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Research Article

Cognitive Mechanisms of Metaphor Formation and Interpretation in Second Language Learning

Nadia SENCHYLO-TATLILIOGLU [1], Inna ZAVALNIUK [2], Valentyna BOHATKO [3], Ruslana HOROBETS [4] & Svitlana ROMANCHUK [5]

[1] Corresponding Author, Ataturk University, Erzurum, TÜRKİYE
ifyc22@ukr.net
ORCID: 0000-0001-9196-7118
[2] Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, UKRAINE
zavalniukinna@gmail.com
ORCID: 0000-0002-3993-9555
[3] Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, UKRAINE
bogatkovalentina21@gmail.com
ORCID: 0000-0002-3634-9488
[4] Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, UKRAINE
ruslana_horobets@ukr.net
ORCID: 0000-0001-6659-3337
[5] Ukrainian Institute of Art and Science, Bucha, UKRAINE
svitlor2017@ukr.net.
ORCID: 0000-0002-5737-2951

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Abstract: This study aims to identify cognitive mechanisms underlying the formation and interpretation of linguistic metaphors in the context of second language acquisition, and to establish the effectiveness of cognitively oriented strategies for developing metaphorical competence. The research was conducted as a quasi-experimental intergroup comparison with post-test data collection. It involved students of non-philological specialties with an average level of English proficiency, for whom metaphorical interpretation is not part of systematic language practice. The cognitive theory of metaphor and the provisions of conceptual mapping served as the methodological foundation. Data were collected by administering test tasks on the interpretation and productive generation of metaphors, as well as a questionnaire on strategic metaphor awareness. The results showed that focused work on conceptual domains led to a statistically significant increase in the accuracy of metaphorical interpretation, the structural complexity of productive metaphors, and participants' strategic awareness. The experimental group demonstrated significantly higher semantic flexibility and the ability to construct cognitively motivated metaphors than the control group, confirming the effectiveness of the cognitive approach to metaphor learning.

Anahtar Sözcükler:

İletişimsel yetkinlik
Bilişsel dilbilim
Mecazî düşünme
Dilsel metafor
Anlamsal yapı

İkinci Dil Öğreniminde Metafor Oluşumu ve Yorumlanmasının Bilişsel Mekanizmaları

Özet: Bu çalışma, ikinci dil edinimi bağlamında dilsel metaforların oluşumu ve yorumlanmasının altında yatan bilişsel mekanizmaları belirlemeyi ve bilişsel yönelimli stratejilerin metaforik yetkinliğin geliştirilmesindeki etkililiğini ortaya koymayı amaçlamaktadır. Araştırma, son-test veri toplama sürecini içeren yarı deneysel gruplar arası karşılaştırma deseniyle yürütülmüştür. Çalışmaya, metaforik yorumlamanın sistematik dil pratiğinin bir parçası olmadığı, İngilizce yeterlik düzeyi orta seviyede olan filoloji dışı alanlarda öğrenim gören öğrenciler katılmıştır. Kuramsal çerçeve olarak bilişsel metafor kuramı ve kavramsal eşleme ilkeleri temel alınmıştır. Veriler, metaforların yorumlanması ve üretimine yönelik test görevleri ile metaforik farkındalığa ilişkin stratejik bir anket aracılığıyla toplanmıştır. Bulgular, kavramsal alanlara odaklanan öğretim uygulamalarının, metaforik yorumlama doğruluğunda ve üretken metaforların yapısal karmaşıklığında istatistiksel olarak anlamlı bir artışa yol açtığını ve katılımcıların stratejik farkındalık düzeylerinin geliştiğini göstermektedir. Deney grubu, kontrol grubuna kıyasla anlam esnekliği ve bilişsel olarak temellendirilmiş metaforlar kurabilme becerisi bakımından anlamlı düzeyde daha yüksek performans sergilemiştir. Bu sonuçlar, metafor öğretiminde bilişsel yaklaşımın etkililiğini doğrulamaktadır.

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1. Introduction

Language in modern linguistics is considered not only a means of communication but also a key tool for conceptualizing reality, reflecting on, and shaping human cognitive processes (Rixsitillayeva & Umirova, 2025; Shao, 2024). Within cognitive linguistics, language structures are understood as representations of mental operations, and linguistic metaphor is one of the basic mechanisms of figurative thinking and the organization of meaning (Aras et al., 2024; Baykabilov, 2024). This approach shifts the research focus from the formal-stylistic characteristics of metaphor to its cognitive nature, thereby highlighting the problem of understanding the semantic mechanisms underlying the formation of metaphorical meanings in linguistic consciousness (Baturina et al., 2024; Ashurova & Galieva, 2024). In the modern linguistic space, metaphor permeates both everyday and scientific communication, performing the functions of conceptualizing abstract concepts, secondary nomination, and structuring knowledge (Baykabilov, 2024; Rixsitillayeva & Umirova, 2025). Through metaphorical mapping, abstract spheres are conceptualized through concrete experience, thereby providing cognitive economy and increasing communication effectiveness (Shao, 2024). At the same time, the growing role of metaphor in academic discourse and intercultural interaction raises new requirements for speakers' communicative competence, especially in the context of second language acquisition (Lu, 2021; Martín-Gascón, 2024; Zorba, 2023; Zorba, 2025).

In recent years, scientific studies have considered metaphor as a fundamental mechanism of thinking, closely related to cognitive styles, neuroplasticity, and cultural conditioning of meaning interpretation (Liu & Xing, 2025; O'Reilly & Marsden, 2023). It has been shown that metaphorical competence contributes to the development of vocabulary, discursive skills, and argumentative writing, and it also plays a key role in the formation of intercultural communication (Lu, 2021; Liu & Xing, 2025). At the same time, the complexity of the semantic structure of metaphor and its multilevel nature create difficulties for both interpretation and a systematic description of the cognitive mechanisms of its formation (Ashurova & Galieva, 2024).

Despite the significant volume of scientific work devoted to conceptual metaphor, secondary nomination, and imagery, in modern scientific discourse, there is a fragmentation of approaches to the analysis of the interaction among cognitive, semantic, and communicative factors in metaphor formation (Baturina et al., 2024; Baykabilov, 2024; Rayimovna, 2023). Most studies focus either on the theoretical understanding of metaphor as a universal cognitive mechanism or on its applied meaning in language teaching, particularly through literary works integrated into language teaching (Bekteshi & Avdiu, 2024), without proposing a holistic model that combines semantic structure, figurative thinking, and communicative competence within a single analytical approach (Aras et al., 2024; Martín-Gascón, 2024; Shao, 2024). In this context, the need for a comprehensive study of the cognitive mechanisms of linguistic metaphor formation is becoming more urgent, aimed at systematizing the role of imagery, semantic transfer, and secondary nomination in the processes of creating and interpreting metaphorical meanings in the modern linguistic environment (Ashurova & Galieva, 2024; Rixsitillayeva & Umirova, 2025). The purpose of the present research is to identify the features of cognitive mapping and figurative thinking involved in the formation and interpretation of linguistic metaphor in the context of non-professional acquisition of English as a second language. The scientific value of the scientific work lies in clarifying the structure of metaphorical competence and the relationships between its receptive and productive aspects. The practical significance of the research is determined by the possibility

of using the obtained results to develop cognitively oriented approaches to teaching metaphor in general foreign language courses.

2. Method

2.1. Methodological Basis

The methodological basis of the research is the cognitive-linguistic approach to language analysis, within which linguistic metaphor is considered a basic mechanism of conceptualization, figurative thinking, and secondary nomination, which structures knowledge and shapes semantic meanings (Ashurova & Galieva, 2024; Shao, 2024). Within this approach, metaphorical meaning is interpreted as the result of conceptual mapping between domains, based on associative transfer, analogy, and cognitive operations of meaning agreement (Baykabilov, 2024; Hurliman & Ashurova, 2023). The theoretical framework of the research is complemented by the provisions of the theory of conceptual metaphor, according to which a metaphor functions not as a purely stylistic device but as a universal tool of cognition, reflecting the interaction of linguistic, cognitive, and cultural experience (Lakoff & Johnson, 2008; Shao, 2024). The concept of metaphor as a tool for establishing and enhancing communicative competence is also crucial to this research, especially in second language acquisition, where metaphorical thinking promotes semantic flexibility and successful linguistic self-expression (Lu, 2021; Martín-Gascón, 2024).

The methodological framework of the research is based on the integration of cognitive and psycholinguistic approaches, which allows for combining the analysis of the semantic structure of metaphor with the empirical study of the processes of its understanding and production (Mashal & Kasirer, 2011; O'Reilly & Marsden, 2023). Such a framework enables operationalizing metaphorical competence as a multidimensional entity comprising receptive and productive components, as well as imagery and communicative appropriateness (Nurmatova & Hwang, 2022; Galantomos, 2019). Within the framework of the present research, the formation of linguistic metaphor is analyzed in the context of using a foreign language (L2), which is considered a less automated cognitive environment than the native language. This approach makes it possible to trace more clearly the active mechanisms of conceptual transfer, figurative motivation, and secondary nomination, which in L1 conditions often function implicitly and are not realized by speakers, thereby complicating their empirical fixation (Martín-Gascón, 2024; Shao, 2024).

2.2. Research Design

The research was implemented in a quasi-experimental design format with pre- and post-test measurements, which allows for assessing the impact of cognitively oriented work with linguistic metaphor on the development of metaphorical and communicative competence. Within the design, two groups of participants were formed – experimental (Group 1) and control (Group 2); they differed in the type of educational impact but were comparable in terms of language proficiency and age characteristics. The sample included 62 participants (n = 62) aged 18 to 24, educated at higher education institutions in the humanities, with a socio-economic profile, and who studied English as part of the mandatory educational components at the B1–B2 level. The participants had no specialized linguistic or translation training, which helped avoid the influence of professional metalinguistic knowledge on the experiment's results. The sample was formed through a targeted online invitation distributed via educational platforms and the email newsletters of selected Ukrainian higher education institutions where English is taught as a general education subject, followed by voluntary responses from potential participants. This method of selection allowed for the inclusion of respondents with different educational backgrounds, provided that uniform inclusion criteria were met. The inclusion criteria for the

research were as follows: age 18 or older, stable acquisition of a foreign language for at least 2 years, no native-speaker status in the language being studied, and no diagnosed cognitive or speech disorders. Participants with professional linguistic or translation education were excluded from the sample to avoid the influence of professional knowledge on the experiment's results.

The experimental group (n = 31) underwent a training module based on cognitively oriented work with linguistic metaphor, which included an analysis of conceptual domains, an explanation of semantic transfer, and a task on secondary nomination. The control group (n = 31) worked with the same lexical items in a traditional format, focused on the explanation of meanings and contextual use without explicit analysis of metaphorical mechanisms. Both groups performed identical pre-test and post-test tasks, which ensured the comparability of the obtained data. Data collection was conducted over four weeks in a remote format, using unified instructions and identical materials for both groups. Standardized test tasks for comprehending and creating metaphors, along with brief written assignments meant to evaluate the imagery and communicative appropriateness of metaphorical communication, were employed to document the findings (Appendix 1). Participants' responses to experimental (including English-language stimulus materials), interpretive, and metacognitive questions were formulated in their native language (L1), which minimized the influence of linguistic productivity on the assessment of cognitive mechanisms of metaphorization.

2.3. Participants

The research has several methodological limitations. Firstly, the use of a relatively small and targeted sample limits the generalizability of the results to broader populations of speakers. Secondly, the asynchronous online format of the tasks does not allow for full control over the conditions of their performance, which may affect individual response strategies. The research focuses mainly on verbally conscious aspects of metaphorical thinking, while automated or unconscious cognitive processes remain outside the scope of empirical analysis. In addition, the lack of a native-speaker control group or a comparative L1 task prevents a direct comparison of metaphorical mapping features in the native and second languages. Despite this, the formed sample is relevant to the research's purpose, as it enables tracing typical mechanisms of linguistic metaphor formation in the context of non-specialized language learning.

2.4. Data Collection

The main tool for collecting empirical data was a complex experimental task designed to identify cognitive mechanisms underlying linguistic metaphor formation in non-specialist language learning. The task consisted of three consecutive blocks and was completed in an asynchronous online format, following unified instructions. All stimulus materials were presented in English as the participants' second language (L2). The tasks included interpreting metaphorical expressions in the context of short text fragments, creating one's own metaphorical expressions to denote abstract concepts, and a short metacognitive survey on the complexity of the tasks and the strategies used. This structure allowed for combining the analysis of receptive and productive aspects of metaphorical competence with a qualitative interpretation of individual cognitive differences. Experimental tasks were conducted remotely via the Google Forms platform. The analysis of the obtained data was conducted using a combination of quantitative and qualitative methods. Metaphorical units were coded according to the types of conceptual metaphors (structural, ontological, orientational), as well as the nature of figurative motivation and semantic transparency. Coding was performed by two independent researchers, with subsequent agreement on differences through expert discussion, thereby increasing the reliability of qualitative data analysis.

2.5. Data Analysis

Quantitative analysis of the results was performed using SPSS software (version 26). Descriptive statistics were calculated for each block of tasks, including the mean values and standard deviations of the indicators of interpretation success and metaphorical expression productivity. Testing the normality of the data distribution using the Shapiro–Wilk test revealed deviations from normality for several variables; therefore, nonparametric statistical methods were used in the further analysis. Spearman's correlation coefficient was used to identify relationships between the level of language training and indicators of metaphorical thinking. The level of statistical significance was set at $p < 0.05$. The research was conducted in accordance with generally accepted ethical principles of academic studies. All participants volunteered and provided informed consent before beginning the tasks. They were informed about the purpose of the research, the format of participation, and the possibility of terminating participation at any stage without negative consequences. The collected data were processed in an anonymized form and used exclusively for scientific purposes. Participants' personal data were not collected, and the results were analyzed in aggregate, making it impossible to identify individual respondents. The research did not involve any psychological or social risks for the participants.

3. Findings

Analysis of the pre-test data showed no statistically significant differences between the groups in terms of baseline receptive and productive metaphorical competence, confirming their initial comparability. The average accuracy of interpretation of metaphorical statements in Group 1 was M = 2.91 (SD = 0.48), while in Group 2 it was M = 2.87 (SD = 0.51); the difference is not significant (U = 459.0; p = 0.73). Similarly, the indicators of productive metaphorization were comparable: M = 2.84 (SD = 0.52) in Group 1 and M = 2.78 (SD = 0.46) in Group 2 (U = 471.5; p = 0.62). Thus, both groups entered the experimental stage with a comparable level of development of key skills (Figure 1). After completing the training module, Group 1 showed a significant improvement compared to the control group. The post-test results showed that participants who used cognitively oriented methods of metaphor analysis demonstrated significantly higher accuracy in interpreting metaphorical expressions. In particular, the mean score was M = 3.84 (SD = 0.39) in Group 1 and M = 3.21 (SD = 0.44) in Group 2. The difference is statistically significant (U = 287.5; $p < 0.001$), indicating the effectiveness of the conceptual and analytical work with the stimulus material.

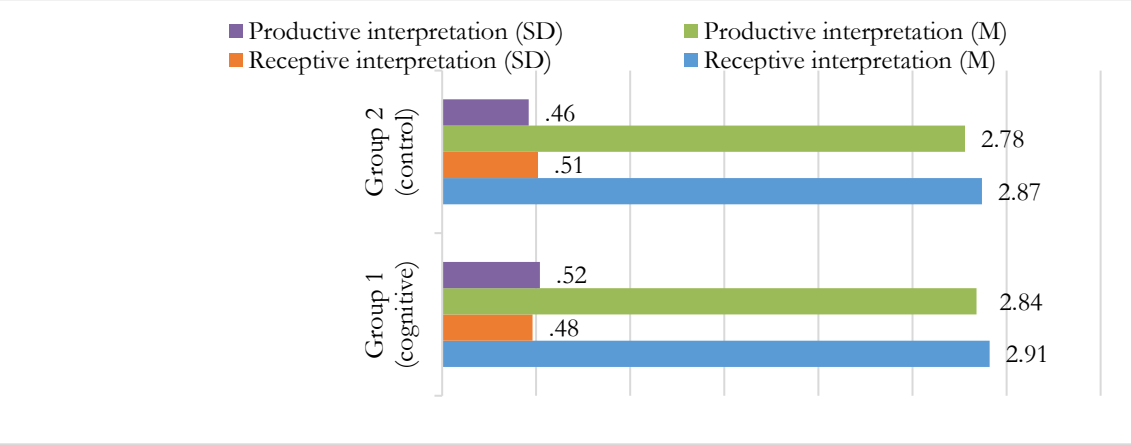


Figure 1. Average pre-test scores of receptive and productive metaphorical competences in both groups (compiled by the author)

In the productive component, a clear intergroup differentiation was also observed. Participants in Group 1 produced a greater number of conceptually sound, structurally clear, and semantically transparent metaphorical statements (M = 3.72; SD = 0.41) than participants in the control group (M = 3.18; SD = 0.47). The result is statistically significant (U = 301.0; p <0.01). The greatest contrast was observed in the figurative motivation subcomponent: G1 demonstrated a significantly greater reliance on structural and orientational conceptual transfers, whereas in Group 2, conventional and template solutions prevailed (Figure 2).

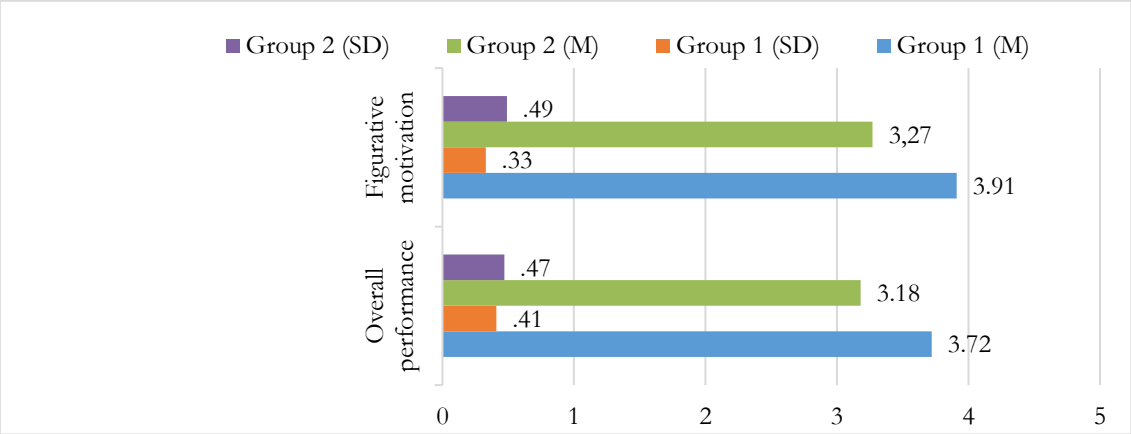


Figure 2. Indicators of productive metaphorization by subcomponents in both groups (compiled by the author)

Analysis of metacognitive responses revealed that participants in the experimental group were more likely to report using conceptual mapping and semantic modeling when creating their own metaphors (83% of respondents). In comparison, the control group was more likely to use intuitive and associative strategies (61%). In addition, participants in Group 1 rated the interpretation tasks as less difficult (M = 2.31; SD = 0.58) than those in Group 2 (M = 2.74; SD = 0.63), indicating greater awareness of metaphorical mechanisms and reduced cognitive load. Spearman's correlation analysis revealed a significant relationship between the level of productive metaphorization and the use of conceptual strategies (ρ = 0.52; p < 0.001). At the same time, no correlation was recorded between the level of general language preparation (self-assessed indicator) and the success of interpreting a metaphorical statement (ρ = 0.14; p = 0.19), which confirms the autonomy of metaphorical thinking from general L2 proficiency. The summarized quantitative indicators are given in Table 1.

Table 1.

Generalized Post-test Indicators of Metaphorical Competence

Indicator	Group 1 (cognitive)		Group 2 (control)		*p*
	M	SD	M	SD	
Interpretation of metaphors	3.84	0.39	3.21	0.44	< .001
Productive metaphorical statement	3.72	0.41	3.18	0.47	< .01
Figurative motivation	3.91	0.33	3.27	0.49	< .001

Qualitative analysis of written responses confirms quantitative trends. Participants in the experimental group more often appealed to the internal logic of conceptual transfer (e.g., "movement towards a goal as movement in space," "emotional state as physical balance"). In contrast, the responses of the control group were mostly based on everyday associations without a clear domain structure. Typical of Group 1 were descriptions of strategies such as

"first I identify the source area, then I look for matches," whereas in Group 2, formulations such as "I select a similar situation" dominated. The analysis of these results demonstrates that cognitively oriented work with metaphor will lead to significant improvements in both the receptive and productive aspects of metaphorical competence. The initial influx represents increased semantic fluidity, improved precision of mapping between domains, and the development of strategic awareness – key characteristics that signify the formation of a global metaphor in the minds of another global master.

4. Discussion and Conclusion

The results demonstrate that the formation and interpretation of a universal metaphor in another culture are based on various cognitive mechanisms of conceptual mapping, thereby confirming the dominance of universal principles of metaphorical conceptualization. The increase in the accuracy of interpretation of metaphorical words and the increase in the intensity of productive metaphorization in the experimental group are consistent with the findings about metaphor as a tool for processing abstract change through projection information from one domain to another, which is consistently described by cognitive linguistics (Ashurova & Galieva, 2024; Shao, 2024). The observed reduction also aligns with data indicating that active work with conceptual schemes enhances cognitive flexibility and promotes the automation of semantic convenience operations necessary for inducing metaphorical meaning (Nurmatova & Hwang, 2022).

During the research, it has been revealed that the systematic acquisition of mechanisms of conceptual analysis in the initial phase promotes both receptive and productive metaphorical competence in the warehouse. This conclusion is based on studies aimed at improving the effectiveness of domain modeling and structural transfer approaches (Gutiérrez Pérez, 2018; Martín-Gascón, 2024). These data also confirm that the conceptual complexity of metaphors in L2 can be successfully compensated for by increased awareness and activation of mechanisms of figurative thinking; consequently, we observe results consistent with neurocognitive studies (Liu & Xing, 2025; Mashal & Kasirer, 2011). The growth of semantic insight and figurative motivation in the experimental group's productive learning suggests the validity of the hypothesis that conceptualization and second nomination in L2 can be systematically dissolved through purposeful cognitive influx.

Despite the overall improvement, participants in the control group also showed a modest increase in post-test results, which may be associated with the effect of repeated exposure inflow or with non-systemic activation of intuitive associative strategies characteristic of the cob stage of metaphorical development (Galantomos, 2019). Such partial convergence of results, despite significant intergroup differences, indicates the multilevel nature of metaphorical competence, dependent on both the conceptual apparatus and general linguistic experience. The recorded increase in awareness of strategies in the experimental group is consistent with models of metaphorical development, which emphasize the role of metacognitive mechanisms and the speaker's ability to regulate interpretive processes through the analysis of domains and structural correspondences (O'Reilly & Marsden, 2023). The strengthening of participants' strategic discipline in the experimental group confirms the assumption that metaphorical competence can be conceptually guided rather than merely intuitively associative, aligning with the theory of conceptual metaphor (Lakoff & Johnson, 2008).

Comparing the results with other studies also reveals some discrepancies. In particular, some studies indicate a strong dependence of metaphorical interpretation on the level of general

language competence (Nurmatova & Hwang, 2022); however, the data of the present research do not confirm such a direct dependence: correlation analysis did not reveal statistically significant relationships between self-assessed L2 proficiency and accuracy of metaphor interpretation. This may be because the sample included speakers with similar levels of language proficiency, or because metaphorical thinking activates cognitive mechanisms largely autonomous from general language competence. The results of the research also provide an opportunity to explain certain contradictions described in the literature. For example, the traditional view of metaphor as a purely linguistic phenomenon (Van Ments et al., 2015) cannot account for the significant increase in the qualitative characteristics of productive metaphors under the influence of cognitive-analytic training. At the same time, the cognitive approach, which considers a metaphor as the result of cross-domain mapping, is consistent with the dynamics of the results obtained, since it makes it possible to interpret changes as a consequence of the activation of high-level cognitive processes of knowledge structuring (Ashurova & Galieva, 2024; Baykabilov, 2024).

The limitations of the research are primarily related to the sample characteristics and the research design. The targeted sample of students in non-specialized majors may limit the generalizability of the results to broader groups of speakers. In addition, the asynchronous online format did not allow for control over all external factors of task performance, which could have influenced the strategies used. It is also crucial to note that the research documented only verbally accessible elements of metaphorical activity, ignoring automated cognitive processes. The practical significance of the results is the possibility of applying cognitively-oriented approaches in second language learning. Systematic work with conceptual domains and transfer structures can be integrated into educational modules to develop lexical and discursive competences, thereby increasing semantic flexibility, creativity, and the ability to structure semantics accurately. Such methods can also serve as the basis for developing differentiated educational strategies tailored to students' levels of metaphorical awareness. The results support the research hypotheses and confirm that cognitive mechanisms of conceptual mapping can be purposefully developed in the context of second language acquisition, thereby fostering productive and receptive metaphorical competence. The research demonstrates the important role of metaphor as a cognitive tool for organizing knowledge and developing communicative competence, making it a key link in modern cognitively oriented second-language pedagogy.

The results indicate that the development of metaphorical competence in second-language speakers is closely related to the purposeful activation of cognitive mechanisms for conceptual mapping and semantic structuring. Comparative analysis demonstrated statistically significant differences between participants in the experimental and control groups in the accuracy of interpreting and productively implementing metaphorical constructions, indicating the effectiveness of a cognitively oriented approach to metaphor learning. The revealed growth in conceptual awareness, increased semantic transparency, and stable use of structural transfers confirm the hypothesis of the systematic formation of metaphorization mechanisms in the context of second-language acquisition. Analysis of the dynamics of indicators demonstrated that, even at the same basic level of language proficiency, participants in the experimental group showed significantly greater stability in interpretive strategies, indicating the autonomy of metaphorical development from general language competence. The observed qualitative difference in productive metaphors – in particular, the increase in the proportion of structurally motivated transfers – is consistent with the cognitive theory of metaphor and confirms the leading role of conceptual domains in the formation of figurative meaning. Correlation analysis confirmed relationships between

the level of strategic awareness and the accuracy of interpreting metaphorical expressions, as well as between indicators of semantic flexibility and the ability to construct new, cognitively motivated metaphors. The results indicate that the development of metaphorical awareness is a key factor in the process of forming secondary nomination and provides a more effective organization of linguistic conceptualization.

The novelty of the research lies in the empirical demonstration that the mechanisms of conceptual mapping can be purposefully formed and consolidated in the context of second language learning. That metaphorical competence can develop not only through intuitive processes but also through systematically organized cognitive work. The practical significance of the results is the possibility of integrating research models with conceptual domains into programs for the development of lexical and discursive competence, thereby increasing the semantic flexibility and creativity of speakers. Interpretation of the results is limited by the quasi-experimental design, the characteristics of the sample, and the lack of analysis of automated cognitive mechanisms, which outlines the prospects for further studies. Future explorations should be directed towards cross-linguistic comparisons, analysis of long-term dynamics of metaphorical development, and the study of the neurocognitive foundations of conceptual mapping in the context of second language acquisition.

Ethical Statement

Ethical permission for this study was attained from the Ethics Committee of Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University's Ethical Committee on 03/01/2026 with Decision No. 7.

Informed Consent

Written informed consent form was obtained from each participant.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability

The data presented in this study are available from the corresponding author upon reasonable request. For privacy reasons, the data from this study are not publicly available.

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Appendix

Read the given English materials and complete the tasks in the given sequence. In tasks 1–3, you need to interpret the meaning of metaphorical expressions presented in the context. In tasks 4–6, you need to independently formulate metaphorical expressions in accordance with the given conditions. In tasks 7–9, you need to provide short written responses that reflect your own considerations regarding the completion of the tasks.

Task 1: Read the sentence.

After months of uncertainty, she finally began to see a light at the end of the tunnel.

1. Explain the meaning of the highlighted expression in this context.
2. Describe an image or concept that helps you understand this meaning.

Task 2: Read the sentence.

During the discussion, his argument completely collapsed under pressure.

1. Explain the meaning of the word *collapsed* in this sentence.
2. What image or situation underlies this usage?

Task 3: Read the sentence.

At the beginning of the semester, many students feel lost in a sea of information.

1. Explain the meaning of the highlighted expression.
2. What image is used to convey this meaning?

Task 4: Formulate one or two sentences using a metaphor that conveys a state of severe academic or intellectual overload.

Task 5: Formulate a metaphorical statement that describes the process of gradually achieving a challenging goal.

Task 6: Create a metaphorical description of the emotional state of uncertainty before an important decision.

Task 7: How difficult was it for you to explain the meaning of metaphors in tasks 1–3? (short written response)

Task 8: Describe how you typically found or created metaphors while completing tasks.

Task 9: What, in your opinion, was the most difficult part of this task?