demanding tasks. Furthermore, there is a critical need for longitudinal studies to assess the sustainability of organizational skill improvements and their subsequent transferability to authentic workplace environments. Future inquiries should also account for learner diversity by examining how varying levels of language proficiency and diverse socio-cultural educational backgrounds moderate the effectiveness of the PBL model. Finally, given the increasing digitalization of professional life, research should explore how digital PBL environments and asynchronous collaborative tools influence the structural coherence and rhetorical strategies of specialized discourse.

ESP instruction must prepare students to participate in specific professional cultures. Educators must adjust the complexity of problem-based instruction to suit the unique traits of their learners, including their language proficiency and available learning time. Focus on mastering the specific genres typical of the target discipline, such as business letters, to link texts to professional requirements.

## REFERENCE

- Aditomo, A., & Klieme, E. (2020). Forms of inquiry-based science instruction and their relations with learning outcomes. *International Journal of Science Education*.
- Almulla, M. A. (2020). The effectiveness of the project-based learning (PBL) approach as a way to engage students in learning. *SAGE Open*, 10(3).
- Fallas Gabuardi, V. M. (2021). Project-based learning: Boosting 21st century skills. *Estudios*, (43), 340–419.
- Almulla, M. A. (2020). The effectiveness of the project-based learning (PBL) approach as a way to engage students in learning. *SAGE Open*, 10(3).
- Ghani, A. S. A., Rahim, A. F. A., Yusoff, M. S. B., & Hadie, S. N. H. (2021). Effective learning behavior in problem-based learning: A scoping review. *Medical Science Educator*, 31(3), 1199–1211.
- Gonzalez-Lloret, M. (2020). Collaborative tasks for online language learning. *Foreign Language Annals*.
- Indrawan, E., Jalinus, N., & Syahril. (2020). Review of project-based learning and problem-based learning models. *Jurnal Psikologi Pendidikan & Konseling*.

- Mackiewicz, J., & Thompson, I. (2024). The global-local dualism in writing center studies. *Praxis: A Writing Center Journal*, 21(3).
- Martinovic-Barbul, I. (2026). The Impact of Problem Based Learning on Teaching the Aspect of Audience in ESP Writing. *EIKI Journal of Effective Teaching Methods*, 4(1).
- Tang, S., Long, M., Tong, F., Wang, Z., Zhang, H., & Sutton-Jones, K. L. (2020). A Comparative Study of Problem-Based Learning and Traditional Approaches in College English Classrooms: Analyzing Pedagogical Behaviors Via Classroom Observation. *Behavioral Sciences*, 10(6), 105.
- Tomas, C., Whitt, E., Lavelle-Hill, R., & Severn, K. (2019). Modeling Holistic Marks With Analytic Rubrics. *Frontiers in Education*, 4.
- Uchihara, T., Webb, S., & Yanagisawa, A. (2023). How effective is second language incidental vocabulary learning? A meta-analysis. *Language Teaching*, 56(1), 1–32