

Maja P. Stanojević Gocić*

Academy of Applied Technical and Preschool Studies, Niš, Serbia

 <https://orcid.org/0009-0008-6804-222X>

DEVELOPING ESP STUDENTS' SKILLS THROUGH FOSTERING THEIR STRATEGIC BEHAVIOUR

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Developing ESP students' skills through fostering strategic behaviour is increasingly recognized as essential for achieving higher learning outcomes. This paper investigates the effects of explicit and implicit strategy instruction on the development of ESP students' strategic behaviour and language skills. The study included 120 tertiary-level students divided into two experimental groups (explicit and implicit) and one control group. The explicit group received direct instruction in cognitive and metacognitive strategies, while the implicit group engaged in strategy use through task-based activities. Data were collected through pre-test and post-test language scores, a strategy questionnaire, and qualitative instruments. Results indicate that explicit instruction led to the greatest improvement in language performance and strategic awareness, while implicit instruction contributed to moderate gains. The findings highlight the importance of integrating structured strategy instruction into ESP curricula to foster self-regulated learning and transferable skills.

Key words: ESP, language learning strategies, metacognition, strategic behaviour

1. Introduction

In the context of English for Specific Purposes (ESP), developing students' strategic behaviour has become essential for fostering both language competence and practical skill development. As modern education moves away from the passive reception of content in traditional, teacher-centred instruction toward active, learner-centred approaches that consider individual learning preferences such as learning styles and strategies, cultivating strategic behaviour through metacognitive strategies is of utmost importance (Veenman et al., 2006; Wang & Cohen, 2023). In that sense, strategic behaviour, defined as goal-oriented, adaptive, and self-regulated learning, plays a crucial role in both academic success and professional competence (Zimmerman, 2002; Habók et al. 2022; Qiu et al., 2024; Teng, 2024; Sari et al. 2025).

* Academy of Applied Technical and Preschool Studies, Aleksandra Medvedeva 20, Niš, Serbia; e-mail: maja.stanojevic.gocic@akademijanis.edu.rs

This paper reports on an empirical study examining how explicit and implicit strategy instruction influence ESP students' strategic behaviour and language development. The study aims to explore whether structured pedagogical interventions can enhance students' use of cognitive and metacognitive strategies and improve their ESP performance. In doing so, the paper contributes to ongoing discussion on learner-centered instruction, particularly strategy-based teaching in ESP practice.

2. Theoretical Framework

2.1. Language Learning Strategies

Metacognitive strategies belong to the broader construct of general learning strategies and represent a subcategory of language learning strategies (LLSs). In a broader sense, learning strategies are regarded as specific thoughts and actions employed to enhance, facilitate, and improve the learning process. In this respect, learning strategies have been defined as "the special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information" (O'Malley & Chamot, 1990: 1). Similarly, Oxford (1990: 8) describes them as "operations employed by the learner to aid the acquisition, storage, retrieval, and use of information," as well as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations." Language learning strategies, more specifically, refer to the mental and communicative processes that learners deploy while learning and acquiring a second or foreign language (Ellis, 2008).

2.2. Classification of LLSs

Language learning strategies, as defined by O'Malley and Chamot (1990), are typically classified into cognitive, metacognitive, and socio-affective types of strategies. While cognitive strategies involve mental processes directly related to learning, metacognitive strategies refer to the awareness and regulation of cognitive processes, including self-regulation. Cognitive strategies are considered essential for language learning and commonly involve the manipulation and transformation of language by the learner (Oxford, 2011), and they are intended to enhance comprehension, acquisition, or retention (O'Malley & Chamot, 1990: 229), ranging from repeating to summarizing (Oxford 1990: 43). Cognitive strategies include practicing, receiving and sending messages, analyzing and reasoning, as well as creating structure for input and output (Oxford 1990: 69). Metacognitive strategies

encompass planning, monitoring, and evaluating the learning process, as they comprise two interrelated components: metacognitive knowledge and metacognitive regulation. In contrast, social strategies emphasize collaboration with others, whereas affective strategies involve managing one's emotions to enhance the learning process.

As metacognition is often viewed as an umbrella term encompassing metacognitive knowledge, metacognitive strategies, and metacognitive awareness, metacognitive knowledge and metacognitive regulation are generally regarded as distinct yet interrelated concepts (Schraw & Dennison, 1994; Veenman et al., 2006). Metacognitive knowledge refers to language learners' awareness of their cognitive strengths and weaknesses in language learning contexts and task performance, as well as their understanding of effective language learning strategies and their combinations or strategy orchestration (Stanojević Gocić et al., 2023). Metacognitive regulation, on the other hand, involves learners' ability to monitor, control, and adjust their cognitive processes to optimize language learning outcomes (Zimmerman, 1989).

2.3. Strategic Behaviour

Strategic behaviour in learning is rooted in Bandura's (1986) social-cognitive theory, which highlights the reciprocal interaction of personal, behavioural, and environmental influences. It is also grounded in self-regulated learning (SRL), the model proposed by Schunk and Zimmerman (1998) that outlines the role of metacognitive awareness in guiding effective learning processes. In this context, self-regulation refers to learners' ability to understand, monitor, and manage their own behaviour and reactions in interpersonal relations (Zimmerman, 2002). It fosters learner autonomy and supports the development of independent learning.

Since not all strategies are equally effective for addressing every language learning challenge, learners who consciously select, apply, and adapt strategies to meet task demands can be regarded as strategic learners who possess metacognitive knowledge about themselves as learners and about their learning approaches (Stanojević Gocić and Janković, 2019). Therefore, strategy adjustment requires knowing when and how to use a particular strategy or a combination of strategies from one's strategic repertoire to ensure effective strategy orchestration (Stanojević Gocić, 2024), which refers to the coordinated use of clusters or repertoires of strategies, rather than a single strategy, in a goal-oriented and purposeful manner (Cohen, 2007). In addition, learners with well-developed metacognitive monitoring skills can identify

areas in which their comprehension is limited and take deliberate steps to bridge gaps in their knowledge (Stanojević Gocić et al., 2023). By remaining aware of their cognitive activities and engaging in metacognitive processes, learners gain valuable insight into their strengths, weaknesses, and learning preferences, ultimately enhancing their overall language proficiency (Cohen, 2011).

2.4. Metacognitive Strategies and Self-Directed Learning

Metacognitive strategies significantly contribute to the development of self-directed language learning, referring to the active development of students' responsibilities, which is closely related to the concept of learner autonomy. As Oxford (1990: 10, 238-239) explains, the terms self-directed language learning and learner autonomy are often applied in relation to LLSs, emphasizing that the important researcher in this field Holec (1981) used self-direction to describe the learning mode, situation, or techniques and autonomy to refer to the learner's attitude. Furthermore, the concept of learner autonomy involves learners' control over the content, methods, and pace of their learning (Benson, 2011), as well as their capacity to make informed, deliberate choices in pursuit of personal learning goals. As a result, metacognitive strategies are employed to monitor language learning processes as cognitive mechanisms, enabling learners to effectively plan and regulate these processes in establishing learning objectives, selecting materials, choosing strategies, monitoring progress, and evaluating outcomes within problem-solving and decision-making processes, which would help them to become autonomous and self-directed language learners who rely less on their teachers, acquire the language independently, and use acquired skills outside the classroom. Furthermore, metacognitive strategies involve selective attention, focusing on specific aspects of learning tasks, such as checking comprehension in receptive or productive language activities (O'Malley & Chamot, 1990: 46).

2.5 Explicit and Implicit Strategy Instruction and Training

Strategic behaviour can be cultivated through both explicit and implicit forms of strategic instruction. Explicit strategy instruction involves directly teaching learners how to plan, monitor, and reflect on their learning processes. It typically includes modeling (or directly presenting the model of cognitive and metacognitive strategies, and explicitly showing students what to learn, and how to learn a skill), guided practice, and structured feedback. According to Oxford (1990: 203–208), the key steps

in "training in strategies" include identifying learners' needs and available time, selecting appropriate strategies, considering integration and motivation, conducting "completely informed training," and finally, evaluating and revising the strategy training process. Through modeling and scaffolding practices, teachers can foster learner autonomy by guiding students in setting learning objectives, evaluating comprehension, and adjusting their approaches when difficulties arise. Reflective journals, self-assessment checklists, and peer collaboration tasks have also proven effective in encouraging this strategic development (Zimmerman, 2002). Implicit strategy instruction, on the other hand, integrates strategy use into communicative tasks without overt explanation, thereby fostering more natural and intuitive strategy acquisition (Sweller, 1988).

Strategy training represents a form of pedagogical intervention designed to provide strategic input and enhance strategic knowledge on effective deployment of strategies. A concrete example would involve diagnosing students' existing strategy use through a think-aloud procedure, giving learners tasks and asking them to explain the strategies they would use, and introducing new strategies with practice (Oxford, 1990: 208, 2011). Thus, students who receive explicit metacognitive training consistently outperform their peers in problem-solving tasks, demonstrating greater persistence (Chamot & O'Malley, 1994; Dignath & Büttner, 2008), while integrating planning and monitoring cues improves students' higher-order thinking (Anthonysamy et al., 2025).

In ESP classrooms, research has shown that the effective application of reading strategies contributes to text comprehension, solving general and specific reading tasks, and that strategic readers could engage with domain-specific texts and comprehend them effectively (Amirian, 2013). In ESP contexts, language skills are implemented in domain-specific situations (Basturkmen, 2010), while strategy use facilitates acquiring specific and technical vocabulary, as well as grammar used in a specific study field. Consequently, strategy instruction can bridge the gap between language competence and professional communication or provide learners with models of metacognitive strategy use that can be systematically incorporated into instruction through strategy training (Oxford, 1990) or strategies-based approach (Cohen, 2011), facilitating language learning and enabling learner autonomy.

3. The Current Study

3.1. Objectives and Research Questions

This study aims to examine the impact of explicit and implicit strategy instruction on ESP students' language performance and strategy use. Drawing on the theoretical framework of self-regulated learning and strategy instruction, two research questions were formulated:

RQ1: Does explicit strategy instruction lead to greater improvement in ESP performance compared to implicit instruction and traditional teaching?

RQ2: How does strategy instruction affect the use of cognitive and metacognitive strategies, as the basic strategies that determine strategic behaviour?

Based on these questions, the following hypotheses were proposed:

H1: Students receiving explicit strategy instruction will demonstrate greater improvement in ESP performance than those in the implicit and control groups.

H2: Both experimental groups will report increased use of cognitive and metacognitive strategies compared to the control group.

H3: The implicit instruction group will show moderate skill improvement, less pronounced than the explicit group in terms of language skills and strategy awareness.

3.2. Context

The study was conducted within the English for Specific Purposes (ESP) course at the Academy of Applied Technical and Preschool Studies, Department in Vranje, Serbia. The course is a compulsory component of the undergraduate study programme and is designed to develop students' general and professional English language skills. The instruction combines language-focused activities with communicative and content-based tasks, including work on professional vocabulary, reading comprehension, grammar, and written and oral communication. The students participating in the study were enrolled in regular undergraduate ESP classes and their English proficiency was approximately B1 level according to the Common European Framework of Reference for Languages (CEFR). The classes were organized in groups of approximately 50 students each. The course was delivered in accordance with the institution's regular ESP curriculum and the instructional intervention was incorporated into it without altering the overall course objectives.

3.3. Participants

The sample consisted of 120 undergraduate ESP students from the Academy of Applied Technical and Preschool Studies, and comprised 72 male students (60%) and 48 female students (40%). The mean age of the group was 20.8 years. The respondents in the research were enrolled in the same ESP course,

The sample size is adequate for experimental research in ESP pedagogy, as it ensures reliable group-based statistical analysis (Mackey and Gass, 2016). Students were divided into three equally sized groups (40 students per group) according to the results of the placement test administered at the beginning of the semester. Prior to the intervention, all participants completed a placement test designed to determine their initial level of English proficiency, and to ensure that the groups were approximately equivalent in terms of language ability.

3.4. Methodology

3.4.1. Instruments

Instruments in the research included ESP language tests, a strategy questionnaire and reflective journals. Thus, a mixed-methods approach was used to include both quantitative and qualitative methods. Two ESP language tests designed by the instructor for the purpose of this study (containing vocabulary, reading comprehension, and writing tasks assessing proficiency and accuracy) served as pre-test and post-test instruments.

A shorter version of Oxford's (1990) *Strategy Inventory for Language Learning* (SILL) was adapted to measure cognitive and metacognitive strategy use. While the original SILL divides learning strategies into six groups (cognitive, metacognitive, memory related, compensatory, affective, and social), the adapted questionnaire (named *Strategic Behaviour Questionnaire* by the instructor) focuses exclusively on the cognitive and metacognitive categories. Participants completed the same questionnaire before and after the instructional intervention. To further promote self-reflection, the study also utilized reflective journals.

3.4.2. Procedure

The study included two experimental groups and one control group. Before the ten-week instructional period, all participants completed a language pre-test and a strategy questionnaire to establish their initial language proficiency and strategy use. The participants were then assigned to one of two experimental groups or a control

group. During the ten-week instructional period, the explicit instruction group received explicit strategy instruction, focusing on the direct teaching of strategies through demonstrations, modeling, guided practice, and reflection. These activities were implemented through interactive sessions and were supported by reflective journals. In contrast, the implicit instruction group received implicit strategy instruction, in which strategy use was incorporated into discussions and task-based activities without explicitly identifying or explaining the strategies as such. Students in this group were encouraged to apply strategies incidentally while completing their tasks and keeping reflective journals. The control group received traditional instruction without explicit emphasis on strategy development or strategy training.

During the same ten-week period, all three groups participated in problem-solving tasks relevant to the course, such as business case analyses and negotiation simulations. The way strategy instruction was incorporated into these activities differed across the groups: strategies were explicitly taught and practiced in the explicit instruction group, while they were implicitly embedded in tasks in the implicit group.

Immediately after the ten-week instructional period, all participants completed the same language post-test and the same strategy questionnaire administered at the beginning of the study. Thus, the pre-test and initial questionnaire were administered before the intervention, whereas the post-test and follow-up questionnaire were administered after the ten-week instructional period, enabling comparison of changes in language performance and strategy use across the three groups.

3.4.3. Data analysis

The study employed both quantitative and qualitative methods of data analysis. The language pre-test and post-test scores were analyzed using descriptive statistics (means and standard deviations) and one-way analysis of variance (ANOVA) to examine differences in language performance among the three groups. Comparisons between pre-test and post-test results were conducted to determine changes in participants' language performance following the ten-week instructional period.

The data obtained from the strategy questionnaire were analyzed quantitatively using SPSS. Frequencies, percentages, means, and standard deviations were calculated for the questionnaire items to determine the reported frequency of students' strategy use. The questionnaire results were compared across the three groups and between the pre-intervention and post-intervention administrations to examine

changes in students' reported strategy use following the instructional period. ANOVA was used to determine whether statistically significant differences existed among the groups.

Qualitative data obtained from students' reflective journals were analyzed using thematic analysis. Following Braun and Clarke's (2006) approach, the journal entries were examined to identify recurring patterns, categories, and themes related to students' experiences with strategy instruction and their use of learning strategies during the intervention. The qualitative findings were used to complement the quantitative results by providing insight into how students perceived and experienced the use of strategies during the ten-week instructional period.

4. Results

The findings indicate differences in the effectiveness of explicit and implicit strategy instruction in promoting language proficiency (measured by pre-test and post-test performance) and metacognitive awareness among tertiary-level ESP students. The quantitative analysis examined changes in language test performance and reported strategy use, while the qualitative analysis of students' reflective journals provided insights into their learning experiences, perceptions, and metacognitive development. Taken together, these findings contribute to the broader field of ESP pedagogy and provide practical implications for the design of strategy-based instruction.

4.1. Quantitative Results

This analytical approach was used to examine if changes in students' performance were associated with the instructional intervention rather than random variation (Mackey & Gass, 2016). Two language tests, consisting of pre-test and post-test measures, were administered. The tests were designed by the instructor, whereas the difficulty level and equivalence between the pre-test and post-test instruments were evaluated using Magic School AI. Since the tests were designed by the instructor, MagicSchool AI (MagicSchool AI, 2025) was used as a supplementary tool to review the difficulty and content alignment of the test items and to support the comparison of the pre-test and post-test versions. The final selection and revision of the items were conducted by the instructor. The tests included tasks assessing reading comprehension, vocabulary use, and writing accuracy. Language test scores were used as indicators of language proficiency and performance, whereas the strategy

questionnaire assessed students' reported strategy use and metacognitive awareness. Reflective journals provided complementary qualitative evidence concerning students' perceptions and learning experiences.

The one-way ANOVA results indicated no statistically significant differences in pre-test scores among the three groups ($p > .05$), suggesting that the groups were comparable in their initial language performance. In contrast, the post-test results revealed statistically significant differences among the three groups, $F(2, 117) = 8.45$, $p < .001$. This result indicates that post-intervention language performance differed significantly across explicit instruction, implicit instruction, and control groups. The ANOVA result therefore provides evidence that the observed differences in post-test performance were unlikely to have resulted from random variation alone. Descriptively, the explicit instruction group obtained the highest post-test mean, followed by the implicit instruction group and the control group. Thus, the explicit instruction group outperformed both the implicit instruction and control groups in terms of mean post-test performance, which could be attributable to this type of instructional intervention.

The language test results (pre-test and post-test) showed that the explicit instruction group improved by 25%, demonstrating significant gains in overall test scores. The implicit group improved by 15%, particularly in relation to fluency and task completion, while the control group showed only a 5% improvement, primarily in vocabulary-related performance. Language test scores were analyzed using descriptive and inferential statistics. Mean scores and standard deviations for pre-test and post-test results across groups are presented in Table 1. Higher mean scores indicate better language test performance, while lower standard deviations indicate less variability in students' scores.

Table 1. Pre-test and post-test scores across groups

Group	Pre-test		Post-test		Gain (%)
	Mean	SD	Mean	SD	
Explicit	62.4	9.5	78.0	6.5	+25%
Implicit	63.1	8.3	72.5	7.0	+15%
Control	61.8	8.0	65.0	7.2	+5%

As shown in Table 1, the explicit instruction group demonstrated the largest increase in mean test performance, followed by the implicit instruction group and the

control group. The reduction in standard deviation in all three groups also indicates lower variability in post-test scores compared with the pre-test scores.

Following the intervention, reported strategy use increased in all three groups, with the largest descriptive increase observed in the explicit instruction group. This pattern was consistent with the hypothesis that explicit strategy instruction would be associated with greater increases in reported strategy use. Strategic Behaviour Questionnaire revealed that the explicit group reported a 40% increase, particularly in the use of self-regulation, planning, monitoring, critical thinking, and self-evaluation strategies. The implicit instruction group reported a 20% increase, particularly in collaborative problem-solving, whereas the control group showed negligible changes (< 5%).

The results also indicated moderate use of cognitive and metacognitive strategies before the intervention. Across the groups, the descriptive statistics for pre-intervention strategy use were $M = 2.93$, $SD = 0.74$ for metacognitive strategies and $M = 2.60$, $SD = 0.72$ for cognitive strategies. These findings suggest that students entered the intervention with a moderate level of strategic behaviour.

The results that mirror the effectiveness of strategic intervention are shown in Figure 1 and Figure 2, where group differences in metacognitive and cognitive strategy use are illustrated. Accordingly, Figure 3 presents a boxplot of the post-test distribution of metacognitive strategy scores.

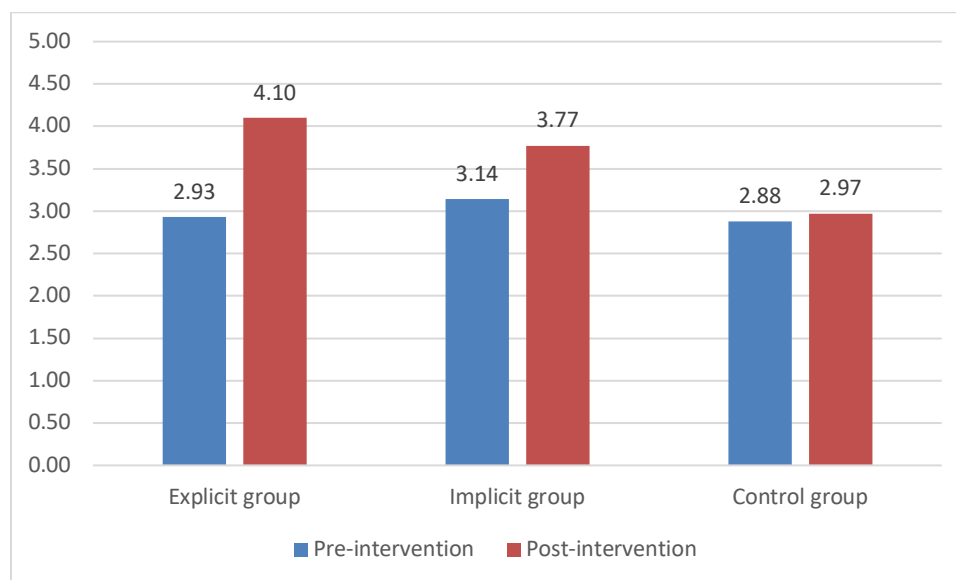


Figure 1. Mean values of metacognitive strategies

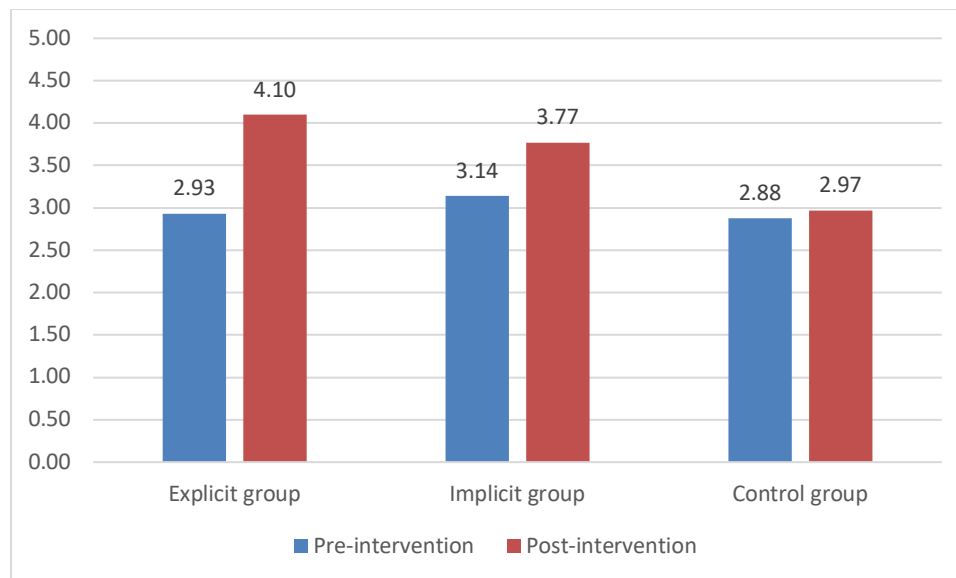


Figure 2. Mean values of cognitive strategies

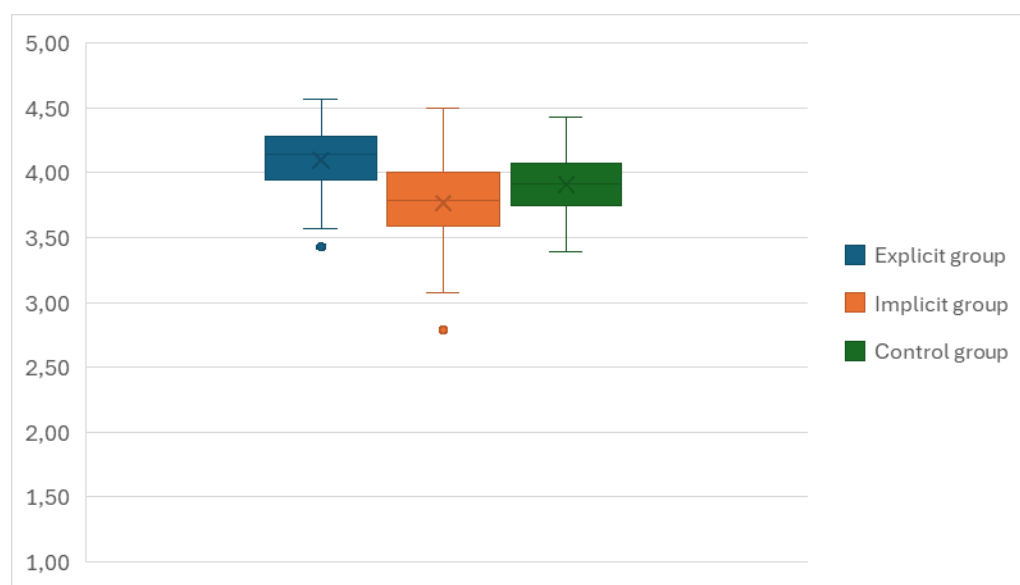


Figure 3. Boxplot of data dispersion in post-intervention analysis of metacognitive strategies

4.2. Qualitative Results

The thematic analysis followed the principles of thematic analysis outlined by Braun and Clarke (2006, 2021). The analysis facilitated the identification of recurring patterns in students' perceptions, learning behaviours, and attitudes toward strategy instruction (Creswell & Creswell, 2018, Miles et al., 2014).

ESP students completed reflective journal entries throughout the ten-week instructional period. They were asked to reflect on the learning strategies they used,

their task performance, difficulties or challenges they encountered, the perceived effectiveness of strategies, and changes they noticed in the learning process. Rather than following a rigid journal template, students were provided with brief guiding prompts that structured their reflections while allowing them to describe their experiences in their own words, as both structured and flexible opportunity to reflect on their learning.

The thematic analysis involved several stages: familiarization with data (all journal entries were read several times), initial coding (patterns related to strategy use were identified), theme development (codes were grouped into broader categories), review and refinement of generated themes (themes were refined and reexamined to ensure internal consistency), and interpretation (themes were interpreted in relation to the research questions). All journal entries were read several times to develop an in-depth understanding of the data and to identify potentially relevant patterns. Initial codes were then generated systematically, focusing particularly on students' reported use of language-learning strategies, their approaches to planning and monitoring learning, and the challenges they encountered. Related codes were subsequently grouped into broader candidate themes. These themes were reviewed, and those without sufficient coherence or value were revised or discarded. This process is consistent with Braun and Clarke's (2006, 2021) account of thematic analysis. Its credibility and quality were addressed through a transparent and systematic analytic process rather than through participant validation of the instructor's interpretations. In particular, the analysis involved repeated engagement with the complete dataset, systematic coding, recursive comparison of themes with the coded extracts and the dataset, and careful examination of whether each theme was relevant to the research questions.

Thus, analysis of reflective journals provided significant insights into how students navigated their learning experiences. Participants noted that the explicit instruction provided a clear framework, allowing them to recognize and articulate their language learning strategies effectively. The implicit group demonstrated increased engagement but less structured strategy use. Moreover, respondents in the explicit group described becoming more aware of how to plan their studying, manage time effectively, analyze reading materials, and adapt strategies to different ESP tasks in their reflective journals, which implied that they were able to transfer these strategies to new tasks and learning contexts. Respondents in the implicit group demonstrated awareness of strategic transfer, engagement and creativity in role-plays, but

occasionally lacked accuracy. The explicit group also emphasized feeling more confident in tackling unfamiliar ESP tasks and improved teamwork. Overall, the quantitative analysis provided measurable evidence of improvement in ESP students' strategic skills, thereby complementing qualitative findings. Increased metacognitive awareness, strategic flexibility and adaptability, and collaborative engagement supported the statistical trends observed in the quantitative analysis, offering a more comprehensive understanding of how students' strategic development was influenced.

4.3. Discussion

Students in the explicit instruction group demonstrated a higher level of metacognitive awareness. They reported improved ability to plan, monitor, and evaluate their learning, as well as increased confidence in handling unfamiliar ESP tasks. In contrast, students in the implicit group showed high levels of engagement and creativity, particularly in communicative activities. However, their reflections indicated less structured strategy use and lower awareness of underlying learning processes. Reflective journals revealed that explicit instruction helped students articulate their learning strategies more clearly.

The findings presented in Table 1 confirm H1, showing that students receiving explicit strategy instruction achieved greater ESP performance improvement than those in the implicit and control groups. Figures 1–3 support H2 and H3, demonstrating increased cognitive and metacognitive strategy use in both experimental groups, as well as some improvement in the implicit instruction group, although less pronounced than in the explicit instruction group. In that respect, the results suggest that explicit strategy instruction led to the highest overall gains in ESP skill development, particularly in transferable skills, such as self-regulation and critical thinking, as well as language skills. Strategy awareness was inferred from the questionnaire and journals. The implicit approach also contributed positively, mainly by moderately enhancing engagement and fluency. The control group demonstrated only minimal progress, indicating that strategy instruction, whether explicit or implicit, offers clear advantages over traditional ESP education.

Thus, the findings confirm that explicit strategy instruction is more effective in promoting both language development and strategic behaviour. These results align with previous research emphasizing the benefits of explicit strategy training (Chamot, 2004; Oxford 2011), showing that although explicit and implicit strategy instruction can be effective, explicit strategy instruction tends to be more beneficial for the

conscious and efficient deployment of learning strategies. As Chamot (2004: 23) stresses, "strategy instruction should be explicit; that is, the teacher should inform students about the value and application of strategies." These practices not only enhance immediate language performance but also prepare students for lifelong learning and professional achievements.

4.4. Pedagogical implications

Practical recommendations resulting from this research include integrating modeling, guided practice, and reflective activities as part of explicit strategy instruction to scaffold students' strategic growth. Modeling and guided practice are core components of the explicit instruction phase. They ensure that students not only hear about strategies but also see them in action and practice them with guidance and support before moving toward independent use. Modeling involves demonstrating the use of a strategy in a realistic learning situation while thinking aloud to make the cognitive process visible to learners (O'Malley & Chamot, 1990). In guided practice stage, learners apply the strategy with teacher scaffolding and feedback before using it autonomously (Cohen, 2011).

5. Conclusion

As effective strategic input involves helping ESP students develop their metacognitive awareness, including setting learning goals, monitoring and controlling progress, and adjusting strategies as needed, it should also consider individual needs, abilities, and learning preferences of students. Teachers are encouraged to tailor instruction to address specific learning challenges and students' strengths, so that strategy training remains relevant and beneficial for all students.

Explicit strategy instruction helps students to learn and apply specific strategies within the immediate context of instruction but also to transfer these skills to new situations, which makes it a valuable pedagogical approach. It equips learners with tools they can use throughout their academic and professional lives. Students are also encouraged to actively engage in the learning process by applying the strategies they have been taught through problem-solving exercises, discussions, collaborative activities, and self-assessment. Reflection is utilized to evaluate the effectiveness of strategies and the outcomes they achieve. Constructive feedback from teachers is also crucial in supporting students' strategic growth and fostering autonomous learning.

Developing ESP students' skills through fostering strategic behaviour is thus increasingly recognized as essential for achieving higher learning outcomes and problem-solving in real-world contexts (Stanojević Gocić, 2024, 2025). When intentionally cultivated through structured pedagogical interventions, strategic behaviour, which includes goal-oriented planning, adaptive thinking, and self-regulation, produces significant benefits for ESP students' linguistic development. It empowers learners to take control of their learning processes, adapt to diverse learning problems, and transfer acquired skills across different domains.

Incorporating both explicit and implicit strategy instruction into ESP curricula supports a more holistic educational model that values learner autonomy, reflection, and continuous skill development. This integration moves beyond traditional content-focused teaching toward a skills-based, learner-centered framework that promotes strategic and conscious involvement in language learning.

This study further emphasizes the need for a paradigm shift in educational design, one that balances content-based learning with the intentional cultivation of strategic competencies. Such a shift enables educators to prepare students not only for immediate academic success but also for continuous, lifelong learning.

Future research should explore the long-term effects of strategic behaviour training on both academic and professional outcomes. Longitudinal studies are particularly needed to examine how early strategy instruction influences students' long-term skill development, communicative efficiency, and self-regulation as a category of strategic behaviour.

The ultimate pedagogical goal is for ESP students to apply the strategies they have learned in authentic contexts, such as academic study, professional communication, or everyday interactions. Through the internalization and transfer of learning strategies, ESP students become more autonomous, reflective, and adaptable language users.

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