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# Disciplinary Meaning-Making in ESP Translation: An SFL-Informed Discourse Analysis of Social Sciences Student-Teachers

**Ali Hemmati**[1]

1. Department of English Language Teaching, Farhangian University, Tehran, Iran. Email: hemata53@gmail.com

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**ABSTRACT**

English for Specific Purposes (ESP) translation is increasingly viewed as a discourse-mediated process in which learners reconstruct disciplinary meaning rather than merely transfer linguistic forms across languages. Guided by Systemic Functional Linguistics (SFL), this explanatory sequential mixed-methods study investigated how Iranian social sciences student-teachers reconstructed disciplinary meaning as they translated specialized academic texts. Forty-two participants completed a discipline-specific English–Persian translation task and a questionnaire, and fifteen subsequently participated in semi-structured interviews. Quantitative analyses identified lexical-semantic interpretation, nominalization, and discourse organization as the principal challenges affecting translation performance. Qualitative findings showed that these difficulties arose primarily from interpreting and reorganizing disciplinary discourse rather than from vocabulary limitations alone. Learners who adopted flexible meaning-oriented reformulation strategies produced more coherent translations, whereas reliance on literal translation was associated with weaker reconstruction of ideational and textual meanings and lower translation confidence. Overall, the findings suggest that successful ESP translation depends on learners' ability to negotiate disciplinary meaning through discourse-sensitive interpretation and reformulation across languages. The study contributes to SFL-informed ESP translation research by demonstrating the importance of discourse-level meaning reconstruction and highlights the value of translation pedagogy that explicitly develops learners' awareness of rhetorical organization, grammatical metaphor, and disciplinary discourse.

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## 1. Introduction

English for Specific Purposes (ESP) is increasingly viewed as a discourse-oriented field concerned with how learners engage with the communicative practices and knowledge-construction processes of specialized academic and professional communities instead of merely acquiring specialized vocabulary and grammar (Basturkmen, 2025; Hyland, 2022). From this perspective, language functions as a socially situated semiotic resource through which disciplinary knowledge is organized, interpreted, and communicated (Arús Hita & Matthiessen, 2024; Halliday & Matthiessen, 2014). Consequently, successful participation in ESP contexts requires learners to understand how disciplinary meanings are realized through discourse, rhetorical organization, and context-sensitive linguistic choices rather than isolated linguistic forms.

This discourse-oriented view has also reshaped contemporary perspectives on translation. Rather than representing a mechanical transfer of linguistic forms across languages, translation is increasingly conceptualized as a process of reconstructing meaning within new linguistic and disciplinary contexts (Cook, 2010; Geng, 2023; González-Davies & Enríquez-Raído, 2018; Laviosa, 2019). Recent studies indicate that translation encourages learners to engage critically with specialized discourse by interpreting conceptual relationships, rhetorical structures, and disciplinary assumptions embedded in academic texts (Boukranaa & Sandy, 2024; Herrero & Pérez-Sabater, 2024; Tang, 2025). Accordingly, successful translation depends not only on lexical knowledge but also on learners' ability to negotiate discourse-level meanings across languages.

Systemic Functional Linguistics (SFL) provides an appropriate framework for examining this process because it conceptualizes language as a resource for meaning-making within specific social and disciplinary contexts (Halliday & Matthiessen, 2014). Rather than treating meaning as the sum of individual lexical or grammatical choices, SFL explains how ideational, interpersonal, and textual meanings are realized simultaneously through discourse. Academic discourse in the social sciences is characterized by grammatical metaphor, nominalization, abstraction, evaluative positioning, and dense rhetorical organization, which collectively contribute to disciplinary knowledge construction (Halliday & Matthiessen, 2014; Hyland, 2022). From this perspective, translation requires learners to reconstruct these interconnected meanings instead of identifying lexical equivalents alone.

Recent discourse-oriented translation research likewise suggests that learners experience the greatest difficulty when disciplinary meanings and rhetorical organization must be reinterpreted across languages. Challenges frequently arise from grammatical metaphor, lexical density, textual cohesion, and context-dependent meaning rather than vocabulary limitations alone (Jiang et al., 2023; Liu & Li, 2022). These findings indicate that translation difficulties primarily involve discourse interpretation and meaning reconstruction. Such challenges are particularly evident in social sciences texts, where abstract concepts, evaluative language, and complex argumentative structures often resist direct linguistic correspondence (Camacho-Díaz, 2025). These challenges are also evident in the Iranian context. Akbari (2024) reported that Iranian ESAP graduates experienced difficulties in obtaining information from field-specific English materials through translation. Internationally, Wang and Xu (2025) found that greater source-text difficulty significantly affected students' translation processing, while Dong and Chen (2025) showed that academic translation involves substantial cognitive demands, particularly when translators work

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with specialized texts. These findings indicate that translation difficulties extend beyond lexical accuracy to the processing and reconstruction of meaning in specialized academic discourse.

Despite growing interest in translation within ESP, much of the literature has examined translation as a pedagogical technique for improving language learning, vocabulary acquisition, learner engagement, or translanguaging practices (Boukranaa & Sandy, 2024; Fehaima, 2022; Minh et al., 2023; Rushwan, 2017). Other studies have focused on translation strategies, cognitive regulation, or learner perceptions (Dong & Chen, 2025; Sipayung et al., 2025; Tang, 2025). Although these studies have enriched pedagogical and cognitive understandings of ESP translation, comparatively little attention has been paid to how learners reconstruct disciplinary meaning while translating specialized academic texts through an explicit SFL-informed framework. In addition, social sciences teacher education remains underrepresented in ESP translation research despite the distinctive rhetorical and conceptual features of social sciences discourse (Hyland, 2022; Minh et al., 2023).

To address these gaps, the present study adopts an SFL-informed discourse perspective to investigate how Iranian social sciences student-teachers reconstruct disciplinary meaning as they translate specialized ESP texts. Rather than emphasizing lexical accuracy or linguistic equivalence, it examines how learners negotiate nominalization, clause complexity, rhetorical organization, and ideational meaning during translation. By integrating analyses of translation performance with learners' reflections on their translation experiences, the study seeks to provide a more comprehensive understanding of the discourse processes underlying disciplinary meaning reconstruction in ESP translation.

Building on this perspective, the present study has three specific objectives. First, it seeks to identify the discourse-level and linguistic features that create the greatest challenges during translation. Second, it examines how learners' perceptions of the translation task are associated with their reconstruction of disciplinary meaning. Third, it explores how learners explain the discourse-related challenges they encounter during this process. Together, these objectives connect translation performance, learner perceptions, and discourse analysis to provide a more comprehensive account of disciplinary meaning reconstruction in ESP translation. Accordingly, the study addresses the following research questions:

1. Which discourse-level and linguistic features of social sciences ESP texts create the greatest challenges for Iranian student-teachers during translation tasks?
2. How are learners' perceptions of the translation task associated with their reconstruction of disciplinary meaning?
3. How do learners explain the discourse-related challenges they encounter while reconstructing disciplinary meaning during ESP translation?

## 2. Literature Review

### *2.1 Theoretical Framework*

This study is grounded in SFL, which conceptualizes language as a socially situated semiotic resource through which meaning is constructed within particular disciplinary and communicative contexts (Halliday & Matthiessen, 2014). Unlike structural approaches that primarily emphasize

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linguistic form, SFL explains how language simultaneously realizes ideational, interpersonal, and textual meanings in response to social purposes and contextual demands. This perspective is particularly relevant to ESP, where successful participation depends not only on mastering specialized terminology but also on understanding how disciplinary knowledge is organized, communicated, and interpreted through discourse (Arús Hita & Matthiessen, 2024; Basturkmen, 2025).

Within academic discourse, disciplinary meanings are realized through recurrent linguistic and rhetorical patterns that reflect the epistemological practices of specific knowledge communities (Hyland, 2022). Social sciences texts are especially characterized by abstraction, grammatical metaphor, nominalization, evaluative stance, and dense conceptual organization, all of which contribute to the construction of disciplinary arguments (Halliday & Matthiessen, 2014). From an SFL perspective, these discourse features are not merely stylistic characteristics but functional resources that enable writers to condense information, express complex relationships, and organize knowledge coherently. Consequently, understanding disciplinary discourse requires attention to how meanings are structured across clauses and texts rather than to individual lexical items in isolation.

This perspective has important implications for translation. Rather than viewing translation as the transfer of linguistic forms between languages, SFL conceptualizes translation as a process of reconstructing meaning within a new linguistic and cultural context. Translators therefore negotiate ideational meanings, interpersonal positioning, and textual organization while attempting to preserve the communicative functions of the source text (Halliday & Matthiessen, 2014; Liu & Li, 2022; Pym, 2014). Successful translation consequently depends on interpreting how disciplinary meanings are realized through discourse and recontextualizing those meanings in ways that remain appropriate for the target language and its academic conventions.

Recent studies adopting discourse-oriented perspectives similarly argue that translation difficulties frequently arise from learners' attempts to reconstruct rhetorical meaning rather than from vocabulary limitations alone. SFL-informed research has shown that grammatical metaphor, lexical density, and textual cohesion often present substantial challenges because they require learners to interpret conceptual relationships embedded within disciplinary discourse (Jiang et al., 2023; Liu & Li, 2022). Likewise, contemporary ESP scholarship increasingly recognizes translation as a meaning-making activity through which learners engage with disciplinary discourse instead of merely reproducing linguistic forms (Boukranaa & Sandy, 2024; Herrero & Pérez-Sabater, 2024; Tang, 2025). These perspectives collectively suggest that discourse analysis provides a more appropriate basis for understanding ESP translation than approaches focusing exclusively on lexical or sentence-level accuracy.

The present study adopts this SFL-informed perspective to examine how student-teachers reconstruct disciplinary meanings while translating social sciences texts. Particular analytical attention is given to discourse features identified in SFL as central to academic meaning-making, including nominalization, clause complexity, rhetorical organization, and the realization of ideational and textual meanings. These features provide the analytical lens through which translation performance is interpreted, allowing translation difficulties to be examined as challenges in discourse-level meaning reconstruction rather than as isolated linguistic errors. The framework therefore positions ESP translation as a process of disciplinary discourse mediation in

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which learners negotiate meanings across languages while responding to the rhetorical expectations of academic communication.

### *2.2 Review of Previous Studies*

Research on translation in ESP has gradually evolved from viewing translation as a supportive classroom technique to recognizing it as a discourse-oriented practice through which learners engage with disciplinary knowledge. Early work primarily emphasized the pedagogical value of translation for language learning. For example, Cook (2010) argued for reconsidering translation as an integral component of language teaching rather than a practice to be avoided, while Rushwan (2017) demonstrated that translation activities could enhance medical students' reading comprehension in ESP contexts. These studies contributed to the re-establishment of translation as a legitimate pedagogical practice and encouraged subsequent research to explore its broader role in specialized language learning. More recent scholarship has further established ESP as a distinct field concerned with disciplinary relevance and specialized discourse. Hyland and Jiang (2021), for example, examined the emergence of ESP as a discipline and highlighted the increasing importance of disciplinary and discourse-oriented research. Cheng (2021) likewise emphasized the role of language and lexico-grammatical choices in genre-based ESP writing pedagogy, reinforcing the importance of examining linguistic choices in relation to disciplinary purposes.

A further shift occurred with the emergence of multilingual and discourse-oriented perspectives on translation. Laviosa (2019) proposed that translation and translanguaging could promote critical engagement with academic discourse, moving attention beyond bilingual transfer toward meaning-making across languages. During the same period, Hyland (2022) emphasized that effective participation in ESP depends on understanding disciplinary genres, rhetorical conventions, and knowledge-building practices rather than merely acquiring technical vocabulary. Similarly, Wingate (2022) highlighted the importance of disciplinary discourse in teacher education, reinforcing the view that language learning involves participation in academic communities. Smith et al. (2022) further demonstrated the value of systematic needs analysis for identifying learners' academic and disciplinary requirements, supporting the view that ESP instruction should be closely connected to the communicative demands of particular fields. Collectively, these studies broadened theoretical understandings of ESP by situating language use within disciplinary and communicative contexts.

Recent empirical research has increasingly adopted discourse-sensitive approaches to translation. Drawing on SFL, Liu and Li (2022) demonstrated that grammatical metaphor, experiential meaning, and textual organization present substantial challenges during translation. Wang and Ma (2022) likewise identified SFL as an important framework for understanding translation as a process of meaning reconstruction rather than linguistic substitution. Fehaima (2022) further examined the pedagogical role of translation in ESP, highlighting its contribution to language learning and supporting the broader view of translation as a meaningful instructional resource. Building on these perspectives, Jiang et al. (2023) proposed discourse-centered approaches to translation evaluation that extend beyond sentence-level accuracy by emphasizing coherence and rhetorical organization. McGrath and Liardét (2023) further demonstrated the importance of grammatical metaphor in constructing disciplinary meanings across academic fields, reinforcing the relevance of SFL-based analysis to specialized academic discourse. Together, these

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studies illustrate a growing recognition that translation quality depends on learners' ability to reconstruct discourse-level meanings across languages.

Research published during 2023 and 2024 further diversified the field by examining translation from pedagogical and sociocultural perspectives. Geng (2023) conceptualized translation as a process of situated meaning-making shaped by disciplinary and social contexts. Minh et al. (2023) reported positive effects of translation-assisted instruction on medical ESP learning, while Boukranaa and Sandy (2024), Herrero and Pérez-Sabater (2024), and Alasmari et al. (2024) highlighted the contributions of translation-oriented and translanguaging pedagogies to learner engagement, rhetorical awareness, and bilingual mediation. These developments further indicate a shift toward approaches that connect translation with disciplinary communication and meaning-making rather than treating it solely as a language-learning technique. Collectively, these studies demonstrate the expanding role of translation within ESP as both a learning resource and a means of engaging with specialized discourse.

The most recent studies have extended this line of inquiry by examining cognitive, strategic, and discourse-related dimensions of translation. Camacho-Díaz (2025) explored learners' interpretation of metaphorical language in ESP, while Dong and Chen (2025) and Zheng (2025) emphasized the importance of metacognitive regulation during translation. Tang (2025), Jindamai et al. (2025), Romadloni and Sari (2025), and Sipayung et al. (2025) further reported the value of translation-oriented practices for supporting ESP learning across diverse educational contexts. These developments continued in 2026, with increasing attention to SFL-informed and discourse-sensitive approaches. Ramírez and González (2026) examined SFL-based translanguaging pedagogy in multilingual EAP classrooms, emphasizing the relationship between lexicogrammar and meaning-making. Similarly, Cheung (2026) examined an SFL-informed, computer-assisted EAP intervention for undergraduate social sciences students, highlighting the relevance of genre- and discourse-based approaches to disciplinary meaning-making. Collectively, these studies indicate that recent ESP research increasingly integrates cognitive, pedagogical, and discourse-oriented perspectives on translation and disciplinary language learning.

Taken together, the literature demonstrates substantial progress in understanding translation as a discourse-oriented activity within ESP. Previous research has established its pedagogical value, highlighted the importance of disciplinary discourse, introduced SFL-informed perspectives on meaning reconstruction, and examined strategic and cognitive dimensions of translation (Boukranaa & Sandy, 2024; Herrero & Pérez-Sabater, 2024; Hyland, 2022; Liu & Li, 2022; Tang, 2025; Zheng, 2025). More recent contributions further strengthen this trajectory by emphasizing the disciplinary nature of ESP (Hyland & Jiang, 2021), the role of lexico-grammatical choices in genre-based instruction (Cheng, 2021), the importance of needs analysis in academic contexts (Smith et al., 2022), grammatical metaphor in disciplinary discourse (McGrath & Liardét, 2023), metacognitive regulation and self-regulation in translation processes (Zheng, 2025), and SFL-informed approaches to multilingual and social-science EAP contexts (Ramírez & González, 2026; Cheung, 2026).

Nevertheless, comparatively little empirical attention has been paid to how learners reconstruct disciplinary meaning at the discourse level when translating specialized social science texts. In particular, few studies have integrated performance-based translation analysis with learners' explanations of the discourse challenges they encounter during disciplinary meaning reconstruction

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(Jiang et al., 2023; Liu & Li, 2022; Romadloni & Sari, 2025). Addressing this issue, the present study adopts an SFL-informed discourse-analytic perspective to investigate how social sciences student-teachers negotiate disciplinary meanings while translating specialized ESP texts.

## 3. Materials and Methods

### *3.1 Research Design*

This study employed an explanatory sequential mixed-methods design to investigate how Iranian social sciences student-teachers reconstructed disciplinary meaning while translating ESP texts. An explanatory sequential mixed-methods design was selected because it enables quantitative findings to be elaborated through qualitative inquiry, thereby providing a more comprehensive understanding of complex language-learning phenomena (Creswell & Creswell, 2018; Ivankova et al., 2006).

The study was conducted in two consecutive phases. During the quantitative phase, participants completed a translation task and questionnaire to identify patterns of translation performance, discourse-related difficulties, and learner perceptions. The subsequent qualitative phase used semi-structured interviews to explain and contextualize the quantitative findings by exploring learners' experiences of disciplinary meaning reconstruction and discourse-level translation challenges. Integration of the two datasets occurred during interpretation, allowing the qualitative findings to provide explanatory depth for the quantitative results (Hwang et al., 2025). The design is consistent with the study's SFL-informed perspective, which conceptualizes translation as the reconstruction of meaning across languages rather than the transfer of isolated lexical items (Halliday & Matthiessen, 2014).

### *3.2 Participants*

The study involved 42 male social sciences student-teachers enrolled in a compulsory ESP course at Farhangian University, Iran, during the 2024–2025 academic year. Because male and female student-teachers study on separate campuses, only male students were available to participate. All students enrolled in the course participated in the quantitative phase. Participants were non-English majors preparing for teaching careers who had completed at least one general English course. Their English proficiency ranged from lower-intermediate to intermediate, reflecting the heterogeneous linguistic backgrounds typically found in ESP teacher-education programs (Rahman et al., 2024).

Before data collection, participants completed five regular ESP class sessions focusing on key discourse features of social sciences academic texts, including abstract disciplinary concepts, nominalization, cohesive relations, evaluative meanings, and syntactically dense structures through illustrative examples. These sessions formed part of the regular curriculum and familiarized students with disciplinary discourse rather than serving as an experimental intervention. For the qualitative phase, 15 participants were selected through purposive maximum-variation sampling based on translation performance and questionnaire responses to capture diverse experiences of disciplinary meaning reconstruction (Creswell & Poth, 2018).

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### *3.3 Materials and Instruments*

Three complementary instruments were used to address the research questions. The first was a discipline-specific translation task requiring participants to translate a 269-word English social sciences text into Persian (Appendix A). The text represented authentic disciplinary discourse and incorporated key SFL features, including abstract concepts, nominalization, cohesion, evaluative meanings, and syntactically dense structures. Translation performance was assessed using an SFL-informed analytic rubric (Appendix D) evaluating ideational, textual, interpersonal, and lexico-grammatical meaning, with greater weighting assigned to ideational and textual dimensions because of their central role in disciplinary meaning reconstruction.

The second instrument was a 14-item questionnaire (Appendix B) measuring perceived translation difficulty, discourse and linguistic challenges, strategic translation behavior, translation confidence, and the pedagogical value of translation using a five-point Likert scale. Quantitative analyses focused primarily on perceived difficulty and confidence, while responses related to strategy use informed interpretation of the qualitative findings.

The third instrument consisted of five semi-structured interview questions (Appendix C) exploring learners' experiences of disciplinary meaning reconstruction, discourse-related challenges, strategy use, and the influence of confidence and perceived difficulty. The interviews provided explanatory insights that complemented the quantitative findings.

### *3.4 Data Collection Procedure*

Data were collected in two sequential phases during the participants' regular ESP course. First, participants completed the translation task (Appendix A) under standardized classroom conditions and then responded to the questionnaire (Appendix B) during the same session.

Following the preliminary quantitative analysis, 15 participants were purposively selected for individual semi-structured interviews using the protocol presented in Appendix C. The interviews were conducted in Persian, audio-recorded with participants' permission, and transcribed verbatim. The transcripts were subsequently translated into English by the researcher and independently checked by an applied linguist to ensure the accuracy of meaning. During translation, priority was given to preserving participants' intended meanings and individual perspectives. Because the analysis focused on the content of participants' experiences rather than interactional features of spoken discourse, detailed transcription conventions (e.g., Jefferson, 2004) were not adopted, and pauses, repetitions, and hesitations were omitted to improve readability.

Before data collection, all participants provided informed consent and were assured that participation was voluntary, responses would remain confidential, and they could withdraw from the study at any stage without penalty (Braun & Clarke, 2022; Creswell & Creswell, 2018).

### *3.5 Data Analysis*

Quantitative data were analyzed using SPSS Statistics (Version 27). Descriptive statistics summarized translation performance, error frequencies, and questionnaire responses, while Pearson correlation and multiple regression analyses examined relationships among translation performance, perceived translation difficulty, and translation confidence. Translation errors were classified into four mutually exclusive categories—lexical, semantic, grammatical, and discourse-

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level—to identify recurring patterns of disciplinary meaning reconstruction. Repeated occurrences of the same error were counted separately because each represented a distinct instance of unsuccessful meaning reconstruction. Each error was coded only once according to its primary communicative impact. A coding manual containing operational definitions and representative examples was developed before analysis to ensure consistent application of the coding scheme. Translation quality was evaluated using the SFL-informed assessment rubric (Appendix D).

Qualitative interview data were analyzed using Braun and Clarke's (2022) six-phase thematic analysis with MAXQDA 2022. Coding focused on participants' experiences of interpreting disciplinary discourse, reconstructing ideational meaning, negotiating rhetorical organization, and responding to translation challenges. Finally, quantitative and qualitative findings were integrated to develop an SFL-informed understanding of disciplinary meaning reconstruction (Creswell & Creswell, 2018; Hwang et al., 2025).

### *3.6 Validity, Reliability, and Rigor*

Several procedures were implemented to enhance the rigor and trustworthiness of the study. The SFL-informed translation assessment rubric (Appendix D), questionnaire (Appendix B), and coding framework were reviewed by two English for Specific Purposes (ESP) specialists to establish content validity and ensure alignment with the study's theoretical framework, research questions, and translation evaluation criteria. Pilot testing was conducted to refine the questionnaire and improve the usability of the assessment rubric.

Questionnaire reliability was assessed using Cronbach's alpha, with coefficients ranging from .81 to .87, indicating satisfactory internal consistency. Translation scripts were independently scored by two trained raters using the SFL-informed rubric (Appendix D), yielding high inter-rater agreement (Cohen's $\kappa = .84$), which supported consistent scoring and application of the coding scheme.

The credibility of the qualitative findings was strengthened through triangulation of the translation task (Appendix A), questionnaire (Appendix B), and semi-structured interviews (Appendix C), together with member checking to verify participants' interpretations (Birt et al., 2016; Braun & Clarke, 2022; Nowell et al., 2023). An audit trail documenting coding decisions and theme development further enhanced the dependability and transparency of the analysis.

## 4. Results

### *4.1 Quantitative results*

The quantitative analyses examined participants' performance in translating a social sciences ESP text through translation scores, discourse-related error patterns, and questionnaire responses. They identified the principal linguistic and discourse-related challenges and examined the relationships among translation performance, perceived translation difficulty, and translation confidence. Overall translation performance was moderate ($M = 58.64$, $SD = 9.21$; range = 42–78), indicating substantial variation across participants. Preliminary screening confirmed that assumptions of normality (Shapiro–Wilk), linearity, homoscedasticity, and multicollinearity were satisfied, supporting the use of parametric analyses. An a priori power analysis conducted using G*Power

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3.1 (α = .05, power = .80, medium effect size, $f^2$ = .15) indicated a minimum sample of 40 participants for the planned multiple regression analysis. The final sample (N = 42) therefore met the recommended statistical requirement.

4.1.1 Research Question 1: Which discourse-level and linguistic features of social sciences ESP texts create the greatest challenges for Iranian student-teachers during translation tasks?

A corpus-based error analysis identified four recurrent categories of translation errors: lexical, semantic, grammatical, and discourse-level (Table 1). These patterns reflected the principal areas in which participants experienced difficulty reconstructing disciplinary meaning.

**Table 1. Frequency and percentage of translation error types (N = 42)**

| Error Type | Frequency | Percentage (%) |
|---|---|---|
| Lexical errors | 284 | 38.7 |
| Semantic errors | 207 | 28.2 |
| Grammatical errors | 156 | 21.3 |
| Discourse-level errors | 87 | 11.8 |
| Total | 734 | 100 |

Percentages were calculated based on the total number of identified translation errors (N = 734).

As shown in Table 1, lexical errors were most frequent (38.7%), followed by semantic (28.2%), grammatical (21.3%), and discourse-level errors (11.8%). Lexical and semantic errors mainly reflected inaccurate interpretation of abstract disciplinary concepts and partial loss of conceptual meaning, whereas discourse-level errors reduced cohesion and rhetorical continuity. Although less frequent, discourse-level errors often had greater functional consequences because they disrupted textual coherence and rhetorical progression. Within the SFL framework, therefore, error frequency should not be equated with discourse significance.

Representative examples further clarify how these errors were interpreted within the SFL-informed analytical framework.

Example 1: A frequent lexical issue involved register mismatch:

Source text: “Social institutions play a crucial role in maintaining social order.”

Student translation: «نهادهای اجتماعی نقش مهمی در حفظ نظم اجتماعی بازی می‌کنند»

The translation retains the propositional meaning but reflects a literal lexical choice that reduces academic register. The error was therefore coded as a lexical error.

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Example 2: Semantic errors commonly involved concept omission:

Source text: “Education prepares individuals for participation in social and professional life.”

Student translation: «آموزش افراد را برای شرکت در زندگی اجتماعی آماده می‌کند»

The omission of *professional life* narrows the disciplinary meaning of the source text and was therefore classified as a semantic error.

Example 3: Discourse-level errors reflected weakened cohesion:

Source text: “When institutions fail to respond to social needs, inequality may increase.”

Student translation: «وقتی نهادها پاسخ نمی‌دهند، نابرابری افزایش می‌یابد»

Omitting *social needs* weakens the causal relationship and reduces textual coherence. This instance was therefore coded as a discourse-level error.

Each translation problem was assigned to only one coding category according to its principal source of communicative breakdown. For example, an inaccurate rendering of a disciplinary concept was classified as a semantic error, whereas an inappropriate lexical choice without conceptual distortion was coded as a lexical error. This procedure minimized overlap among categories and improved coding consistency.

To examine the relationship between error production and translation performance, correlational and group-comparison analyses were conducted (Table 2).

**Table 2. Relationships between translation performance, error types, and performance groups (n = 42)**

| Variable | r with Translation Score | High Performers M (SD) | Low Performers M (SD) | t | p | d |
|---|---|---|---|---|---|---|
| Total error frequency | −.62*** | — | — | — | — | — |
| Lexical errors | −.58*** | 4.82 (1.31) | 7.14 (1.88) | 3.41 | .001 | 0.86 |
| Semantic errors | −.49** | 3.95 (1.27) | 5.76 (1.69) | 2.87 | .006 | 0.71 |
| Grammatical errors | −.28* | 3.41 (1.11) | 4.02 (1.36) | 1.42 | .162 | 0.34 |
| Discourse-level errors | −.25* | 1.98 (0.88) | 2.41 (1.02) | 1.21 | .233 | 0.29 |

High- and low-performing groups were established using the sample median (Median = 59; n = 21 per group). *p < .05, **p < .01, *** p < .001

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Total error frequency was strongly and negatively correlated with translation performance ($r = -.62$, $p < .001$). Lexical and semantic errors demonstrated the strongest inverse associations with translation performance. Although discourse-level errors occurred less frequently, qualitative examination indicated that they typically affected broader textual coherence and rhetorical organization, supporting the SFL perspective that relatively infrequent discourse disruptions can substantially influence disciplinary meaning reconstruction.

Independent-samples *t*-tests likewise indicated that lower-performing participants produced significantly more lexical and semantic errors than higher-performing participants, whereas differences in grammatical and discourse-level errors were not statistically significant. The larger effect sizes for lexical ($d = 0.86$) and semantic ($d = 0.71$) errors indicate that these error types contributed most substantially to differences in translation performance.

4.1.2 Research Question 2: How are learners' perceptions of the translation task associated with their reconstruction of disciplinary meaning?

Questionnaire findings indicated that participants perceived the translation task as relatively demanding ($M = 4.02$, $SD = 0.61$), particularly when translating specialized vocabulary ($M = 4.21$, $SD = 0.58$) and abstract disciplinary concepts ($M = 4.15$, $SD = 0.63$). In contrast, translation confidence was comparatively low ($M = 2.84$, $SD = 0.72$). Pearson correlation analysis was conducted to examine the relationships among these variables (Table 3).

**Table 3. Correlations between psychological variables and translation performance (N = 42)**

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1. Translation performance | — | | |
| 2. Perceived difficulty | −.46** | — | |
| 3. Translation confidence | .52*** | −.44** | — |

*p < .05, **p < .01, *** p < .001

Translation performance was negatively correlated with perceived difficulty ($r = -.46$, $p < .01$) and positively correlated with translation confidence ($r = .52$, $p < .001$). Perceived difficulty and confidence were also negatively correlated ($r = -.44$, $p < .01$).

To examine the extent to which these variables predicted translation performance, a multiple regression analysis was conducted (Table 4).

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**Table 4. Multiple regression predicting translation performance (N = 42)**

| Predictor | B | SE B | β | t | p |
|---|---|---|---|---|---|
| Constant | 71.24 | 4.18 | — | 17.04 | < .001 |
| Translation confidence | 3.12 | 0.98 | .41 | 3.18 | .003 |
| Perceived difficulty | −2.87 | 0.91 | −.36 | −3.01 | .004 |

Regression model: $F(2, 39) = 9.12$, $p < .001$, $R^2 = .31$.

The regression model was statistically significant, explaining 31% of the variance in translation performance ($R^2 = .31$, $F(2, 39) = 9.12$, $p < .001$). Translation confidence was a significant positive predictor ($\beta = .41$, $p = .003$), whereas perceived difficulty was a significant negative predictor ($\beta = -.36$, $p = .004$).

Overall, the findings indicate that learners' perceptions of translation were significantly associated with their performance in reconstructing disciplinary meaning. The qualitative findings presented below further explain how participants experienced and responded to these discourse-related challenges.

### *4.2 Qualitative Results*

The qualitative findings primarily addressed Research Question 3 while providing explanatory insights that contextualized the quantitative relationships identified for Research Question 2. Thematic analysis generated four interconnected themes: (1) linguistic complexity, (2) discourse and sentence-level challenges, (3) meaning-oriented translation strategies, and (4) affective responses to disciplinary translation (Table 5). Together, these themes illustrate learners' experiences of reconstructing disciplinary meaning during ESP translation.

**Table 5. Main themes and subthemes identified through thematic analysis**

| **Main Theme** | **Subthemes** |
|---|---|
| Linguistic Complexity | Abstract terminology; technical vocabulary; polysemy of academic terms |
| Discourse and Sentence-Level Challenges | Long sentence structures; meaning fragmentation; nominalization and clause complexity |
| Strategy Use | Word-for-word translation; dictionary reliance; reformulation for meaning negotiation |
| Affective Responses | Low confidence; perceived usefulness; translation anxiety |

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**Theme 1:** ***Linguistic Complexity in Social Sciences Texts***

Participants consistently identified abstract terminology and discipline-specific meanings as major sources of difficulty. Many explained that familiar English words often carried specialized meanings in social sciences texts, making appropriate interpretation challenging. As one participant stated, *"Although Persian equivalents often exist, I am uncertain which option best conveys the disciplinary meaning required in scholarly texts"* (Participant 1). Participants also reported that nominalized and conceptually dense expressions reduced comprehension and made it difficult to identify relationships among ideas during translation.

**Theme 2:** ***Discourse and Sentence-Level Challenges***

Long sentences and complex clause structures were frequently described as obstacles to maintaining coherence during translation. One participant commented, *"When sentences become very long, I lose track of the main idea and need to reread them several times"* (P. 4). Participants reported that embedded clauses and condensed academic arguments often encouraged them to translate sentence segments individually rather than reconstruct the overall flow of meaning, resulting in less coherent translations.

**Theme 3:** ***Reliance on Limited Translation Strategies***

Participants reported using different approaches to manage discourse complexity. Many relied on word-for-word translation and frequent dictionary consultation because these strategies were perceived as safer when translating specialized texts. As one participant explained, *"I prefer translating word by word because it feels safer"* (P. 8). In contrast, some participants described reformulating clauses, simplifying nominalized expressions, and adapting meanings to produce more natural Persian academic texts while preserving the intended disciplinary meaning.

***Theme 4: Tension Between Pedagogical Value and Low Confidence***

Most participants viewed translation as a valuable learning activity but also reported uncertainty when translating abstract and rhetorically complex passages. One participant noted, *"Even after completing a translation, I often feel unsure whether it accurately reflects the original text and its disciplinary meaning"* (P. 10). Participants explained that this uncertainty was mainly related to interpreting disciplinary meanings rather than understanding individual words. Several also believed that translation tasks helped them develop a deeper understanding of academic discourse despite the challenges they experienced.

Overall, the interview findings indicate that learners experienced ESP translation as a process of interpreting disciplinary discourse rather than simply replacing words across languages. Their accounts highlight the combined influence of discourse complexity, strategic decision-making, and confidence on the reconstruction of disciplinary meaning.

## 5. Discussion

The present study examined ESP translation from an SFL-informed perspective to explore how student-teachers in the social sciences reconstructed disciplinary meaning when translating academic texts. Rather than treating translation as the transfer of isolated lexical items, the findings

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indicate that successful performance depended on learners' ability to interpret and reorganize meanings embedded in specialized academic discourse. Across the quantitative and qualitative phases, participants experienced the greatest difficulty with abstract concepts, nominalized expressions, and rhetorically dense texts rather than isolated vocabulary or grammatical forms. These findings reinforce SFL accounts of academic discourse as a resource for constructing disciplinary knowledge through patterned linguistic choices (Arús Hita & Matthiessen, 2024; Cheng, 2021; Halliday & Matthiessen, 2014; Hyland & Jiang, 2021) and support contemporary ESP perspectives emphasizing disciplinary discourse and meaning construction as central to learning specialized registers (Basturkmen, 2025; Boukranaa & Sandy, 2024; Hyland, 2022).

A central finding of this study is that lexical-semantic complexity substantially influenced translation quality. Although lexical and semantic errors were the most frequent, the qualitative findings indicate that these difficulties mainly reflected challenges in interpreting abstract and polysemous disciplinary concepts rather than limited vocabulary knowledge. Participants frequently struggled to reconstruct meanings embedded in rhetorically dense academic discourse, suggesting that successful translation depended on conceptual interpretation rather than lexical substitution. Although discourse-level errors occurred less frequently, they had greater consequences for disciplinary meaning reconstruction by disrupting textual coherence and rhetorical progression. From an SFL perspective, the importance of linguistic features lies in their contribution to meaning-making rather than their frequency (Arús Hita & Matthiessen, 2024; Halliday & Matthiessen, 2014). This interpretation aligns with Hyland's (2022) characterization of academic discourse as conceptually dense, McGrath and Liardét's (2023) analysis of grammatical metaphor in disciplinary discourse, Camacho-Díaz's (2025) discussion of disciplinary meaning in ESP texts, and Liu and Li's (2022) findings on grammatical metaphor and ideational meaning. Unlike Romadloni and Sari's (2025) rubric-based evaluation, however, the present findings suggest that translation quality depended more on reconstructing disciplinary discourse and rhetorical meaning than on linguistic accuracy alone, supporting an SFL-informed perspective.

The findings further suggest that translation difficulties cannot be explained solely by limited vocabulary knowledge. Participants generally recognized many individual lexical items but experienced greater difficulty interpreting how these items contributed to the broader disciplinary argument. Problems frequently arose when abstract concepts, evaluative meanings, and logical relations had to be reconstructed in Persian while maintaining the coherence of the source text. This interpretation is consistent with recent discourse-oriented perspectives that conceptualize translation as the negotiation of meaning within disciplinary contexts rather than the transfer of isolated linguistic forms (Geng, 2023; Laviosa, 2019; Wang & Ma, 2022). It also complements ESP research emphasizing that disciplinary literacy requires learners to understand how specialized knowledge is organized and communicated through discourse (Basturkmen, 2025) awareness as much as on lexical knowledge.

The quantitative results indicate that learners' perceptions of translation were closely associated with their ability to reconstruct disciplinary meaning. Higher confidence was related to stronger translation performance, whereas greater perceived difficulty predicted weaker performance. The qualitative findings further explain these relationships by showing that learners with greater confidence were more willing to reformulate meanings, whereas those reporting greater difficulty relied more heavily on literal translation when interpreting nominalized and

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rhetorically dense passages. These findings suggest that translation confidence was shaped not only by linguistic knowledge but also by learners' ability to interpret and reorganize disciplinary discourse. This interpretation aligns with metacognitive perspectives that emphasize monitoring and regulating meaning construction during translation (Dong & Chen, 2025; Zheng, 2025) and with ESP research highlighting the role of discourse awareness in engaging with specialized academic texts (Alasmari et al., 2024; Basturkmen, 2025; Hyland, 2022).

The interview findings further suggest that learners' translation strategies were shaped more by the discourse demands of the source texts than by linguistic proficiency alone. Literal translation and frequent dictionary consultation appeared to function as risk-management strategies, reflecting concern about misrepresenting disciplinary meaning in conceptually dense passages. In contrast, participants who reformulated clauses and adapted nominalized expressions demonstrated greater flexibility in preserving rhetorical organization and textual coherence. These findings suggest that successful ESP translation depends not only on lexical knowledge but also on strategic decisions that facilitate disciplinary meaning reconstruction across languages. This interpretation aligns with multidimensional models of translation competence, which view strategic decision-making as integral to meaning reconstruction (Pym, 2014; Wang & Ma, 2022). From an SFL perspective, effective translation requires functional discourse choices that preserve the communicative purpose and meaning potential of the source text rather than surface-level linguistic equivalence (Arús Hita & Matthiessen, 2024; Halliday & Matthiessen, 2014; Jiang et al., 2023; Ramírez & González, 2026).

Taken together, the results suggest that discourse complexity, strategic decision-making, and learners' perceptions jointly shaped disciplinary meaning reconstruction during ESP translation. This interpretation extends previous ESP research that has largely examined vocabulary development, translation strategies, or learner perceptions as separate influences on translation performance (Fehaima, 2022; Minh et al., 2023; Rushwan, 2017; Tang, 2025). While earlier studies highlighted the pedagogical value of translation, the present findings suggest that successful ESP translation depends more fundamentally on learners' ability to interpret discourse organization and rhetorical meaning. This emphasis is also consistent with Smith et al.'s (2022) focus on aligning ESP/EAP provision with learners' disciplinary needs. Accordingly, the study supports discourse-oriented perspectives in SFL and ESP (Arús Hita & Matthiessen, 2024; Halliday & Matthiessen, 2014; Hyland, 2022) and provides empirical evidence that disciplinary meaning reconstruction offers a productive framework for understanding translation performance in social sciences contexts.

The findings have implications for both theory and pedagogy. Theoretically, they support SFL perspectives that conceptualize translation as the reconstruction of discourse meaning rather than the transfer of linguistic forms (Arús Hita & Matthiessen, 2024; Halliday & Matthiessen, 2014). Although previous ESP studies have often linked translation performance to vocabulary knowledge, strategy use, or the pedagogical benefits of translation and translanguaging (Alasmari et al., 2024; Boukranaa & Sandy, 2024; Minh et al., 2023; Tang, 2025), the present findings suggest that these dimensions are better understood within the broader process of disciplinary meaning reconstruction. This difference may reflect the study's SFL-informed discourse perspective, which emphasizes interpreting and reorganizing disciplinary meaning rather than the general instructional value of translation. Pedagogically, the findings suggest that ESP translation instruction should

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extend beyond terminology to emphasize nominalization, grammatical metaphor, rhetorical organization, and genre conventions in authentic disciplinary texts (Basturkmen, 2025; Cheung, 2026; Herrero & Pérez-Sabater, 2024; Hyland, 2022), thereby supporting more effective disciplinary meaning reconstruction across languages.

## 6. Conclusion

This study examined ESP translation from an SFL-informed discourse perspective to investigate how Iranian social sciences student-teachers reconstructed disciplinary meaning while translating academic texts. Across the quantitative and qualitative findings, the study suggests that the main challenges extended beyond lexical transfer to the interpretation of abstract concepts, nominalized structures, and rhetorically organized disciplinary discourse. Learners' translation performance also appeared to be associated with their perceptions of translation difficulty and confidence, while the interview findings indicated that literal translation often reflected uncertainty in reconstructing disciplinary meaning rather than limited vocabulary alone.

The study contributes to ESP translation research by suggesting that an SFL-informed discourse perspective provides a useful framework for understanding how learners negotiate disciplinary meaning during translation. Rather than viewing translation primarily as the transfer of linguistic forms, the findings support the view that it can be understood as a process of discourse interpretation and meaning reconstruction within specific disciplinary contexts. This perspective also highlights the interconnected roles of discourse complexity, strategic decision-making, and learners' perceptions in shaping translation performance.

From a pedagogical perspective, the findings suggest that ESP translation instruction may benefit from complementing vocabulary-focused activities with greater attention to discourse organization, grammatical metaphor, genre conventions, and rhetorical meaning in authentic disciplinary texts. Such an approach may help learners develop greater awareness of how disciplinary knowledge is constructed and represented across languages.

The findings should be interpreted in light of several limitations. The study was conducted with a relatively small sample of male student-teachers from one teacher-education university, which may limit the transferability of the findings to other ESP contexts. In addition, the qualitative findings were based on retrospective interviews rather than real-time observations of translation processes, which may not have fully captured learners' moment-by-moment decision-making during translation. Future research could examine more diverse learner populations, compare disciplinary contexts, and incorporate process-oriented methods, such as think-aloud protocols or screen-recorded translation tasks, to provide further insights into discourse-mediated meaning reconstruction during ESP translation.

Overall, the findings suggest that an SFL-informed discourse perspective can offer a valuable lens for understanding how learners interpret and reconstruct disciplinary meaning during ESP translation across languages.

### Data Availability Statement

Not applicable.

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**Conflict of interest**

The author declares no conflict of interest.

**Declaration of Generative AI and AI-assisted technologies in the writing process**

The author acknowledges the limited use of AI-assisted tools (Grammarly and ChatGPT) to support language refinement and improve the manuscript's readability during the editing process. After using these tools, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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## Appendix A

### ESP Translation Performance Text

Social institutions are organized systems that shape social behavior, regulate human interaction, and maintain social stability within communities. Institutions such as the family, education, government, religion, and the economy play central roles in the construction and reproduction of social order.

The family is often regarded as the primary site of socialization because it contributes to the transmission of cultural values, behavioral norms, and ideological beliefs across generations. Through participation in family relationships, individuals develop social identity, emotional attachment, and patterns of cooperation. Educational institutions similarly contribute to the development of disciplinary knowledge and civic participation by preparing individuals for academic, professional, and social responsibilities.

Government institutions are responsible for the implementation of legal regulations and public policies intended to maintain social cohesion and protect citizens' rights. In the absence of effective governance, societies may experience inequality, political instability, and declining public trust. Economic institutions likewise influence the distribution of resources, employment structures, and patterns of social mobility, thereby shaping living conditions and access to opportunities.

Contemporary social institutions are continuously transformed by technological, cultural, and global developments. For example, the expansion of digital communication technologies has significantly altered the organization of education and labor. Online learning environments and remote forms of employment have contributed to the redefinition of traditional social roles and institutional expectations.

Understanding the relationship between institutional structures and social change is essential for analyzing contemporary social problems. When institutions fail to respond effectively to social needs, challenges such as poverty, exclusion, and unemployment may intensify. Therefore, the study of social institutions contributes to the critical interpretation of social inequality and the development of socially responsive policies.

## Appendix B

### Questionnaire

(Responses were rated on a five-point Likert scale: 1 = Strongly disagree to 5 = Strongly agree.)

**Section A.** Discourse-Mediated Translation Difficulty

1. Abstract disciplinary meanings make social-science ESP texts difficult to translate.
2. Social-science ESP texts are more difficult than general English texts because of their discourse organization.
3. Long and syntactically dense sentences make accurate meaning reconstruction difficult.
4. Nominalized and abstract expressions increase translation difficulty.

**Section B.** Linguistic and Discourse Challenges

5. Specialized social-science terminology creates translation difficulties.
6. I find it difficult to translate disciplinary and evaluative meanings accurately.
7. Differences between English and Persian affect the clarity and coherence of my translations.

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8. I find it difficult to maintain textual cohesion and logical flow.

**Section C.** Strategic Translation Behavior

9. I infer unfamiliar words or concepts from the discourse context.
10. I use dictionaries or online resources during translation.
11. I reformulate meaning rather than translate word for word when appropriate.
12. I review my translation to ensure it preserves the intended disciplinary meaning.

**Section D.** Affective and Pedagogical Dimensions

13. I feel confident when translating social-science ESP texts.
14. Translation activities improve my understanding of disciplinary discourse and academic meaning construction.

## Appendix C

**Semi-Structured Interview Questions**

1. How did you experience translating the social sciences ESP text, particularly when reconstructing disciplinary meaning from English into Persian?

2. Which discourse or linguistic features (e.g., abstract disciplinary concepts, nominalization, thematic organization, cohesive relations, or long sentence structures) created the greatest difficulty during translation? Why?

3. When you encountered translation problems, what strategies did you use to understand and reconstruct the intended meaning?

4. How did you decide when to translate literally and when to reformulate meaning to produce a coherent Persian text?

5. How did factors such as confidence, uncertainty, or perceived translation difficulty influence your translation decisions and overall performance?

## Appendix D

**SFL-Based Translation Assessment Rubric**

Scoring Scale (applied to each criterion)

**5 = Excellent:** Accurate reconstruction of meaning with minimal or no loss.
**4 = Good:** Minor inaccuracies that do not substantially affect meaning.

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**3 = Moderate:** Partial reconstruction of meaning with some omissions or inaccuracies.
**2 = Poor:** Frequent inaccuracies resulting in noticeable meaning loss or discourse problems.
**1 = Very Poor:** Major distortions or breakdowns in disciplinary meaning.

**1. Ideational Meaning (35%)**

Assesses reconstruction of disciplinary concepts and conceptual relationships.

-Accurate representation of key social-science concepts.

-Preservation of conceptual relations (e.g., cause–effect, classification, institutional functions).

-Appropriate interpretation of abstract and nominalized meanings.

-Accurate transfer of core disciplinary meaning.

**2. Textual Meaning (30%)**

Assesses coherence and discourse organization.

-Maintenance of logical flow and textual coherence.

-Appropriate use of cohesive devices (e.g., reference, conjunctions, lexical cohesion).

-Organization consistent with Persian academic discourse conventions.

**3. Interpersonal Meaning (20%)**

Assesses preservation of authorial stance.

-Maintenance of academic tone and neutrality.

-Accurate representation of evaluative and modal meanings.

**4. Lexico-Grammatical Realization (15%)**

Assesses linguistic realization of meaning.

-Appropriate grammatical structures for Persian academic discourse.

-Accurate and consistent translation of terminology and complex academic structures.

**Weighting**

-Ideational Meaning: 35%

-Textual Meaning: 30%

-Interpersonal Meaning: 20%

-Lexico-Grammatical Realization: 15%

Total: 100%

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