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Translating Guizhou Batik Terminology for Cross-Cultural Communication: A Communicative and Contextual Approach

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ABSTRACT

Existing studies on terminology translation have mainly focused on specific domains, such as technical and medical translation, offering insights into standardisation, computer-aided translation, and translation strategies. However, few studies have systematically examined terminology across cognitive, linguistic, and communicative levels or proposed contextualised strategies for culturally specific terms. Drawing on Cabré's (2003) Communicative Theory of Terminology (CTT), this study explores contextualised translation strategies for technical terms through a case study of Guizhou batik. Fifty-four technical terms were identified and analysed from the bilingual book *Batik Art* using LingoSail TermBox and manual review. This study does not propose a new framework; instead, it adapts and extends the three contextualised strategies of Liu and Wei (2021) to the domain of intangible cultural heritage. These strategies include conceptual system positioning at the cognitive level, semantic distinction at the linguistic level, and cultural compensation at the communicative level. The findings indicate that applying these strategies in context effectively addresses the issues of conceptual consistency, semantic ambiguity, and cultural specificity in machine translation. More importantly, this study demonstrates how contextualised translation strategies can operationalise CTT in practice by linking its three dimensions to specific translation solutions. This contributes to bridging the gap between terminology theory and translation practice and offers a context-sensitive approach to translating culturally loaded terminology in intangible cultural heritage.

Keywords: Contextualised Translation Strategies, Communicative Theory of Terminology, Guizhou Batik, Intangible Cultural Heritage, Terminology Translation

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1.0 Introduction

Translation, as a bridge for cross-cultural communication, inevitably involves "at least two languages and two cultural traditions" (Toury, 2000, p. 200). In light of this, translation encompasses not only the conveyance of literal meaning but also the mediation of cultural concepts, traditions, and values between languages. This emphasis aligns closely with Bassnett's (2014) view that translation is "a process of negotiation between texts and between cultures" (p. 7), which endows translation with an increasingly important role in the era of globalisation, making it a crucial link for cultural exchange and mutual understanding.

One of the major factors in this negotiation process is how terminology is dealt with, since terminology provides the fundamental units for effective communication in specialised contexts. Cabré (1999) defines terminology as the "collection, description, processing, and presentation of terms belonging to specialised areas of usage of one or more languages" (p. 14). This definition was subsequently extended by Cabré (2003) through the introduction of the Communicative Theory of Terminology (CTT), a framework that conceptualises terminology from cognitive, linguistic, and communicative perspectives, emphasising that terminology should be understood in terms of underlying conceptual relations, linguistic deviations, and cultural distinctions. This multidimensional view focuses on the interdependence of three dimensions, instead of independent analysis, and is therefore a dynamic approach to the role of terminology in communication. CTT is a descriptive theory, unlike Diki-Kadiri (2014) direct discussion of cultural dimensions in cultural theory. Nevertheless, its communicative dimension enables scholars to consider contextual and cultural variables in analysing terminology use and translation, which makes CTT particularly suitable for analysing culturally embedded terms such as those found in intangible cultural heritage.

Being a subdiscipline of Translation Studies, terminology translation is central to cross-cultural communication and the transmission of professional knowledge (Moreno, 2023; Saiko, 2023). As Fang (2013) notes, even though terminology is a minor component of specialised texts, it works as "the key words of the text" (p. 233), thereby highlighting its importance in the process of expressing ideas. Additionally, terminology functions as a transmitter of cultural connotations and knowledge systems (Faber & León-Araúz, 2014), thereby making its translation difficult. This challenge is especially pronounced in cases involving deep-rooted cultural connotations, as such terms are typically embedded within culturally specific contexts. Therefore, research on terminology translation plays an important role in the context of increasing globalisation and intercultural communication.

Research on terminology translation has tended to focus on issues within specific domains, including the use of technical literature as training materials in translation (Kageura, 2019) and automatic translation in the technical domain (Zhao, 2022). These studies offer insightful ideas regarding the standards of terminology, computer-aided translation methods, and translation strategies. However, these studies have certain shortcomings. First, a systematic study of terms at the cognitive, linguistic, and communicative levels has not been adequately addressed. Second, there are few discussions of contextualised translation strategies for culturally specific terms.

To address these gaps, this study adopts a multilevel approach to terminology translation, drawing on Cabré's CTT. Specifically, this study seeks to (1) identify technical terms and their corresponding translations within a particular domain, (2) classify these terms across cognitive, linguistic, and communicative levels, and (3) determine appropriate contextualised translation strategies for each level. Using Batik Art as a case study, this research applies a multi-contextual framework to the translation of culturally specific terminology, with the broader aim of enhancing cross-cultural communication.

Having positioned this study within the context of translation, terminology, and terminology translation, the rest of the article focuses on the following. In the Literature Review section, previous studies on the translation of technical terms are reviewed, followed by a discussion on CTT. This section also discusses studies related to Guizhou batik, which is the focus of this study. Next, the methodology is described in detail. The fourth and most important part discusses the contextualised translation strategies for technical terms in Guizhou batik. This paper concludes by summarising the feasibility and significance of applying CTT to the translation of technical terms.

2.0 Literature Review

2.1 Translating Technical Terms

Translating technical terms involves dealing with language, culture, and domain-specific knowledge, all of which directly influence the accuracy of the translation of specialised terms in cross-cultural contexts (Ait ElFqih & Monti, 2023; Jiang et al., 2022). The following section reviews the challenges of translating technical terms, the translation strategies employed, and the recent progress achieved.

One of the primary difficulties in translating terminology is the balance between ambiguity and precision in professional language (Meng et al., 2025). Consequently, several studies have highlighted the importance of contextualisation in addressing this challenge (Arcan et al., 2017; Ait ElFqih & Monti, 2023). The meaning of a term should be reconstructed in accordance with certain specific contexts to achieve accuracy in terminology translation (Temmerman, 2000). Another solution is the corpus-based method, which enables the extraction of contextually relevant terminology and usage patterns from domain-specific corpora, thereby increasing translation accuracy (Marivate et al., 2025). However, relying only on corpora cannot solve semantic or structural complexities in specialised terms (Makhachashvili et al., 2023). In this light, some scholars note that corpora should be combined with manual annotation in a more systematic record of the semantic network and logical classification of terms (Biemann et al., 2018; Wang et al., 2022). While such integration of artificial intelligence with human expertise forms a much more comprehensive solution for semantic records in terminology translation, their main emphasis remains on semantic processing and knowledge organisation rather than on the translation of culturally embedded terms.

Standardisation is also a key aspect of terminology translation, as it plays a crucial role in the cross-linguistic dissemination of professional knowledge (Haspelmath, 2021). However, the standardisation process often faces several challenges. In some specialised domains, the standardisation of terms often lags behind professional practice, leading to inconsistencies in terminology use. To address this issue, previous studies have emphasised the importance of developing multilingual terminology resources and systematic terminological frameworks to enhance reliability and consistency in translation (Komarova et al., 2023; Steurs & Tryczynska, 2021). In addition, research has shown that standardisation is shaped by diachronic processes of translation and dissemination. Song (2019), for instance, traces the history of Chinese calligraphy terminology translation and suggests that repeated translation and popularisation are essential elements of translation standardisation. This insight is particularly important because it suggests that terminology standardisation is not merely a technical process but also a historical and communicative one. Nevertheless, existing discussions of standardisation still tend to prioritise terminological uniformity and referential clarity, while paying less attention to how cultural meanings may shift or be reduced through translation.

Different perspectives on translation strategies have also been widely discussed. Some scholars argue for a mix of literal translation and transliteration to resolve the issue of missing equivalents in a given profession (Grami & Alshenqeeti, 2020). For instance, Awang and Salman (2017) examine the "Arabising" of English scientific terms, demonstrating that transliteration can serve as a useful strategy when literal translation is not available. Others argue that translation strategies should be selected according to specific contexts and adjusted to the target language's features, with particular attention to cross-linguistic semantic equivalence (Stoyanova, 2021), multimodal meaning construction (Yunus & Hmaidan, 2021), and technology-oriented support for terminology translation (Bergmanis & Pinnis, 2021). These studies demonstrate that terminology translation is both strategy-sensitive and context-dependent. However, most of them focus on functional accuracy or linguistic transfer rather than on how translation strategies may respond to terms with strong cultural, historical, or symbolic loading.

This limitation is particularly evident in studies that deal with culturally embedded terminology. For example, Wu (2014), Song (2020), and Lei and Zhao (2022) all discuss the translation of Chinese calligraphy terms from a cultural standpoint, highlighting that their meanings are deeply rooted in culture and that such terms play an important role in intercultural communication. They similarly argue that translating calligraphy terms is challenging due to their cultural embeddedness and propose a range of strategies, including a combination of literal translation and transliteration, annotation, and multimodal approaches such as the use of images.

However, their focus differs. Wu (2014) aims to achieve cultural adaptation by analysing mistranslation and proposing solutions. Song (2020) discusses the idea of cultural reconstruction and visualisation as a means of reproducing the meaning of terms, while Lei and Zhao (2022) focus on achieving a functional balance in translation through historical, social, and ethical perspectives. These studies suggest that culturally specific terminology requires more flexible and interpretive translation strategies than ordinary technical terms. Simultaneously, they also indicate that current research has

not yet developed a sufficiently systematic framework for the classification and translation of such terms across different dimensions of meaning.

In addition to the discussions above, machine translation is gradually playing an important role in improving the efficiency of technical terminology translation (Long et al., 2017), reflected particularly in the development of deep learning and self-supervised learning techniques (Yu, 2021) and offline corpus augmentation (Biadgligne & Smaili, 2022). However, relying solely on machine translation is insufficient, especially when there are no direct equivalents for certain terms. Thus, the importance of bilingual dictionaries in manual and machine translation cannot be overlooked, as they enhance the accuracy of terminology translations. In addition, terminology translation requires a high degree of cultural sensitivity and contextualised adaptation, particularly in fields with high cultural dependence, such as medicine and law. Although these developments enhance processing capacity, they are less effective when culturally loaded terms do not have direct equivalents or when extra contextual explanations are required. In such cases, translation accuracy depends not only on lexical matching but also on the translator's ability to interpret cultural significance and communicative functions.

In summary, the existing literature shows that researchers have adopted various approaches to address the challenges of terminology translation, ranging from corpus-based methods to machine translation. However, most studies have concentrated on technical precision or isolated cultural cases without providing a systematic approach to the classification and translation of technical terms across cognitive, linguistic, and communicative levels. This gap is particularly significant in the context of culturally embedded terminology in intangible cultural heritage, where technical and cultural meanings are closely intertwined. This gap is addressed in the present study.

2.2 Communicative Theory of Terminology

CTT has now become a mature framework in terminology research rather than an emerging one. Studies by Dong et al. (2023), Liu and Wei (2023), and Yin (2021) have all emphasised CTT and highlighted the communicative function of terminology. This section reviews the theoretical foundations, applications, and contributions of CTT to provide a systematic understanding of this theory.

Cabré (2003) proposes CTT to emphasise the social and communicative dimensions of terminology, including context, discourse, and language use, rather than narrowly highlighting "culture". From a dynamic perspective, CTT compensates for the limitations of previous theories, such as Wüster's (1931) General Theory of Terminology (GTT), which regards terminology as a static set without contextual relevance (Faber, 2009). Compared with GTT and other traditional terminology approaches that prioritise standardisation and conceptual stability, CTT provides a more flexible framework for analysing terminology within dynamic communicative contexts. Unlike traditional terminology theories that emphasise terminological stability and one-to-one equivalence, CTT allows for contextual variation and meaning negotiation, which are essential for translating culturally loaded terms into English. CTT considers terminology to be deeply rooted in communicative practice and social interaction, thus calling for a more dynamic and flexible approach to professional vocabulary (Campo & Cormier, 2005). Another core aspect of CTT is its interactive analysis of terminology at three levels: "the cognitive (the concept), the linguistic (the term), and the communicative (the situation)" (Cabré, 2003, p. 187). This tripartite model, referred to as "the theory of doors" (Cabré, 2003, p. 186), provides new insights into the formation, use, and interpretation of terms within specific contexts (Bakó, 2014; Nkomo & Madiba, 2012).

In recent years, CTT has attracted growing attention across multiple fields because of its emphasis on context, discourse, and communicative functions. In translation practice, it has been applied to automotive translation (Aldawsari, 2023), legal translation (Ferrari, 2002), and ceramic dictionary compilation (Edo Marzá, 2008) to address context-related translation issues. In terms of terminology construction, CTT supports research in multilingual technology, including the development of multilingual terminology databases in marine product science, reflecting the dual linguistic and cultural nature of terminology and promoting clear expression and cross-cultural understanding (Jiménez Alonso & Ten Hacken, 2024). In educational contexts, CTT provides a pedagogical

framework that supports the development of students' terminology skills (Bevilacqua & Kilian, 2017) and is also used in the development of teaching dictionaries in bilingual education for minority groups, with the aim of protecting local knowledge and promoting cross-cultural communication (Ferreira, 2013). These studies indicate that standardisation and context are crucial for terminology translation in specialised fields.

In addition, terminology variation, which is not only a linguistic phenomenon but is also influenced by context, has been discussed and supported by CTT, highlighting the role of social interaction in the construction of professional language (Ferreira & Dioney, 2023; Noronha, 2023). This perspective aligns with the socio-cognitive view of terminology as a product of cognitive processes and social interaction (Maslova & Fedorenko, 2022), thereby enriching the analysis of how terminology is constructed and understood within a cognitive framework (Temmerman, 2021).

This multidimensional nature renders CTT particularly suitable for the analysis of culturally embedded terminology, where meaning is shaped not only by conceptual relations and linguistic forms but also by cultural and communicative contexts. Therefore, CTT provides an appropriate theoretical basis for the analysis and translation of culturally loaded terminology in the context of intangible cultural heritage.

More broadly, with its emphasis on the interdependence of cognitive, linguistic, and communicative dimensions, CTT serves as a comprehensive framework for analysing the complexity of professional terminology. However, although CTT provides a three-level framework, Cabré (2003) does not explicitly outline translation strategies for each level, particularly concerning terminology with deep cultural foundations. This limitation provides a theoretical basis for the present study to further develop contextualised translation strategies within the CTT framework.

2.3 Guizhou Batik and Its Translations

Guizhou batik, an item of intangible cultural heritage of China's ethnic minorities, occupies an important position in ethnic culture and reflects the rich cultural connotations of ethnic minorities' religious beliefs, life customs, and aesthetic traditions through its unique craftsmanship. Batik techniques, which have been passed down from generation to generation, represent one of the most traditional forms of production activity and artistic expression among local women.

The importance and significance of Guizhou batik are evident in studies that have addressed various aspects of this art form, including its techniques (He, 2021; Lyu & Yahaya, 2021), styles (Jin, 2025; Long & Lee, 2021), culture and inheritance (Liu et al., 2022; Quan et al., 2024), and economic value (Cheng & Wang, 2021). In addition to these studies, the book The Language of Colour in China (Zhou & Taylor, 2019) also discusses the wax-dyed batik cloth of Guizhou in Chapter 6 from the perspective of colours.

In recent years, research on Guizhou batik has expanded into interdisciplinary fields. Some studies have focused on technological innovation, particularly the application of generative artificial intelligence in batik pattern design (Peng & Yu, 2025), while others have examined research trends through bibliometric analysis (Lyu et al., 2025). From a cultural perspective, batik has been analysed within a cultural ecology framework (Zhang & Xu, 2025), while its role in contemporary economic contexts, such as rural e-commerce, has also been highlighted (Wu, 2025). These studies collectively demonstrate that Guizhou batik is increasingly understood as a dynamic cultural resource shaped by technological, social, and economic factors in recent years.

However, with economic development, the influence of foreign cultures on ethnic minority areas has become increasingly significant, posing considerable challenges to the dissemination of Guizhou Batik. In response to this challenge, translation is regarded as a viable solution because it not only overcomes language barriers and introduces Guizhou batik, a distinctive cultural and artistic tradition, to global audiences, but also enables the effective communication of its rich cultural connotations in intercultural contexts.

During the translation process, Guizhou batik terminology warrants particular attention, as it carries strong cultural characteristics, and its translation quality directly influences the effectiveness of cultural dissemination. There are relatively few studies on the translation of Guizhou batik terminology (henceforth, GBT), with Hu (2019), Huang (2021), Huang et al. (2021), Ruan (2021), and Tu (2021) representing limited contributions to this area. However, these studies primarily address general translation issues and lack systematic methodologies for terminology translation.

More importantly, existing studies rarely analyse batik terminology from a multidimensional perspective that integrates cognitive, linguistic, and communicative levels, thereby limiting a comprehensive understanding of how meaning is constructed and transferred in cross-cultural contexts. The combination of cultural connotations and technical characteristics inherent in GBT makes it a complex yet underexplored topic in translation.

To fill this research gap, this study will focus on answering the following three key questions:

1. What method can be employed to systematically identify the technical terms used in Guizhou batik and their English equivalents?
2. How can the technical terms of Guizhou batik be classified at cognitive, linguistic, and communicative levels?
3. What contextualised translation strategies can be applied at each level?

3.0 Methods

3.1 Source of Data

Batik is a traditional textile-dyeing craft in China. In Guizhou Province, production methods vary by region; however, the fundamental materials, tools, and processes remain consistent. The primary materials include cotton fabric, beeswax, and indigo, and the tools include wax knives, dye vats, and other related instruments. The process typically involves several stages, including washing, cutting the cloth, wax application, and dyeing.

The analysis in this study is based on Batik Art (Chen & Fu, 1993), a Chinese-English bilingual publication that systematically documents the history, techniques, tools, and cultural context of Guizhou batik. Despite its earlier publication, it remains one of the most comprehensive and authoritative sources in this field, as evidenced by its continued citation in subsequent studies (Hu, 2019, p. 232). The English translation was completed by Mao Guoan, a senior translator, which further supports its reliability as a bilingual resource. Chapter 3, which focuses on batik techniques, contains a substantial number of technical terms related to materials, tools, and processes, making it particularly suitable for terminology analysis. In addition, the integration of text and images provides contextual support that facilitates the accurate interpretation of technical meanings. Given that this study adopts a qualitative case study approach, the use of a single, well-documented, and representative source enables in-depth and systematic analysis rather than broad generalisation.

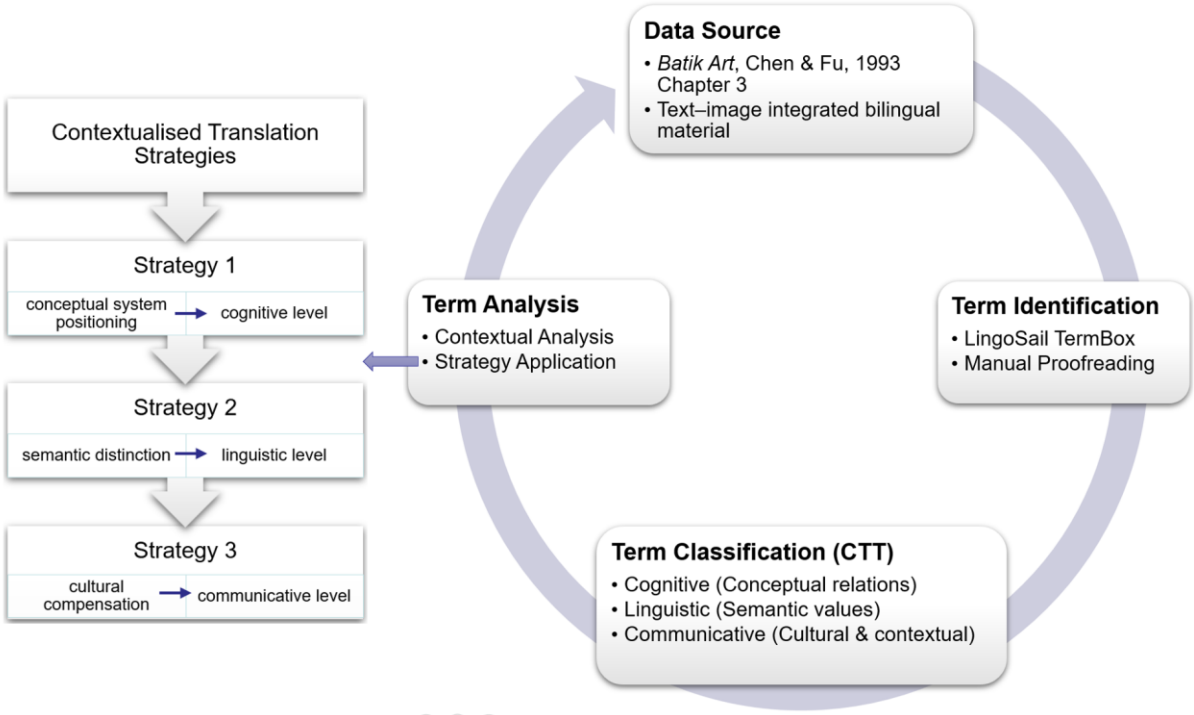
3.2 Method

Hermans (2014) notes that “case studies are guided by the theoretical framework” (p. 12). Following this principle and guided by CTT, this study adopts a qualitative case study approach, taking the technical terms in Chapter 3 of Batik Art as its primary data to examine Guizhou batik terminology translation across cognitive, linguistic, and communicative dimensions. On this basis, contextualised translation strategies are applied to broaden the research scope of CTT while emphasising the interrelations of the three dimensions.

Owing to the lack of an established definition of Guizhou batik technical terms, this study defines its scope as encompassing all terms involved in the production of Guizhou batik, including those related to materials, tools, and procedures. Based on this definition, this study adopted a three-step approach: identification, classification, and analysis. This approach provides a systematic framework for examining Guizhou batik terminology (Figure 1).

Figure 1

Research Framework and Analytical Procedures of the Study



The first step involved identifying the technical terms of Guizhou batik and their corresponding translations using LingoSail TermBox and manual proofreading. LingoSail TermBox, an online tool for managing and extracting terminology, is used to automatically identify terms by uploading Chapter 3 of Batik Art with specified extraction parameters, such as setting the word frequency threshold to one and the term length to 1-10 words. However, computer-aided tools inevitably encounter problems such as missing words, incorrect words, and the inclusion of non-technical terms. Therefore, this study further developed clear selection criteria through manual proofreading to address these issues and ensure the reproducibility of the process. The extracted GBT should meet the following three criteria: (1) close relevance to the core aspects of batik production (such as materials, tools, and processes); (2) cultural value, as these terms embody the unique traditions and skills of Guizhou's ethnic minorities; and (3) the presence of translation challenges, including polysemy, semantic ambiguity, and cultural specificity. By clarifying these criteria, this study reduces subjectivity and increases transparency of the review process. The combination of computer-aided tools and manual proofreading further enhances the accuracy and comprehensiveness of terminology identification.

Following identification, the technical terms were classified into three levels based on Cabré's (2003) CTT, which conceptualises terminology as a "polyhedron" comprising three dimensions: "the cognitive (the concept), the linguistic (the term), and the communicative (the situation)" (Cabré, 2003, p. 187). Each dimension has a specific focus: the cognitive dimension emphasises "the concept and its relations"; the linguistic dimension, "the semantic values"; and the communicative dimension, "the denotative connotations" (Cabré, 2003, pp. 184-185). Importantly, each of the three dimensions is "inseparable", providing "direct access to the object" (Cabré, 2003, p. 187). In this study, technical terms reflecting hierarchical or parallel relationships (e.g., dyeing process systems) are classified as cognitive; those exhibiting polysemy or ambiguity are classified as linguistic; and technical terms carrying cultural meaning (e.g., "窝" which refers to a "planting hole" in batik rather than its literal meaning of "nest") are classified as communicative. This multi-level classification provides dynamic and context-dependent characteristics of the technical terms of Guizhou batik, laying the foundation for the third step of the research, which is determining contextualised translation strategies.

Finally, this study determines contextualised translation strategies by analysing the three levels of context (cognitive, linguistic, and communicative) of the technical terms of Guizhou batik in Cabré's tripartite model. Since CTT itself does not provide specific translation strategies, this study refers to the three contextualised translation strategies proposed by Liu and Wei (2021), which correspond one-to-one with the requirements of the three-level contexts. Specifically, the cognitive context should "reflect the hierarchical and parallel characteristics of the terminology system" (Liu & Wei, 2021, p. 51), which is beneficial for reconstructing knowledge in cross-linguistic dissemination. The linguistic context helps to "keep the semantic accuracy and contextual adaptability" (Liu & Wei, 2021, p. 51) when there are ambiguous or polysemous terms. The cultural context should "minimise cognitive load for target readers" (Liu & Wei, 2021, pp. 51-52), ensuring the comprehensibility and acceptability of the translated terms. Apart from discussing the three-level contexts, Liu and Wei (2021), based on Cabré's CTT, further propose three contextualised translation strategies, namely "conceptual system positioning", "semantic distinction", and "cultural compensation" (pp. 53-54). Among them, "conceptual system positioning" is to "highlight the conceptual meaning of a term through its position in the terminology system and demonstrate the systematic relationship between concepts" (Liu & Wei, 2021, p. 53); "Semantic distinction" is used to "indicate the specific meaning of a term when it is polysemous or presents semantic ambiguity, to ensure accurate communication in cross-culture communication" (Liu & Wei, 2021, p. 53); "Cultural compensation" is to "supplement necessary cultural information based on their cultural connotations and communicative purposes, to better meet the needs of the target culture" (Liu & Wei, 2021, p. 54). This study applies the three contextualised translation strategies to analyse the translation of technical terms of Guizhou batik, as they meet the requirements of the three-level contexts discussed above.

4.0 Results and Discussion

4.1 Identification of Technical Terms in Guizhou Batik and Their Translations

Through the identification procedure, the system automatically extracted 81 terms from Chapter 3 of the Batik Art. However, not all extracted terms are technical terms in Guizhou batik. For example, some relate to Indian batik, while others concern the history of Guizhou's batik. To ensure the focus of the study, irrelevant terms were excluded. After this initial filtering, 66 terms remained in the analysis. Subsequently, through manual proofreading, duplicate terms were removed, and polysemous terms were merged to avoid redundancy and repetition. Ultimately, 54 technical terms related to Guizhou batik were identified. These terms were then mapped to their corresponding English translations, laying the foundation for the next stage of the study.

4.2 Classification of Technical Terms in Guizhou Batik

Based on CTT, the technical terms of Guizhou batik in Batik Art often appear in multiple contexts, including cognitive, linguistic, and cultural contexts. These contextual factors are critical in guiding the translation of Guizhou batik technical terms, as they involve not only terminological accuracy but also the cultural meanings embedded in them.

Thus, classification is based on three key considerations. First, as the core attribute of terminology, the cognitive context highlights the uniqueness of terminology as a conceptual representation. The translation of Guizhou batik technical terms requires careful consideration of the batik knowledge system, particularly its underlying conceptual context. Terminology and concepts are the basic units of disciplinary knowledge, and there is an inherent logical relationship between these basic units, which is particularly important in cross-linguistic communication as it helps reconstruct knowledge systems. Second, Guizhou batik technical terms are influenced by the Chinese linguistic form, typically consisting of one- or two-character units or four-character expressions, which may lead to semantic ambiguity and a high contextual dependence. Third, influenced by China's ethnic minority cultural traditions, Guizhou batik technical terms also carry strong cultural and humanistic connotations. Therefore, in the absence of corresponding cultural contexts as cognitive references, it is often difficult to fully grasp their embedded meanings in the target language. In view of this, this study classifies the 54 technical terms of Guizhou batik using a three-level model based on CTT, resulting in 31 terms at the cognitive level, seven at the linguistic level, and 16 at the communicative level (see Appendix A).

It should be noted that during the classification process, some terms are not confined to a single level but exhibit the characteristics of two or three levels. For example, the term "wax knife" belongs to both the tool system at the cognitive level and the cultural dimension at the communicative level, while "indigo" functions as a material at the cognitive level, shows semantic variation at the linguistic level (e.g. "blue dye", "indigo", "indigo blue"), and carries cultural meanings related to traditional dyeing practices at the communicative level. This multilevel phenomenon reflects the inherently multidimensional nature of GBT.

Therefore, when categorising Guizhou batik technical terms in this study, priority was given to the most dominant level of each term. Therefore, "wax knife" is classified as a communicative-level term, as its cultural significance outweighs its technical function in discourse. By contrast, "indigo" is classified at the linguistic level, since the primary challenge lies in semantic variation rather than conceptual identification or cultural explanation. This principle ensures analytical consistency while acknowledging the multilayered nature of terminology and supporting the development of targeted translation strategies.

4.3 Contextualised Translation Strategies of Technical Terms of Guizhou Batik

As mentioned previously, Guizhou batik technical terms present multiple contextual features, which subsequently affect the dissemination and communication of these terms. To reflect the uniqueness of Guizhou batik technical terms as a cross-lingual practice, this study adopts the following three contextualised translation strategies: "conceptual system positioning" at the conceptual level, "semantic distinction" at the linguistic level, and "cultural compensation" at the communicative level (Liu & Wei, 2021, pp. 53-54). In light of CTT, these three contextualised translation strategies aim not only to convey the meaning of the terms but also to account for multi-level differences in ensuring the effective transmission of traditional knowledge across cultural contexts.

The three contextualised translation strategies applied in selected cases are discussed below. In each case, the source text (ST) in Chinese is first presented together with its literal English translation, followed by the target text (TT) in English.

4.3.1 Conceptual System Positioning Based on Cognitive Context

The cognitive level focuses on the logical and hierarchical relationships between terminological concepts within a system. A common problem in terminology translation is the ignoring of these relationships, resulting in fragmented or inconsistent translations. In response to this issue, the "conceptual system positioning" strategy emphasises systematic consistency and the interconnection between terms. The following examples illustrate the application of this strategy across multiple types of GBT, including procedural steps and measurement units.

Figure 2

Example 1

ST	:	工艺流程表: **布的洗练——安排底样——点蜡——染色——脱蜡——清洗。**(Chen & Fu, 1993, 25)
Literal translation	:	Process flow chart: **Cloth washing - arranging base sample - waxing - dyeing - dewaxing - cleaning**.
TT	:	**(1) cloth cleansing; (2) pattern designing; (3) wax application; (4) dyeing; (5) dewaxing; (6) rinsing**. (Chen & Fu, 1993, 50)

In Figure 2, Example 1, the batik production process involves six consecutive steps, each of which constitutes a conceptual unit in batik production. By adding numbers (e.g., (1), (2), and (3)) to the TT, the translation effectively conveys the procedural hierarchy and logical order of these steps, ensuring that the inherent relationships within the terminological system are preserved. In addition, the use of gerund forms, such as "cleaning", "designing", and "dying", not only maintains grammatical

consistency but also highlights the dynamic nature of each step, thereby reflecting its function within the overall process.

This strategy enhances the systematic coherence of translated terminology and effectively addresses the key challenge in terminology translation: maintaining logical relationships within the source terminological system while ensuring conceptual clarity. By positioning terminology in a structured hierarchy, translation enhances the understanding of terms and facilitates the dissemination of cross-linguistic knowledge.

Figure 3

Example 2

ST	:	每五丈布一般用蓝靛5公斤，草木灰约20公斤。(Chen & Fu, 1993, p. 34)
Literal translation	:	Usually, 5 kilograms of indigo and about 20 kilograms of plant ash are used for every 5 **zhang** of cloth.
TT	:	Every 16 2/3 **metres** of cloth requires 5 kilos of indigo blue and 20 kilos of ash. (Chen & Fu, 1993, p. 66)

Example 3

ST	:	兰草系一年生草本，茎高二、三尺，叶互生，七月开花，九月间收割。(Chen & Fu, 1993, p. 33)
Literal translation	:	Orchid grass is an annual herbaceous plant with stems two to three **feet** high and alternating leaves. It blooms in July and is harvested in September.
TT	:	The Eupatorium fortunei, an annual herb with a 1/3 or 2/3 **metre** stem and alternating leaves, blossoms in July and is harvested in September. (Chen & Fu, 1993, p. 58)

Example 4

ST	:	蓝圆径二寸许，厚三、四分，出岭南，云疗毒肿，太常名此草为木蓝子。(Chen & Fu, 1993, p. 33)
Literal translation	:	The blue circle has a diameter of about two **inches** and a thickness of three to four centimetres. It comes from Lingnan and is used to treat poisonous swelling in the clouds. It is often called Mulanzi by Tai Chang.
TT	:	A blue grass, with a round stalk about 2/3 **decimetre** long and one or 1 1/3 centimetres in diameter, grows in the south of the Five Ridges, and is curative in removing blood stasis and lessening swelling. The imperial physician names the grass Mu Lan Zi. (Chen & Fu, 1993, p. 61)

The translation of traditional measurement units in GBT is a typical case of the application of the strategy of "concept system positioning" at the cognitive level. These terms carry intuitive numerical information, profound cultural connotations, and systematic logic. Balancing numerical accuracy with cultural characteristics in translation has become a central task.

In Figure 3, Examples 2-4 illustrate the dual challenges involved in translating traditional units of Guizhou batik. On the one hand, traditional measurement units, such as "丈" (zhang, meaning 3.33 meters) in Example 2, "尺" (chi, meaning 0.33 meters) in Example 3, and "寸" (cun, meaning 0.03 meters) in Example 4, need to be aligned with modern measurement systems to ensure readers' understanding of the numerical value of the terms. However, the cultural background embedded in these units is often overlooked in translation. For example, "尺" (chi), "寸" (cun), and other units are not only units of measurement but also cognitive tools derived from intuitive body scales (Zhao, 2007, pp. 95-120), as shown in Table 1. This measurement system, based on the human body, reflects the

cognitive logic of "intuitive measurement" in ancient China, which differs significantly from modern scientific measurements.

Table 1

Traditional Chinese length units and their modern equivalents

Unit	Proportional Relation	Approx. Modern Length	Description
分：Fen	1/10 of a cun	≈ 0.33 cm	The smallest unit (one-tenth of a finger's width), used for fine craftsmanship
寸：Cun	1/10 of a chi	≈ 3.33 cm	The width of a finger
尺：Chi	1/10 of a zhang	≈ 33.33 cm	The length of a forearm (wrist to elbow)
丈：Zhang	10 chi	≈ 3.33 m	10 forearm-lengths, used for measuring fabric or building length
引：Yin	10 zhang	≈ 33.33 m	100 forearm-lengths, used for measuring long distances such as rivers or walls

In the examples above, simply converting traditional units to modern metric units (for instance, "5 丈" (five zhang) translated as "16 2/3 meters") ensures numerical accuracy, but ignores the cultural context of the terminology. This deculturalised translation may weaken the unique value of terminology in cross-cultural communication. To address this issue, the following strategies are proposed: (1) Use transliteration combined with annotation. For instance, in "五丈" ("五" [wu] meaning 'five', and "丈" [zhang]) in Example 2, translating "丈" as "zhang" and stating in the annotation that "ten chi make one zhang; five zhang equals approximately 16.65 meters)" not only allows readers to understand the numerical value, but also conveys the logical relationship between units; (2) Add cultural background. In the translation of "二、三尺" in Example 3, the following explanation can be added: "two to three chi (a traditional Chinese unit of length, where one chi is about 33 cm). Thus, two chi is approximately 66 cm and three chi is approximately 1 m. Historically, chi was associated with bodily measurement, roughly corresponding to the length of the forearm from the wrist to the elbow. This additional information helps readers understand the origins and cultural significance of this unit. Similarly, in Example 4, "二寸" ("二" [er] meaning 'two', and "寸" [cun]) can be translated as "two cun (a cun is the width of a finger, and two cun equals roughly 0.06 meters)". (3) Enhance the systematicity of terminology. It is necessary to display the hierarchical relationship of measurement units through annotations, such as "zhang>chi>cun," which strengthens the logic of terminology and highlights its cultural value.

By combining transliteration, annotation, and systematic analysis, this translation strategy achieves the following goals: transmitting the numerical function of terminology to meet the precise measurement needs of target-language readers; preserving cultural depth by presenting the historical and cognitive background of traditional terminology and avoiding the "cultural deficiency" of terminology in translation; and promoting cross-cultural understanding by revealing the systematic logic of GBT and enhancing its academic value in cross-cultural communication through the explanation of the logical relationships between units.

4.3.2 Semantic Distinction Based on Linguistic Context

Guizhou batik technical terms sometimes exhibit polysemy and ambiguity at the linguistic level, which poses unique challenges for translation. To address this issue, the strategy of "semantic distinction" requires translators to interpret terms in relation to their linguistic context. A representative example is the term "土" (tu), which carries multiple meanings depending on the context. The following examples as shown in Figure 4, demonstrate how semantic ambiguity is resolved in different types of GBT.

Figure 4

Example 5

ST	:	不论是自织的”**土布**”(窄幅的粗麻布或粗棉布)，或是从市场上买来的”洋布”(宽幅的机织),都要经过反复多次的浸泡、捶打、清洗和日晒。(Chen & Fu, 1993, p. 25)
Literal translation	:	Whether it is self-woven “**earth cloth**” (narrow width coarse linen or coarse cotton cloth) or “foreign cloth” (wide width machine-woven) purchased from the market, it needs to undergo repeated soaking, beating, cleaning, and sun exposure.
TT	:	The cloth, whether coarse **homespun** gunny, or cotton in narrow widths, or wider machine-made cloth bought in from markets, will be soaked, beaten, washed and dried in the sun several times. (Chen & Fu 1993, p. 51)

Example 6

ST	:	在配好水的缸内放蓝靛 1公斤,加**土白酒**半公斤，用竹杆搅动,调匀,待其发酵。(Chen & Fu, 1993, p. 34)
Literal translation	:	Put 1kg of indigo and half a kg of **Baijiu** with soil in the water tank, stir with bamboo sticks, mix well, and let it ferment.
TT	:	1 kilo of indigo blue is put in the vat with filtered water 0.5 kilo of **homemade white spirit** is added and the mixture is stirred well. (Chen & Fu 1993, p. 66)

Example 7

ST	:	每三窝可以收割靛叶5公斤,将靛叶放缸内(木桶或**土坑**均可)。(Chen & Fu, 1993, p. 33)
Literal translation	:	Every three nests, 5 kilograms of indigo leaves can be harvested, and the indigo leaves can be placed in a **vat** (either in a wooden bucket or in a soil pit).
TT	:	To make the indigo, 5 kilos of leaves are put into a big vat, or large wooden bucket, or even a **pit**. (Chen & Fu, 1993, p. 62)

According to Xinhua Zidian, an authoritative modern Chinese standard dictionary of the People’s Republic of China compiled by the Institute of Linguistics, Chinese Academy of Social Sciences, the term “土” (tu) is a polysemous term with nine different meanings, including a mixture of sediment on the ground, as in “土壤” (“tu rang”, soil) and “黄土” (“huang tu”, loess); territory, as in “国土” (“guo tu”, land) and “领土”(“ling tu”, territory); the local sense, as in “故土” (“gu tu”, homeland); the folk sense, as in “土方” (“tu fang”, folk remedies circulated among the people); being out of fashion, as in “土气” (“tu qi”, tacky); unprocessed opium, as in “烟土” (“yan tu”); one of the eight tones of ancient Chinese musical instruments; ethnic minorities in China, mainly distributed in Qinghai Province, as in “土族” (“tu zu”, the Tu ethnic group); and surname (Zhang & Wan, 2015, pp. 915–916. Given these diverse meanings, the translation of the term “土” (tu), especially in newly formed compounds containing “土” (tu), requires careful contextual consideration.

The excerpts in Examples 5-7 all relate to batik production in Guizhou. “土布” (tu bu, meaning ‘tu cloth’) and “土白酒” (tu bai jiu, meaning ‘tu liquor’) are the materials for the production of batik, and “土坑” (tu keng, meaning ‘earth pit’) is the utensil used in the production of batik. Based on the linguistic contexts, “土” in Example 5 of “土布” (tu cloth) and Example 6 of “土白酒” (tu white spirit) implies “homemade” or “locally made”. In this regard, it can be observed

that, depending on the specific context, the term “土” in both examples can be interpreted as ‘self-made’, as Guizhou batik is produced through the skills of ethnic minority women themselves. Therefore, the translation of “土” into “homemade” seems appropriate. However, although “土坑” (tu pit) in Example 7 is directly translated as “pit”, this may lead readers to interpret it as merely a hole in the ground. In fact, “土坑” refers to a special container used for indigo leaf fermentation in Guizhou batik production. To preserve the special meaning of the term and avoid misunderstanding, it can be translated as “pit”, with its specific function clarified through annotation, for example, “a soil pit used for fermentation in batik production”. This strategy accurately reflects its practical use while preserving cultural context. By distinguishing semantic meanings and adapting translations to context, both the cultural and practical meanings of “土” in Guizhou batik production are better preserved, enabling readers to achieve a more comprehensive understanding of the text.

4.3.3 Cultural Compensation Based on Communicative Context

The concepts and knowledge embodied in Guizhou batik technical terms exhibit a strong sense of locality and are significantly shaped by the cultures of ethnic minority groups. The use of Guizhou batik technical terms, which are strongly influenced by specific regional and cultural contexts, has the potential to create cognitive challenges for readers. Hence, in translating Guizhou batik technical terms, it is essential to consider the cognitive impact of cross-cultural communication contexts. Guizhou batik technical terms exhibit cultural particularities that differ from those of Western languages and terminologies, which may hinder comprehension and translation to some extent. Therefore, cultural compensation is an effective strategy for reducing readers’ cultural cognitive load and cognitive barriers, thereby facilitating the effective dissemination of relevant terminology knowledge. The following examples, as shown in Figure 5, show how cultural compensation is applied to different types of culturally embedded terms in Guizhou batik.

Figure 5

Example 8

ST	:	如在染得浅色后,用蜡**封**住部分浅蓝部位,再染,则可得深浅两种蓝色。(Chen & Fu, 1993, p. 34)
Literal translation	:	If you **seal** some of the light blue areas with wax after dyeing them light, you can get two shades of blue: dark and light.
TT	:	Light and deep blue colours appear on the finished batik by **coating** some light-dyed sections of the cloth with wax and dyeing further. (Chen & Fu, 1993, p. 67)

Example 9

ST	:	也有先涂色,后**封**蜡再染的。(Chen & Fu, 1993, p. 34)
Literal translation	:	Some are painted first, then **waxed** and dyed.
TT	:	Alternatively, the colours are applied first, then **covered** with wax and the cloth is then dyed blue. (Chen & Fu, 1993, p. 69)

According to Xinhua Zidian, the term “封” (feng) refers primarily to “the isolation from the outside”, for instance, “密封” (“mi feng”, closed or sealed) (Zhang & Wan, 2015, pp. 244–245). However, “封” (feng) has a different meaning in the specific context of Guizhou batik production. “封” is not limited to “isolation from the outside” but also refers to a specific procedure. In Guizhou Batik, it is clearly explained that “封” (feng) is a procedure in which “the waxed cloth should be soaked for 15 minutes in clear water and hung for another 15 minutes before it is put into the vat. And it takes 8 to 10 ‘feng’ to finish the whole process” (Ma, 2010, p. 8. Repeating this step helps the wax adhere more firmly to the fabric, thereby producing the distinctive pattern effects of the wax

dyeing. This process is not only a technical operation but also an embodiment of the wisdom of Guizhou's ethnic minorities, reflecting the skills mastered by craftsmen based on long-term experience.

Thus, in this context, transliteration combined with cultural annotation appears to be a more appropriate strategy. Specifically, "封" can be transliterated as "feng", with its specialised function in Guizhou batik techniques explained in an annotation. For example, "feng" refers to a process of repeatedly soaking and drying waxed fabric to ensure the stability of the wax layer and clarity of the pattern. This combined translation method not only conveys the meaning of the term but also allows the target readers to understand its core role in the wax dyeing process, while also showing the traditional and cultural significance of batik techniques to a certain extent. This preserves the original meaning of the terminology and helps readers understand the unique cultural background of Guizhou batik techniques.

Another example is shown in Figure 6.

Figure 6

Example 10

ST	:	点蜡工具一般都是自制铜**蜡刀(笔)**,用几块薄铜片合成斧形,宽约一厘米左右,大小不等。(Chen & Fu, 1993, p. 27)
Literal translation	:	Wax tools are usually self-made copper **wax knives (pens)**, which are made of several thin copper sheets to form an axe shape, with a width of about one centimetre and varying sizes.
TT	:	The wax application tool is usually a homemade bronze **wax knife** called a **wax pen**. The wax knife is made with several plates of bronze formed into the shape of an axe-head about 1 cm wide. (Chen & Fu, 1993, p. 55)

The tools used for waxing by various ethnic groups in Guizhou mainly include copper or aluminium wax knives, as well as bamboo, iron, and antimony blade knives. In some areas, bamboo sticks, which are more primitive, are used for waxing. In the Leigong Mountain and Moon Mountain areas, the Miao people formerly used chicken and duck feather tubes with a central hair rope to make wax knives. Because the lines drawn with metal wax knives are fine and smooth, they have gradually become popular in recent years. The size and shape of wax knives vary across different regions of Guizhou, but they are generally made with a bamboo handle and a copper blade. The wax knives in Sandu are fan-shaped, with a slightly curved base and a missing corner. In Rongjiang, they are axe-shaped, while among the Yao ethnic group in Libo, they are square-shaped; most wax knives are isosceles triangles. The wax knife measured 10 cm in width, 6 cm in height, and 20 cm in handle length. The smallest knife had a blade width of 1 cm, a height of 0.5 cm, and a handle length of 7 cm. The number of blades in wax knives also varies, with some regions using three, others five, and even seven blades. The more blades there are, the more wax solution can be stored; however, this results in a thicker blade, which limits its use to producing only thick strokes. Hence, wax knives for drawing thin lines usually consist of only two or three blades (He & Yang, 2009).

In Example 10, the ST provides a simple description of the wax knife, and the translator renders it as "wax knife" or "wax pen", which is acceptable based on its literal meaning. However, directly translating it as "wax knife" or "wax pen" does not fully convey its underlying cultural connotations. It is suggested that visual materials, such as pictures or diagrams of different wax knife styles (see Figure 2), be incorporated during the translation process to visually present the cultural information embedded in the terminology. This translation strategy, which combines text and images, not only meets the communicative requirements of CTT but also intuitively demonstrates the uniqueness of the terminology, thereby promoting cross-cultural understanding.

Figure 2

Traditional wax knives in Guizhou batik making

Source: Gao Yun's photo (used with permission)

4.4 Target-Culture Interpretive Challenges

While the previous sections examined GBT using cognitive, linguistic, and communicative strategies based on the source-culture system, another important consideration is how these terms may be interpreted by target language readers. Although no empirical reception testing was conducted in this study, possible interpretive tendencies may be inferred from cross-cultural semantic reasoning and a comparison with existing English descriptions of batik crafts. English readers may generally use familiar cognitive prototypes, such as general dyeing, painting, carving, or decorative craftwork, when they encounter unfamiliar culturally embedded terms. If GBT is translated through literal translation or transliteration without adequate contextual clues, readers may interpret the terms using pre-existing categories, leading to a partial or distorted understanding.

For example, GBT referring to culturally significant procedures, such as feng-related stages, cycles of indigo fermentation, or specific tool operations, may only be understood as ordinary "steps" in a craft production sequence. Without the historical, ritual, and technical connotations embedded in the source text, target-language readers are likely to reconstruct only the surface action, thereby missing the embedded social knowledge, symbolic logic, and craft ethics. These interpretive gaps point to the need for translation strategies that anticipate target-language cognitive habits and offer explicit cultural responses in such a way that readers are able to reach more than the procedural layer of meaning.

A comparison with existing English-language texts about batik, such as Guizhou Batik, The Collection Set of Folk Arts and Crafts in Guizhou (Zhang & Liu, 2019), Guizhou Batik in the National Art Museum of China, and The Language of Colour in China (Zhou & Taylor, 2019), further supports this tendency. These materials often focus on visual appearance and general crafting processes. As a result, such simplified depictions of batik may weaken target language audiences' expectations, leading to misinterpretations of the semantic depth of GBT when translated terms are encountered. Although indirect, such textual evidence provides insight into how target language readers may process culturally laden terminology in the absence of direct empirical studies.

4.5 Limitations and Future Directions of the Study

This study is confined to the field of Guizhou batik and has not yet sufficiently proven the connection with other technical fields. Another limitation is the lack of empirical evidence of the target-language audience's reception. As surveys, interviews, or comprehension tests are outside the scope of this study, the interpretive tendencies of target-language readers are inferred indirectly through cross-cultural semantic reasoning and textual comparison, rather than through direct testing of readers. Moreover, the adaptability of CTT to more complex cultural and technological environments has yet to be properly justified. As such, future studies may incorporate empirical reception methods to systematically examine how target-language audiences understand or negotiate culturally embedded batik terminology, apply CTT to the translation of terminology in other technical fields, and investigate how cultural factors shape the use of translation strategies, particularly in multilingual and multicultural contexts, thereby contributing to a richer theory and practice of cultural and technological exchange.

5.0 Conclusion

This study examines the translation of Guizhou batik terminology from the perspective of Cabré's CTT and proposes a systematic approach to the identification, categorisation, and translation of terminology across cognitive, linguistic, and communicative dimensions. The terms were selected based on their representativeness in capturing the craft and culture of Guizhou batik. The analysis reveals several translation complexities, including a lack of attention to conceptual systems, difficulties in handling polysemy and ambiguity, and challenges in cultural transmission. CTT offers both theoretical and pragmatic insights by advocating a multidimensional approach that integrates contextual factors and flexible translation strategies, namely, conceptual system positioning, semantic distinction, and cultural compensation. The use of such strategies helps maintain accuracy in the translation of Guizhou batik terminology and supports cross-linguistic comprehension while contributing to the broader dissemination of Guizhou batik culture internationally.

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Conflict of Interest

The authors have declared that no competing interests exist.

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Generative AI tools were used solely for language refinement and academic expression. All content and interpretations remain the responsibility of the authors.

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APPENDIX A

Technical terms of Guizhou batik from *Batik Art*

No.	Source Term	Target Term	Features	CTT Levels
1	一公尺至二公尺	one or two metres	Length system	Cognitive level
2	高二、三尺	1/3 or 2/3 metre		
3	二寸	2/3 decimetre		
4	五寸	1 2/3 decimetres		
5	三、四分	one or 1 1/3 centimetres		
6	五丈	16 2/3 metres		
7	蜂蜡	beeswax	Material system (wax)	
8	石蜡	paraffin wax		
9	地蜡	earth wax		
10	棉布	cotton cloth	Materials system (cloth)	
11	麻布	gunny cloth		
12	防染材料	dye resistors and waxes	Material system (dyes)	
13	天然染料	natural dyestuff		
14	植物染料	plant dyes		
15	靛蓝染料	indigo blue dye		
16	染液	dyeing liquid		
17	靛池	pool	Tool system	
18	鸡毛杆	cock quill		
19	筛子	sieve		
20	染缸	dye vat		
21	竹铁	slender pointed bamboo stick		
22	炭盆	charcoal brazier		
23	多色染	Polychrome Dyeing	Technique system	
24	多色蜡染	Polychrome batik		

25	置蜡	wax application		
26	布的洗练	cloth cleansing		
27	安排底样	pattern designing		
28	点蜡	wax application		
29	染色	dyeing		
30	脱蜡	dewaxing		
31	清洗	rinsing		
32	土布	homespun	Polysemy	Linguistic level
33	土白酒	homemade white spirit		
34	土坑	pit		
35	“洋布”	wider machine made cloth		
36	点蜡	waxing; dot; apply wax; wax application; drawing	Semantic ambiguity	
37	置	put; placed; lowered into; immersed		
38	靛蓝	blue dye; Indigo; indigo blue		
39	透	penetrate		Communicative level
40	发靛缸	Fermentation		
41	信手点蜡	a needle or even fingernail to mark out a design		
42	留白	the white sections of previously dyed cloth		
43	蘸蜡	dipped into the hot wax		
44	晕开	flow		
45	荧火	charcoal burner		
46	浮色	remaining dye; waste dye		
47	皂煮	boiled in soapy water		
48	装靛	making the dye		
49	窝	planting hole		
50	斧形	axe-head		
51	腹稿	work out a design		
52	涂画	perform the dyeing operation		
53	蜡刀	wax knife; wax pen		
54	封蜡;封住	covered with wax; coating		