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Cognitive Processing and Self-Reflection in Student Translation of Historical Paratext Elements: An Ability-Based Analysis of Indonesian–English Translation

¹Lia Agustina Damanik

(Corresponding Author)

liaagustinadamanik@stain-madina.ac.id

STAIN Mandailing Natal, Indonesia

²Resdilla Pratiwi

resdillapratiwi@stain-madina.ac.id

STAIN Mandailing Natal, Indonesia

ABSTRACT

Background: This study examines the cognitive processes and self-reflective practices underlying translation decision-making among sixth-semester student translators when translating paratextual elements of Indonesian online historical magazine articles from Historia.id into English.

Aims: It investigates how students with different levels of translation and analytical ability identify problems, evaluate alternatives, reflect on their choices, and revise their translations.

Methods: Employing a qualitative descriptive design through a classroom-based field study, the research was conducted over four weeks at STAIN Mandailing Natal during the 2025/2026 academic year. Twenty students who had completed two semesters of Translation coursework were classified through a baseline diagnostic task into high-ability ($n = 8$), medium-ability ($n = 6$), and low-ability ($n = 6$) groups. Data were collected through draft and final translations, translation logs, revision records, retrospective annotated translations, reflective journals, semi-structured interviews, and classroom observations, and were analyzed thematically using cross-group comparison.

Results: The findings demonstrate that translating historical paratexts involves a recursive cognitive process comprising problem identification, contextual knowledge activation, alternative generation, functional evaluation, and revision. Self-reflection emerged as a key factor distinguishing decision-making quality across ability groups. High-ability students generated multiple alternatives, activated extensive historical knowledge, and revised deliberately; medium-ability students identified problems but generated fewer alternatives and revised reactively; while low-ability students frequently overlooked paratextual problems, relied on literal transfer, and revised superficially.

Implications: The study concludes that reflective and context-sensitive decision-making is central to developing translation competence in historical paratexts. It highlights the need for differentiated and scaffolded pedagogy that strengthens problem identification, contextual reasoning, alternative generation, and reflective revision.

Keywords: *Cognitive translation process; Indonesian–English translation; paratext elements; translation ability; translation pedagogy; translator self-reflection*

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1. INTRODUCTION

Translation is a complex cognitive and cross-cultural activity that extends beyond the transfer of propositional meaning between two languages (Feni Natasya Silaban et al., 2025). As translation studies has developed into an autonomous discipline, scholarly attention has increasingly shifted from translation products toward the cognitive processes underlying translators' decisions (Adha et al., 2024; Maulina et al., 2025). This development has contributed to process-oriented approaches that conceptualize translators as active cognitive agents who draw upon strategies, prior experience, contextual knowledge, and metacognitive awareness (Hanane Belgaid, 2025). Within this contemporary research landscape, cognitive translation and interpreting studies have emerged as a recognized subfield with distinctive theoretical models, methodological approaches, and empirical concerns.

This subfield rests on the understanding that translation decisions, particularly those involving culturally embedded texts, are neither spontaneous nor mechanical (Zhao et al., 2024). Rather, they result from recursive cognitive activities involving textual comprehension, activation of cultural and historical schemas, generation of alternatives, functional evaluation, and revision (Zoxidovna, 2025). Within this framework, the ability to critically reflect on one's own translation choices, commonly referred to as translator self-reflection, represents an important component of decision-making quality. Self-reflection enables translators to evaluate the adequacy of their choices, identify potential problems, consider alternative solutions, and revise their translations in response to contextual and communicative requirements (Xiao & Martín, 2020).

In parallel with the development of cognitive approaches, research on paratext in translation has expanded considerably (Akiba, 2025). Paratext is conceptualized as the verbal and non-verbal elements that surround and present a text, including titles, subtitles, captions, quotations, terminology, intertextual references, and other framing elements. In digital journalistic contexts, paratexts do more than simply accompany the main text (He et al., 2025). They influence how readers interpret, contextualize, and evaluate the historical and cultural information presented (Al-Batineh & Al Tenaijy, 2024). Consequently, translating paratextual elements requires not only bilingual competence but also contextual knowledge, cultural sensitivity, and reflective judgement.

This issue is particularly relevant to Indonesian historical journalism. Indonesia possesses a rich and contested historical heritage, yet access to Indonesian historical narratives for international readers remains relatively limited (Tavares et al., 2023). Historia.id, one of Indonesia's prominent online history-journalism platforms, publishes articles covering historical figures, events, and social developments from the pre-independence and post-independence periods (Utomo, 2025). Its articles contain numerous culturally and historically loaded paratextual elements, including evocative titles, context-compressing subtitles or decks, captions accompanying archival photographs, quotations attributed to historical figures, and institutional and culture-specific terminology (Al Mudarra, 2025). These elements frequently encode historical meanings and cultural references that cannot always be transferred directly into English (Fauzi et al., 2026). Moreover, many Historia.id articles remain unavailable in English, making this material a significant but challenging domain for translation research and pedagogy (Rosida & Herdi, 2024).

More specifically, the translation of historical-journalistic paratexts in Historia.id presents a distinctive cognitive challenge for translators because culturally and historically embedded meanings are often compressed into short textual units such as titles, subtitles, captions, quotations, and institutional terminology (Amalia et al., 2026). In translating these elements into English, translators are required not only to comprehend linguistic meaning but also to activate historical and cultural knowledge, interpret contextual nuances, generate and compare alternative expressions, and

evaluate the communicative appropriateness of their decisions for international readers. Such conditions make translator self-reflection particularly significant, as translators need to critically reassess their initial choices, recognize potential semantic or cultural distortions, justify preferred translation strategies, and revise their outputs through reflective decision-making ([Al-Islam, 2025](#)). Despite the growing body of research on cognitive translation processes, limited attention has been devoted to examining how translators cognitively negotiate culturally embedded historical paratexts and how self-reflective practices shape their translation decisions in the context of Indonesian digital historical journalism ([Darweesh, 2026](#); [Yunita et al., 2026](#)). This unique context therefore motivates the present study to investigate the cognitive processes and translator self-reflection involved in translating *Historia.id* paratexts into English.

1.1 Research Gap and Novelty

Despite growing scholarly interest in cognitive translation, translator self-reflection, and paratextual translation, several important gaps remain in the existing literature. Previous studies on translation in Indonesia have investigated students' difficulties in translating cultural expressions, journalistic texts, idiomatic expressions, and other culture-specific language, demonstrating that contextual and cultural knowledge substantially influences translation decisions ([Zheng, 2025](#)). Other studies have examined translation from cognitive and process-oriented perspectives, highlighting the importance of problem-solving, strategic decision-making, contextual interpretation, and metacognitive awareness in shaping translators' choices ([Su, 2025](#)). Research on translator reflection has likewise indicated that self-reflective activities can help translators identify problems, evaluate alternative solutions, monitor the adequacy of their choices, and improve translation quality ([Alblooshi et al., 2025](#)). Meanwhile, studies of paratext have demonstrated that titles, subtitles, captions, quotations, and other framing elements play an important role in constructing and guiding readers' interpretation of translated texts, particularly in culturally and historically sensitive contexts ([Meutia et al., 2025](#)). However, these strands of research have largely developed separately. Studies of student translation have predominantly focused on the translation of the main text or the assessment of translation products, while cognitive studies have more often examined translation processes without specifically addressing historically embedded paratextual materials ([Ibrahim, 2026](#)).

Similarly, research on paratextual translation has paid considerable attention to its textual, cultural, and communicative functions, but has provided less empirical insight into the moment-to-moment cognitive processes through which student translators identify paratextual problems, generate and evaluate alternatives, make decisions, and revise their choices ([X. Li, 2026](#)). The role of self-reflection at these stages also remains insufficiently understood, particularly when translators encounter culturally and historically condensed information ([Banner et al., 2026](#)). Furthermore, limited comparative attention has been given to how students with different levels of translation-and-analysis ability approach such cognitive and reflective tasks. Consequently, it remains unclear whether high-, medium-, and low-ability student translators differ in their identification of translation problems, activation of contextual knowledge, generation and evaluation of alternatives, and subsequent revision of decisions ([Hananberg et al., 2015](#)). Addressing these interconnected gaps, the present study examines the cognitive processes and self-reflective practices of student translators when translating culturally and historically embedded paratexts from *Historia.id* into English, while also comparing these processes across different levels of translation-and-analysis ability ([Xiao & Martín, 2020](#)).

This gap is important for translation pedagogy because without understanding these differences, teachers may find it difficult to provide appropriate guidance and learning activities for students with different abilities. It is also relevant to the international

accessibility of Indonesian historical content. Paratexts such as titles, captions, quotations, and cultural terminology often provide important information for international readers. Poor or overly literal translation may therefore reduce the clarity and cultural meaning of Indonesian historical narratives. To address this gap, the present study investigates the cognitive processes and self-reflective practices of sixth-semester student translators at STAIN Mandailing Natal when translating eight categories of paratexts from Historia.id articles. By comparing students with different levels of ability, the study seeks to provide a clearer understanding of their translation decision-making and to offer practical insights for reflective and differentiated translation pedagogy.

1.2 Research Questions

Based on the identified research gap, this study addresses three research questions:

1. What cognitive processes characterize sixth-semester student translators' decision-making when translating the paratextual elements of Indonesian online historical articles from Historia.id into English?
2. How do students' self-reflective practices shape their translation decisions across the eight identified paratext categories?
3. How do students with different levels of translation-and-analysis ability identify translation problems, reflect on their choices, generate alternatives, and revise their decisions in pursuit of functional and cultural equivalence?

By addressing these questions, the study aims to contribute to cognitive translation research by illuminating the processes underlying student translators' decisions when handling historical paratexts. It also seeks to provide pedagogically actionable insights for translator educators and curriculum designers concerning the development of reflective, context-sensitive, and differentiated translation instruction.

2. METHODS

2.1 Research Design

This study adopts a qualitative descriptive approach realized as a classroom-based field study. The qualitative descriptive approach is appropriate because the primary aim is to provide a detailed, low-inference account of the processes, deliberations, strategies, revisions, and self-reflective practices of student translators engaged in translating the paratexts of Indonesian online historical articles into English ([Christou, 2023](#)). The study is a field study in that data were generated in the authentic instructional setting in which the phenomenon naturally occurs, the Translation course classroom rather than a laboratory, so that the cognitive and reflective behavior observed is situated in real coursework conditions ([Ahmed, 2024](#)). The design also incorporates features of multiple-case logic: each ability subgroup constitutes a unit of analysis, and the study compares decision-making behavior across these units to identify both shared and ability-specific patterns ([Lim, 2024](#)). The researchers occupied the dual role of lecturer-researchers, observing and documenting the translation processes that unfolded within their own course; this positioning afforded direct access to the instructional context while requiring careful management of subjectivity through reflexivity, transparent documentation, audit trails, and the separation of description from evaluation.

2.2 Research Subjects

The study was conducted at STAIN Mandailing Natal, in the English Education Study Program (Tadris Bahasa Inggris), during the even semester of the 2025/2026 academic year. The participants were twenty sixth-semester students enrolled in the Translation course who, at the time of the study, had completed two consecutive semesters of Translation coursework and had therefore received systematic prior instruction in

translation theory, strategies, and practice. The participants were selected through total sampling of one intact class, a procedure consistent with the bounded, context-situated logic of field research (Riazi et al., 2023). As a demographic characteristic of the cohort, seventeen of the twenty students reported Mandailing as their mother tongue, with Indonesian as the language of education and English as the foreign language under study; these students may thus be described as functionally near-trilingual (Namiq & Zafarghandi, 2025). This demographic feature is reported here solely for the transparent description of the research population. It was not treated as a research variable, was not analyzed, and forms no part of the findings or claims of the study; the analytical focus is exclusively on translation-and-analysis ability.

To establish the analytical lens of the study, the participants were grouped by translation-and-analysis ability. In the first research meeting, before any treatment, all twenty students completed a baseline diagnostic task requiring them both to translate a short set of paratextual segments and to provide a written analytical justification of their choices. The task was scored by the two lecturer-researchers, working independently and then reconciling their scores, using a four-dimension rubric covering accuracy, acceptability, readability, and the quality of analytical reasoning, dimensions consistent with established Indonesian translation-quality assessment practice and with recent descriptive studies of student translation (Tomaszewski et al., 2020). On the basis of the reconciled scores, students were assigned to three ability subgroups: a high-ability subgroup (n = 8), a medium-ability subgroup (n = 6), and a low-ability subgroup (n = 6). Throughout the study each participant is identified by an anonymized code (HA1–HA8 for high-ability, MA1–MA6 for medium-ability, and LA1–LA6 for low-ability students). Table 1 summarizes the ability profile of the participants.

Table 1 Translation-and-Analysis Ability Profile of the Participants (n = 20)

Ability subgroup	n	Baseline diagnostic profile	Characteristic decision behaviour at baseline
High-ability (HA1–HA8)	8	Consistently accurate and acceptable renderings; readable target text; detailed, well-reasoned analytical justifications	Detects most paratextual problems; generates several alternatives; justifies choices with contextual reasoning
Medium-ability (MA1–MA6)	6	Generally accurate but uneven acceptability and readability; partial or briefly stated analytical justifications	Detects salient problems but not subtle ones; generates one or two alternatives; justifications often intuitive
Low-ability (LA1–LA6)	6	Frequent accuracy and acceptability problems; limited readability; minimal or absent analytical justification	Often does not detect paratextual problems; defaults to literal transfer; little or no alternative generation

2.3 Research Procedures

The study was carried out over four weeks, in four consecutive face-to-face meetings of the Translation course. Each meeting combined an authentic translation task with the structured generation of process data. The procedure was designed so that students experienced the translation of paratexts as part of their normal coursework while the researchers documented the cognitive and reflective dimensions of that work. Table 2 summarises the timeline.

Table 2 Research Timeline Across Four Weekly Meetings

Meeting	Focus	Activities and data generated
Week 1	Baseline diagnosis and orientation	Baseline diagnostic translation-and-analysis task; ability grouping; orientation to the eight paratext categories and to the use of translation logs; inventory of paratextual units in the corpus
Week 2	Translating framing paratexts	Students independently translate main titles, subtitles/decks, and visual captions, keeping written translation logs of difficulties, alternatives, and provisional choices; paired think-aloud for selected units; classroom observation
Week 3	Translating referential and culture-bound paratexts	Students translate person and place names, direct quotations, culture-specific terminology, intertextual references, and temporal references; revision activity with tracked drafts; classroom observation
Week 4	Retrospective reflection	Students produce retrospective annotated translations and reflective journals; semi-structured retrospective interviews conducted with selected students from each ability subgroup; member checking

2.4 Research Instruments

Consistent with the introspective and retrospective logic of process research, data were collected from multiple complementary sources. The principal instruments were: (a) students' draft and final translations of the paratextual units, providing the product record; (b) written translation logs, in which students recorded difficulties, candidate alternatives, resources consulted, and the reasons for provisional choices, completed concurrently with translation so as to remain close in time to the translational experience; (c) revision records in the form of tracked drafts, capturing the trajectory from initial to final version; (d) retrospective annotated translations, in which each significant paratextual decision was commented upon after completion; (e) reflective journals, in which students reflected more broadly on their decision-making; (f) semi-structured retrospective interviews with selected students from each ability subgroup, drawing on the stimulated-recall tradition to reconstruct deliberations not fully verbalized during translation; and (g) classroom observation notes maintained by the lecturer-researchers.

2.5 Data Analysis

Data were analyzed through reflexive thematic analysis combined with systematic coding and cross-group comparison. Analysis proceeded through five iterative stages. First, translation problems were identified by cross-referencing translation logs, revision records, and retrospective commentaries, and were classified into linguistic, cultural, historical, pragmatic, ideological, intertextual, temporal, and visual categories. Second, translation strategies were coded, including borrowing, adaptation, transposition, paraphrase, deletion, explication, functional equivalence, modulation, and literal translation. Third, revision types were categorized, spontaneous, post-hoc, insertion, deletion, substitution, and reordering and their cognitive functions interpreted. Fourth, self-reflection was coded according to its cultural, historical, ideological, narrative,

target-reader, ethical, and agentive orientations. Fifth, and centrally for this study, the coded data were compared across the three ability subgroups to identify how high-, medium-, and low-ability students differed in problem detection, alternative generation, strategy selection, revision behavior, and reflective depth.

Trustworthiness was ensured through methodological triangulation across the seven data sources, investigator triangulation between the two lecturer-researchers, an audit trail, thick description, code–recode procedures for internal consistency, researcher reflexivity, and member checking with participants. Participation was voluntary and based on informed consent; all data were anonymized, the diagnostic grouping was used solely for analytical purposes and not for course assessment, and students were assured that participation would not affect their grades.

Table 3 Paratextual Categories, Dominant Problems, Strategies, and Target-Text Functions

Paratextual category	Dominant problem	Dominant strategy	Function in the target text
Main title	Metaphor, paradox, ideology, rhetorical force	Functional equivalence, adaptation, modulation	Maintaining appeal and point of view
Subtitle / deck	Implicit subject, information density, causal relations	Explicitation, transposition, paraphrase	Concisely supplying the context
Visual caption	Archival attribution, implicit visual information, identity of figures	Standardization, institutional glossing, borrowing	Maintaining text–image relations and source credibility
Person / place names	Old and modern spellings, colonial names, source inconsistency	Retention of historical names, annotated correction, clarification	Maintaining accuracy and geographical orientation
Direct quotation	Register, foreign-language originals, retranslation	Register retention, source verification, translator’s note	Maintaining authenticity of voice
Culture-bound terminology	Absence of direct equivalent, ideological weight, local concepts	Borrowing with gloss, paraphrase, functional equivalence	Bridging local concepts and target readers
Intertextual reference	Foreign source titles, implicit reference, traceability	Retention of original title, parenthetical translation, source note	Maintaining historical authority
Temporal reference	Deixis, uncertainty, military precision, Indonesian periodisation	Clarification, retention of uncertainty, format conversion	Maintaining chronology and narrative register

3. FINDINGS AND DISCUSSION

3.1 Findings

This study examined three related aspects of student translators' decision-making when translating historical paratexts from *Historia.id* into English: the cognitive processes involved in translation decision-making, the role of self-reflection in shaping those decisions, and differences among students with high, medium, and low translation-and-analysis ability. The findings are therefore organized according to the three research questions. The first part addresses the cognitive processes underlying students' decisions across eight paratext categories. The second examines how self-reflection influenced the identification, evaluation, and revision of translation choices. The third compares the decision-making patterns of the high-ability (HA), medium-ability (MA), and low-ability (LA) groups. Representative examples from the translation drafts, logs, reflective journals, interviews, and observations are used to support the findings. Participant identities are reported using anonymised codes.

Cognitive Processes in Translating Historical Paratexts

The findings indicate that students' translation decision-making involved a sequence of interconnected processes: problem awareness, activation of contextual knowledge, generation of alternatives, functional evaluation, and revision. These processes were particularly visible when students encountered paratextual elements containing cultural, historical, ideological, or genre-specific meanings. However, the extent to which each process was activated varied considerably across the three ability groups. The eight paratext categories demonstrated different manifestations of these processes. Main titles required students to consider rhetorical effect, historical meaning, and journalistic conventions. Subtitles and decks mainly required syntactic restructuring and contextual explicitation. Visual captions required attention to archival information, institutional acronyms, and historical identities. Person and place names required historical verification and sensitivity to changes in orthographic and geographical conventions. Direct quotations required attention to source transmission, register, and authenticity. Technical, institutional, and culture-specific terminology required contextual interpretation and decisions concerning borrowing, glossing, and explicitation. Intertextual and bibliographic references required attention to source language and traceability, while relative temporal references required students to consider cultural and narrative meanings embedded in expressions of time.

For example, the title "*Konco Westerling Berburu Penjahat Perang Jepang*" (ART01-TTL) demonstrated how students responded differently to a culturally and historically loaded expression. High-ability students recognised that the word *konco* could not be transferred directly and generated several alternatives before selecting a contextually appropriate rendering. HA4 produced "Westerling's Man: Hunting Japanese War Criminals," reflecting an attempt to maintain the relational meaning while adapting the title to English journalistic conventions. Medium-ability students identified the difficulty but generated fewer alternatives, while low-ability students generally produced literal renderings such as "Westerling's Friend Hunting Japanese War Criminal." Similar differences were found in "*Catatan Digoelis: Perempuan dari Tanah Pembuangan*" and "*Busung Lapar di Tanah Subur*," where high-ability students considered rhetorical and historical meanings, whereas lower-ability students tended to prioritise word-level equivalence.

A similar pattern occurred in subtitles and decks. In ART01-DCK, the phrase "*Berinisiatif mencari para penjahat perang Jepang itu*" contains an implicit subject that must be inferred from the preceding context. High-ability students identified the implied subject and restructured the sentence, with HA5 and HA8 producing renderings that explicitly named Rudy Blatt and used the idiomatic expression "took it upon himself."

Medium-ability students generally supplied the missing subject but retained more literal constructions, whereas low-ability students frequently reproduced the Indonesian elliptical structure and produced incomplete English sentences. Visual captions revealed another dimension of contextual processing. In "*Pesta peringatan 25 tahun pernikahan J.H. Philippo dan Raden Soekaesih di Amsterdam. (KITLV)*" (ART02-CAP), high-ability students recognised that the acronym KITLV could be unfamiliar to international readers and expanded it in the translation. They also retained *Raden* because of its historical significance. Medium-ability students generally translated the event accurately but left KITLV unexplained, while low-ability students sometimes rendered the expression literally as "25 years wedding party." These results indicate that caption translation involved not only linguistic transfer but also assessment of the information required by target readers.

Person and place names further demonstrated the importance of contextual knowledge. In ART01-NAM03, high-ability students identified "Louis Montboutten" as a likely error referring to Louis Mountbatten and verified the historical name before correcting it. They also considered whether historical place names such as Boven Digoel, Batavia, and Weltevreden should be retained or supplemented with modern equivalents. Medium-ability students generally preserved the historical forms but provided less contextual information, while low-ability students were inconsistent in distinguishing historical and contemporary place names. Direct quotations presented problems related to source transmission and register. High-ability students recognized that some Indonesian quotations were themselves translated from other languages and therefore involved a potential retranslation issue. They also paid greater attention to register in quotations such as those attributed to Soekaesih. Medium-ability students generally produced acceptable translations without identifying the transmission issue, while low-ability students tended to translate literally and sometimes weakened the original register or quotation structure.

Technical, institutional, and culture-specific terminology produced the highest concentration of translation problems. High-ability students generally expanded unfamiliar acronyms such as NEFIS and KNIL at first occurrence and retained them consistently thereafter. They also used to borrow with glosses for terms such as *tokkeitai* and rendered historically specific expressions such as *pasal karet* according to their contextual meaning rather than translating them literally. Medium-ability students applied these strategies inconsistently, while low-ability students frequently retained unexplained acronyms or produced literal translations such as "rubber article." The same pattern appeared with *busung lapar*, where high-ability students considered the historical appropriateness of "hunger oedema" rather than replacing it with the modern clinical term "kwashiorkor." Intertextual and bibliographic references showed differences in source management. High-ability students tended to preserve original-language titles while providing English translations when necessary. For example, "*Indonesia, Een Politiestaat*" was retained and accompanied by "Indonesia: A Police State." Medium-ability students generally translated source titles without retaining the original, while low-ability students sometimes translated them literally or omitted them.

Relative temporal references also required contextual interpretation. For example, high-ability students rendered "*belum begitu lama menyerah*" as "not long after the surrender," making the historical reference clearer for English-speaking readers. For the culturally specific expression *subuh*, they generally used expressions such as "at around five in the morning" rather than simply "at dawn." Medium-ability students tended to use more general equivalents such as "at dawn," while low-ability students sometimes retained the Indonesian term without explanation. Overall, the findings for RQ1 show that student translation decision-making was not a single-step activity. It involved a sequence of problem identification, contextual activation, alternative generation, evaluation, and revision. The depth of these processes depended strongly on students'

ability to recognize the paratextual nature of the problem and to connect linguistic choices with historical, cultural, and communicative considerations.

Self-Reflective Practices in Translation Decision-Making

The findings for RQ2 demonstrate that self-reflection played an important role in how students evaluated and revised their translation decisions. However, reflective practices varied in depth and consistency across the three ability groups. High-ability students demonstrated the most systematic form of self-reflection. Their translation logs and reflective journals frequently documented uncertainty, compared alternative renderings, explained why particular options were rejected, and considered the potential effect of a translation on target readers. For example, when translating *konco* in "*Konco Westerling Berburu Penjahat Perang Jepang*," HA students considered several alternatives and explicitly rejected "comrade" because of its ideological associations and "associate" because of its overly neutral or corporate meaning. Their reflections therefore extended beyond lexical meaning to historical and pragmatic implications.

Medium-ability students also demonstrated awareness of translation problems, but their reflection was generally shorter and less conclusive. They often recognized that a particular choice was unsatisfactory but did not systematically explore alternatives. MA3, for example, noted that "friend feels too soft but I could not find a better word." This indicates awareness of the problem but limited follow-through from problem recognition to alternative generation and evaluation. Low-ability students showed the least evidence of explicit self-reflection. Their translation logs rarely contained alternative solutions or explanations for their choices. When difficulties were recorded, they were generally described as vocabulary problems rather than contextual or functional translation problems. This pattern suggests that many low-ability students did not recognize the deeper paratextual dimension of the translation task.

The cross-category evidence shows that self-reflection was particularly important when the translation problem was implicit rather than immediately visible. Problems involving ideological meaning, historical terminology, retranslation, register, and cultural references required students to question their initial choices. High-ability students were more likely to initiate this questioning independently, whereas medium-ability students generally required more prompting and low-ability students often proceeded without identifying the problem. Table 4 summarizes the relationship between the cognitive process, self-reflection, and ability-related differences identified in the data.

Table 4 Synthesis of Cognitive Processes, Self-Reflection, and Ability-Related Differences

Process stage	Indicators in the data	Form of self-reflection	Principal ability-related difference
Problem awareness	Hesitation, recognition of risk, or generation of more than one possible rendering	Recognizing that a paratextual unit requires deliberate processing rather than routine translation	Detection was generally reliable among HA students, partial among MA students, and frequently absent for implicit problems among LA students
Context activation	Consultation of historical information, source context, institutional information, or genre conventions	Assessing the relevance of historical, cultural, and genre knowledge for target readers	HA students actively engaged contextual knowledge, MA students did so selectively, while LA students relied mainly on immediate textual information

Process stage	Indicators in the data	Form of self-reflection	Principal ability-related difference
Alternative generation	Comparison of possible renderings such as account/memoir/notes or hunger oedema/famine	Considering the semantic, cultural, and pragmatic consequences of different options	HA students generally generated three to five alternatives, MA students one or two, and LA students usually none
Functional evaluation	Consideration of headline appeal, deck clarity, caption accuracy, quotation register, and cultural meaning	Balancing accuracy, readability, historical specificity, and target-reader accessibility	HA students evaluated choices functionally and contextually, MA students evaluated them more intuitively, and LA students focused mainly on word-level equivalence
Revision and reassessment	Substitution, addition of glosses, structural changes, source verification, or translator's notes	Monitoring and strengthening the final decision after reconsideration	HA students revised deliberately, MA students revised reactively, and LA students made minimal or surface-level revisions

The table above demonstrates that self-reflection was not an isolated activity occurring after translation. Rather, it operated throughout the decision-making process. Students who reflected more systematically were also more likely to identify problems, consider alternatives, use contextual information, and revise their translations.

Differences in Decision-Making According to Ability Level

The findings for RQ3 reveal a clear differentiation among the three ability groups. The difference was not simply a matter of producing more accurate translations. Rather, the groups differed in how they approached translation problems and how far they progressed through the decision-making process. High-ability students demonstrated the most complete decision-making cycle. They detected both explicit and implicit problems, activated relevant historical and cultural knowledge, generated several alternatives, evaluated their functional consequences, and revised their decisions deliberately. Their translations frequently involved functional equivalence, borrowing with glosses, explicitation, contextual adaptation, and source verification. Medium-ability students occupied an intermediate position. They were generally able to identify visible translation problems but were less consistent in recognizing implicit problems. They usually generated one or two alternatives and often selected an acceptable solution without documenting extensive comparison. Their revisions were mainly reactive and tended to address local linguistic problems rather than broader paratextual functions.

Low-ability students showed the most limited decision-making process. They frequently treated paratextual units as ordinary running text and therefore did not recognize problems that required contextual or functional interpretation. Their translations commonly relied on literal transfer, direct word substitution, or omission. Revision was limited and generally focused on surface-level linguistic corrections rather than the function of the paratext. The difference among the groups was most apparent when translation problems were implicit. Titles containing ideological meanings, quotations involving retranslation, historically specific terminology, and culturally embedded temporal expressions produced the greatest differences. In contrast, the

difference was smaller when the problem was clearly visible, such as the need to expand an unfamiliar acronym. The medium-ability group was particularly characterized by a gap between problem recognition and problem resolution: students often recognised that a translation was difficult but did not consistently proceed through alternative generation, evaluation, and revision. Overall, the findings demonstrate a progressive pattern from problem detection to reflective revision. High-ability students generally completed the full cognitive cycle, medium-ability students completed the cycle partially, and low-ability students frequently remained at the level of direct transfer. These differences provide the empirical basis for understanding how cognitive processing and self-reflection distinguish student translators with different levels of translation-and-analysis ability.

3.2 Discussion

The findings illuminate several theoretically significant patterns that merit sustained discussion in relation to the literature on cognitive translation processes, self-reflection, translation competence, and paratext translation. The discussion is organized around five themes: the recursive character of the cognitive process, self-reflection as the principal differentiator of decision quality, ability-related differences in problem identification and revision, the taxonomy of dominant problems and strategies, and the pedagogical implications of the study.

The Recursive Character of Cognitive Translation Processes in Paratextual Decision-Making

A central finding is that cognitive processing in translating historical paratexts is fundamentally recursive rather than linear, even among student translators ([Meutia et al., 2025](#)). The students who engaged the paratexts most successfully did not move directly from source to target; their translation logs document a process that cycled repeatedly among source-text comprehension, historical-contextual knowledge activation, alternative generation, functional evaluation, and revision ([Costa & Da Silva, 2023](#)). This corroborates the recursive, non-linear models of the translation process that dominate contemporary cognitive translation studies and extends them to the specific domain of paratextual translation in a classroom field setting ([Adha et al., 2024](#)).

Crucially, the present study shows that the recursive process is not uniformly available to all learners: it is itself ability-dependent ([Ibrahim, 2026](#)). The recursive cycle of generating, evaluating, and revisiting candidate renderings documented vividly in the high-ability students' logs for the main-title and terminology categories was attenuated among medium-ability students and largely absent among low-ability students, whose processing terminated after a single literal rendering ([X. Li, 2026](#)). This finding refines the recursive model by indicating that recursion is a marker of developing competence rather than a default property of the translation act ([Banner et al., 2026](#)). It is consistent with the view that less proficient translators decompose tasks into isolated elements treated out of context, whereas more proficient translators integrate elements and attend to global function ([Utomo, 2025](#)).

The activation of extra-linguistic knowledge historical, political, military, and religious contextual knowledge was likewise a consistent feature of successful processing and a consistent point of divergence among the subgroups ([Chai et al., 2025](#)). The high-ability students' ability to recognize that *konco* carries specific sociolinguistic connotations, that *Digoelis* is a collective political identity rather than a common noun, or that *subuh* is not semantically identical to "dawn" depended on extra-linguistic knowledge that shaped every stage of their decision-making ([Widiastuti et al., 2024](#)). The low-ability students' non-detection of these same problems indicates not merely a lexical gap but an inactive extra-linguistic sub-competency ([Hananberg et al., 2015](#)). This reinforces the centrality of extra-linguistic knowledge within integrated models of translation competence and

aligns with evidence that cultural competence, more than grammatical accuracy alone, determines the quality of Indonesian-to-English student translation ([Rosa et al., 2018](#)).

The internal monitoring function described in cognitive translation research was also observable, and its conscious activation was ability-graded ([Lakner et al., 2018](#)). For high-ability students, the monitor became consciously active whenever a candidate rendering was judged inadequate, triggering a new cycle of generation and evaluation; their reflective notes document this monitoring explicitly ([Zubaidi, 2026](#)). For low-ability students, the monitor appears not to have been triggered at all for implicit paratextual problems, so that an inadequate literal rendering passed unchallenged ([Hartelt & Martens, 2025](#)). The differentiated operation of the monitor across ability levels is one of the study's principal empirical contributions ([Dong & Chen, 2025](#)).

Self-Reflection as the Principal Differentiator of Decision Quality

The study demonstrates that self-reflection is not an optional addendum to the translation process but the principal factor differentiating the quality of paratextual decisions across ability levels ([Yunus & Susanti, 2026](#)). This finding extends Schön's (1983) reflective-practitioner framework to the translation classroom and corroborates the argument that reflective, metacognitively aware engagement is constitutive of developing translation competence ([M. Li & Yuan, 2022](#)). Both of Schön's modes were observable in the data, and both were ability-graded ([Gou et al., 2026](#)). Reflection-in-action reflection during translating was evident in the high-ability students' translation logs, which recorded doubts, competing candidates, and provisional resolutions as they arose; it was thin in the medium-ability logs and largely absent from the low-ability logs ([Hartelt & Martens, 2025](#)). Reflection-on-action retrospective reflection was evident in the high-ability students' annotated translations and reflective journals, which reconstructed the reasoning behind each decision ([Fang et al., 2026](#)); the medium-ability students' retrospective accounts were briefer and more intuitive, and the low-ability students' accounts frequently attributed difficulty to vocabulary gaps alone, indicating shallow reflective depth ([Maela Salsabila, 2025](#)). The convergence of these two modes in the high-ability subgroup, and their attenuation lower down the ability gradient, indicates that what most distinguishes a strong from a weak student translator of paratexts is not the possession of bilingual knowledge but the capacity to reflect on its application ([Praptika & Rokhuma, 2024](#)).

Four self-reflective orientations were especially salient among the high-ability students. The first is an ethic of historical representation: decisions involving ideologically charged material, the rendering of contested historical episodes, the choice between "concentration camp" and a neutralized alternative, the preservation of the emotive force of "the Land of Banishment" were accompanied by explicit deliberation about responsibility to the source culture's historical narrative ([Wu & Molnár, 2022](#)). The second is the reflective management of translator agency: where a source-text inaccuracy was verifiable, as with the Mountbatten misspelling, high-ability students consciously invoked the authority to correct, doing so transparently through annotation rather than silently, and where doubt was unverifiable, they self-reflectively recognized the limit of justifiable intervention ([Diaz Iglesias et al., 2026](#)). The third is sustained target-reader orientation, manifested in decisions to expand acronyms, gloss culture-specific terms, and supply geographical and temporal context for readers assumed to lack prior knowledge of Indonesian history ([Tandiana et al., 2025](#)).

The fourth is the reflective management of cultural foreignness, in which high-ability students resisted both full domestication, which would erase Indonesian specificity, and total foreignization, which would render the texts inaccessible, adopting instead a middle path of partial domestication combined with glossing and annotation, a stance consistent with Venuti's (2018) analysis of the visibility of the translator and with culturally oriented accounts of mediation ([Imami & Mu'in, Nasrullah, 2021](#)). The significance of these four orientations is sharpened by their near-absence among low-ability students. The low-

ability subgroup's difficulty was not that they made the wrong ethical, agentive, reader-oriented, or cultural choices, but that these dimensions did not enter their decision-making at all (Ovieta et al., 2026). This indicates that reflective orientation is a developmental achievement: it must be cultivated, and it cannot be assumed to accompany the completion of translation coursework (Amaliah, 2023).

Ability-Related Differences in Problem Identification, Strategy, and Revision

The cross-group analysis supports a three-tier account of how translation-and-analysis ability structures paratextual decision-making (Shehab & Hamamra, 2025). This account is one of the study's principal contributions, since prior research on Indonesian student translation has documented students' difficulties with cultural and journalistic material without differentiating the cognitive and reflective processes of students at different ability levels (Maela Salsabila, 2025). At the upper tier, high-ability students operated a full decision cycle. They reliably detected paratextual problems, including implicit ones; they generated multiple alternatives; they selected functional, context-sensitive strategies; and they revised deliberately, including revisiting decisions after completing the whole text (Nofrian & Syafryadin, 2023). Their behavior approximates the integrated, function-oriented processing associated with developing expertise (Wu & Molnár, 2022).

At the middle tier, medium-ability students were characterized by a partial decision cycle. They detected overt problems but missed subtle ones, generated only one or two alternatives, selected adequate but conservative strategies, and revised reactively rather than deliberately (Diaz Iglesias et al., 2026). Their translation logs repeatedly recorded an awareness of difficulty "this feels wrong but I cannot fix it" that was not converted into systematic deliberation. The medium tier is therefore best understood as a problem of incomplete process rather than absent process: the cognitive machinery is present but is not consistently engaged through to revision (Supardi, 2025).

At the lower tier, low-ability students were characterized by non-detection. For implicit paratextual problems, the problem did not enter conscious processing, so that literal transfer occurred by default rather than by decision (Lustig et al., 2021); alternative generation and meaningful revision were correspondingly absent. This finding has an important pedagogical implication: for low-ability students, the priority is not strategy instruction but the cultivation of problem awareness, since a strategy repertoire cannot be deployed against a problem that has not been noticed (Sinambela et al., 2024). A further cross-group finding is that ability differences were amplified by the subtlety of the problem. Where a paratextual problem was surface-visible, an obviously foreign acronym requiring expansion, the three subgroups converged. Where the problem was implicit, the ideological coloring of a title, the retranslation history of a quotation, the anachronism latent in a clinical term, the subgroups diverged sharply. Translation-and-analysis ability, in other words, manifests most strongly precisely in the perceptual act of noticing that a paratextual unit cannot be translated routinely. This locates the developmental crux of paratextual translation competence at the stage of problem identification, upstream of strategy (Kadwa & Alshenqeeti, 2020).

Dominant Translation Problems and Strategies in Historical Paratext Translation

Across the corpus, five dominant translation problems recurred: cultural-historical non-equivalence, elliptical journalistic structure, ideological framing, layered quotation, and the tension between readability and cultural foreignness (Imami & Mu'in, Nasrullah, 2021). Together these constitute a taxonomically coherent set of challenges specific to the genre of online historical journalism in the Indonesian-English pair, and each was managed with characteristically different success across the ability gradient. Cultural-historical non-equivalence, the most pervasive problem, arises from the absence of single-word English equivalents for terms carrying historical, social, legal, and political specificity. The variation in students' strategies, borrowing, calque, periphrastic

description, functional equivalence, and, among low-ability students, omission, mirrors the strategy variation documented in recent Indonesian studies of culture-specific items and metaphor and reflects the broader strategic repertoire described for culturally specific elements. The present study links this variation directly to the cognitive and self-reflective processes that produce it: borrowing-with-gloss was a reflective choice among high-ability students and a non-choice, or an omission, among low-ability students ([Swar & Mohsen, 2022](#)).

The elliptical-structure problem reflects a typological difference between the analytic, subject-droppable syntax of Indonesian journalism and the subject-obligatory syntax of English. The study confirms that explicating omitted subjects is not a cosmetic operation but a functionally necessary one, since without it the deck fails to perform its communicative role; and it shows that the operation is reliably performed only by students who have consciously understood the typological contrast. The ideological-framing problem, in turn, raises the question of the translator's relationship to the political perspective of the source text. High-ability students retained rather than moderated the source text's perspective as a deliberate, reflective commitment to the integrity of the source culture's historical narrative — a stance theoretically aligned with accounts of translation as a narrative and political act and with arguments for translator visibility. The layered-quotation problem and the readability-foreignness tension, finally, were the two problems on which the ability gradient was steepest, because both require the translator first to notice an invisible property of the text: that a quotation has a hidden transmission history, or that foreignness is simultaneously an obstacle and a resource ([Qassem, 2022](#)).

The overarching strategic finding is that no single strategy is universally adequate for historical paratext. The most effective approach, observed among high-ability students, was combinatorial: functional equivalence for rhetorically complex titles, explication and transposition for elliptical decks, borrowing with gloss for culture-specific institutional terms, register retention and transparent source attribution for layered quotations, and partial domestication with translator's notes for terms where foreignness is both problem and resource. The capacity to select among these strategies according to the functional demands of each paratextual unit rather than applying one default strategy throughout is itself a marker of the integrated competence that distinguished the high-ability subgroup.

[Pedagogical Implications for Translation Training](#)

Because the study was conducted as a classroom field study, its findings translate directly into implications for translator education. Four implications are salient. First, problem awareness should be taught explicitly and prioritized for lower-ability students ([Marini et al., 2026](#)). Since the low-ability subgroup's central difficulty was non-detection, instruction that begins with strategy is misdirected for these learners; what they require first is structured practice in noticing that a paratextual unit a title, a caption, a quotation carries connotative, ideological, register, or historical weight that blocks routine transfer. Paratext-spotting exercises, in which students are asked only to mark and categorize difficulties before translating, can build this perceptual capacity.

Second, the partial process of medium-ability students should be completed through scaffolding. These students detect problems but do not carry them through to alternative generation, evaluation, and revision ([Morgado et al., 2025](#)). Scaffolded prompts that require a fixed minimum of candidate renderings, an explicit comparison of those candidates, and a documented revision step can convert their intuitive awareness of difficulty into systematic deliberation, consistent with the scaffolded, progressively tapered guidance advocated in experiential models of translator education.

Third, reflective documentation should be a standard, assessed component of translation coursework. The translation log, the annotated translation, and the reflective journal were not merely research instruments in this study; they were the very practices

that distinguished the high-ability students' process. Embedding these practices in the curriculum, and assessing the quality of reflection alongside the quality of the product, operationalizes the reflective-practitioner principle within translator training and supports the metacognitive development that competence models identify as central.

Fourth, paratext deserves dedicated curricular attention. The Translation course, like much translation instruction, foregrounds running text; yet paratexts are the threshold at which readers form interpretive expectations. A teaching unit devoted specifically to the translation of titles, decks, captions, quotations, terminology, references, and temporal expressions, particularly in the culturally and historically dense genre of online historical journalism would address a genuine and currently under-served gap in translator preparation.

4. CONCLUSION

This classroom-based field study examined how the cognitive processes and self-reflective practices of twenty sixth-semester student translators at STAIN Mandailing Natal shaped their translation decisions when translating eight categories of paratextual elements from Indonesian online historical articles published by Historia.id into English. It also examined how these processes differed according to students' levels of translation-and-analysis ability. Based on the findings, three principal conclusions can be drawn in accordance with the three research questions. First, the cognitive processes underlying students' translation decisions were recursive, multilayered, and strongly influenced by the characteristics of historical paratexts. Students engaged in a sequence of problem identification, activation of linguistic, cultural, and historical knowledge, generation of alternative solutions, functional evaluation, and revision. However, these processes did not operate uniformly across the participants. High-ability students demonstrated a more complete and recursive decision-making cycle, particularly when dealing with cultural-historical non-equivalence, elliptical journalistic structures, ideological framing, layered quotations, and the tension between cultural foreignness and target-language readability. Medium-ability students demonstrated awareness of several translation problems and generated alternative solutions but frequently stopped before systematic evaluation and revision. Low-ability students, by contrast, often failed to identify implicit or culturally embedded problems and therefore had limited opportunities to engage in subsequent stages of the cognitive process. These findings indicate that recursive processing is not an automatic characteristic of translation but develops in relation to students' ability to recognize problems and regulate subsequent decision-making.

Second, self-reflection played a central role in shaping the quality of students' translation decisions across the eight paratext categories. Effective self-reflection enabled students to question their initial interpretations, evaluate the adequacy of their choices, consider alternative formulations, and revise translations in response to historical context, cultural meaning, communicative purpose, and target-reader needs. The findings further show that stronger translators did not rely solely on bilingual knowledge; rather, they demonstrated greater capacity to reflect critically on how such knowledge should be applied in specific translation situations. Their reflective practices were characterized by greater attention to historical representation, more reasoned management of translator agency, sustained target-reader orientation, and more balanced negotiation between cultural foreignness and target-language readability. These reflective orientations were most consistently demonstrated by high-ability students, whereas medium- and low-ability students showed progressively less sustained reflection. Thus, self-reflection emerged as an important mechanism through which students monitored, evaluated, and improved their translation decisions.

Third, students' translation-and-analysis ability was associated with systematic differences in how they identified problems, reflected on their choices, generated

alternatives, and revised their translations. The three ability groups demonstrated a consistent developmental pattern. High-ability students generally completed a full decision-making cycle, from problem identification through alternative generation, functional evaluation, and revision. Medium-ability students demonstrated a partial cycle: they were generally able to recognize explicit problems and consider alternatives but frequently experienced difficulty in evaluating and revising their initial choices. Low-ability students were more likely to overlook implicit cultural, historical, and pragmatic problems, resulting in limited strategic processing and minimal revision. The differences between the groups became particularly evident when the translation problems were subtle or culturally embedded, suggesting that ability differences were most pronounced at the initial stage of problem identification and subsequently affected the quality of strategy selection and revision. The findings therefore indicate that translation-and-analysis ability influences not only the final quality of translation products but also the depth, completeness, and reflexivity of the cognitive processes through which translation decisions are constructed.

Taken together, the findings demonstrate that translating historical paratexts is not a linear process of linguistic transfer but a cognitively demanding and reflective activity in which problem awareness, contextual knowledge, strategic decision-making, evaluation, and revision interact recursively. The study extends cognitive translation research by showing how recursive processing and self-reflection operate within the specific context of Indonesian online historical journalism and by demonstrating that these processes vary according to students' translation-and-analysis ability. Methodologically, the study demonstrates the value of combining translation logs, revision records, annotated translations, reflective journals, retrospective interviews, and classroom observation to investigate students' cognitive and reflective processes under authentic instructional conditions. Pedagogically, the findings suggest that translator education should explicitly develop students' ability to recognize implicit translation problems, scaffold the transition from problem identification to evaluation and revision, integrate reflective documentation into translation tasks, and provide differentiated support according to students' levels of translation-and-analysis ability. Particular attention should also be given to paratextual translation because its apparently brief textual units can contain dense historical, cultural, ideological, and communicative meanings.

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Authors' Contribution

Lia Agustina Damanik and Resdilla Pratiwi contributed to the study as follows: conceptualization and formulation of the research questions; development of the research design and methodology; data collection and analysis; interpretation of the findings; and preparation, revision, and finalization of the manuscript. All authors participated in critically reviewing the manuscript, approved the final version, and agreed to be accountable for all aspects of the work, including the integrity and accuracy of the research.

AI Generative Statement

During the preparation of this manuscript, the authors used generative artificial intelligence tools solely to support language editing, grammar checking, and the

improvement of clarity and academic expression. The use of such tools did not replace the authors' intellectual contribution to the conceptualization, research design, data collection, data analysis, interpretation of findings, or formulation of the conclusions. The authors critically reviewed and verified all AI-assisted outputs and take full responsibility for the content, accuracy, originality, and integrity of the manuscript.

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