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User-centered Translation of a Chinese Phonetics Tutorial: Enhancing Accessibility and Learning for Non-native Speakers

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Abstract

This paper presents a user-centered translation of the preface of *The Comprehensive Graphic Tutorial of Chinese Phonetics* by Han Danxing, aimed at enhancing accessibility, instructional clarity, and usability for international learners. By combining Skopos Theory and technical communication principles, the translation addresses both macro-level objectives, such as audience adaptation, pedagogical intent, and functional purpose, and micro-level strategies, including layout design, terminology selection, and visual coherence. The preface serves as a foundational entry point to the textbook, providing essential instructional guidance, methodological explanation, and an overview of the innovative "Phonetic Graphic Teaching Method." Through detailed case studies, the translation demonstrates effective strategies for improving readability and usability by restructuring dense text, integrating tables, enhancing scannability, and providing clear signposting for learners. These modifications align the preface with Western educational standards that emphasize clarity, coherence, and user-centered design. The findings suggest that integrating Skopos Theory with technical communication principles offers a practical framework for enhancing the usability of educational texts aimed at diverse, international audiences, making complex phonetic concepts more accessible and comprehensible.

Keywords

User-centered translation; Chinese phonetics; language pedagogy; technical communication; instructional design; phonetic awareness; translation strategies

1. Introduction

In recent decades, Mandarin Chinese has become one of the most widely studied languages in the world. With over 1.1 billion native speakers and tens of millions of learners globally, Chinese has established itself not only as a heritage and official language in Chinese-speaking regions but also as a prominent foreign language in education systems around the world. According to Hanban (2020), by 2020, over 70 countries had incorporated Chinese into their national education systems, and more than 25 million people were actively studying the language. This remarkable expansion reflects China's increasing global influence and the growing demand for Mandarin education (Gong, Lai, & Gao, 2020).

However, despite this rising popularity, there remains a significant shortage of high-quality, user-friendly teaching materials, particularly in the field of phonetics. As Welch and Welch (2008) highlight, language acts as both a bridge and a barrier in international knowledge transfer. This tension is especially evident in language education, where the lack of accessible and pedagogically clear resources can hinder learners' engagement and progress.

The *Comprehensive Graphic Tutorial of Chinese Phonetics*, authored by Han Danxing, addresses this challenge through its innovative "Phonetic Graphic Teaching Method." It integrates tone diagrams, visual pronunciation models, and spelling sequences to simplify the complex process of learning Chinese phonetics. This approach aligns with what Goh (2014) refers to as the expanding "Outer and Expanding Circles" of Mandarin users—non-native learners who view the language as a gateway to economic opportunity, cultural access, and professional growth. These learners benefit most from materials that are not only accurate but also usable, engaging, and self-explanatory.

Translating such a visually and pedagogically unique text for an international audience presents specific challenges. The preface, in particular, plays a foundational role by outlining the textbook's methodology, pedagogical rationale, and usage instructions. Successfully adapting this section for English-speaking teachers and students requires more than linguistic equivalence—it demands a strategic approach informed by technical communication principles, such as audience orientation, instructional clarity, and visual-textual coherence.

This paper focuses on the translation of the preface of *The Comprehensive Graphic Tutorial of Chinese Phonetics*. It explores how technical communication principles can be applied to enhance the textbook's instructional value, usability, and accessibility in the target language. By analyzing this case, the paper contributes to broader discussions on user-centered translation strategies for educational texts in the CFL context.

2. Applying Technical Communication Principles

Technical communication refers to the practice of conveying complex information in a clear, concise, and accessible manner to a specific audience. Though traditionally associated with technical manuals, engineering reports, or IT documentation, it has found increasing relevance in educational translation, particularly when adapting instructional content across linguistic and cultural boundaries.

As Williams and Chesterton (2014) point out, translation should prioritize not only linguistic accuracy but also functional clarity, aligning with the core goals of technical communication: facilitating efficient, user-friendly information transfer.

According to Markel (2012), technical communication is inherently user-centered, emphasizing clarity, accuracy, and usability to ensure that readers can understand and apply the provided information effectively. Kimball (2016) expands this view by introducing the idea of tactical technical communication, which acknowledges the situational and flexible nature of communication in real-world settings. This flexibility is especially relevant to translation work, where content often needs to be adapted to meet the immediate needs and expectations of the target audience.

The fundamental principles relevant to this translation project include:

Clarity: Making sure information is free of ambiguity and understandable at first glance.

Accuracy: Retaining technical correctness, particularly when translating phonetic terms.

Conciseness: Avoiding redundancy while maintaining meaning.

Usability: Ensuring that learners can navigate, understand, and apply the material with ease.

Audience awareness: Adapting the style and tone of the preface to fit the needs of international learners and educators.

These principles are essential in educational materials, where comprehension and functionality are paramount. Scholars like Byrne (2006, 2012) and Olohan (2015) emphasize that technical translation must go beyond literal equivalence to serve the practical learning goals of users. Byrne notes that effective educational translation should focus on readability, structure, and instructional coherence, while Olohan advocates for a user-oriented approach that prioritizes accessibility and content integration.

Moreover, Díaz-Millón and Olvera-Lobo (2023) argue that modern translation strategies increasingly intersect with transcreation and technical writing, especially in multilingual, multimodal content. These approaches emphasize adaptability and engagement, key considerations when translating hybrid instructional texts that combine visual elements and phonetic instruction.

In the context of translating the preface of *The Comprehensive Graphic Tutorial of Chinese Phonetics*, these principles helped inform decisions such as adjusting terminology for international learners, restructuring dense instructional paragraphs, and aligning visual explanations with Western expectations for textbook layout. The result is a preface that not only preserves the pedagogical intentions of the original but also enhances user understanding and engagement in the translated version.

3. Translation Strategies

Translating the preface of *The Comprehensive Graphic Tutorial of Chinese Phonetics* required a strategic approach that balanced linguistic fidelity with functional adaptation. As the opening section of the textbook, the preface plays a foundational role in helping readers understand the textbook's pedagogical approach, target audience, and instructional design. Therefore, the translation strategy focused not only on rendering the source text accurately but also on enhancing the usability and readability of the target version, particularly for international learners and teachers unfamiliar with the structure of Chinese phonetics textbooks.

The guiding framework for the translation was shaped by both Skopos Theory and technical communication principles. From a Skopos perspective, the primary purpose of the translation was functional: the English preface had to orient users effectively to the content and method of the textbook. From the perspective of technical communication, the translation aimed to ensure clarity, coherence, and accessibility, tailoring the text to suit the expectations and needs of a global educational audience.

A significant part of the translation strategy was dedicated to stylistic adaptation. The original preface used a formal and often didactic tone, characteristic of Chinese academic writing. In the English version, the tone was moderated to maintain authority while improving approachability and instructional clarity. Terminology was carefully selected to balance precision with learner-friendliness, and cultural references were adjusted or clarified to prevent confusion among non-Chinese readers.

The most critical strategy applied was in the area of structuring and visual referencing. The source text contained long paragraphs, dense informational blocks, and embedded visual references, which could hinder readability and cognitive processing. In the translated version, the preface was restructured for scannability—a key principle in technical communication. This involved breaking up long paragraphs into smaller, topic-focused units; adding clear headings or signposting where appropriate; and organizing information in a way that supported logical flow and easy visual navigation. As Conversy, Hurter, and Chatty (2010) argue, scannability directly influences a user's ability to decipher and use a representation effectively, as each visual structure induces a cognitive cost that can either facilitate or hinder task performance. Their model of visual scanning suggests that reducing the number of steps and minimizing perceptual effort improves representation usability—a guiding insight that shaped this translation work.

Moreover, Golding (2014) emphasizes that effective textbook design must not only deliver information but also guide learners through it by structuring content in intuitive, cognitively supportive ways. Applying this logic to translation means treating the preface as a functional component of the textbook's learning design, not just as a translated passage, but as a carefully crafted guidepost for the user experience.

These changes helped transform the preface into a more usable, intuitive, and instructional entry point into the textbook, supporting its broader goal of making Chinese phonetics more accessible to global learners.

4. Case Studies: Structuring for Readability and Accessibility

This section presents three key cases from the preface translation of *The Comprehensive Graphic Tutorial of Chinese Phonetics*, illustrating how technical communication principles were applied to enhance clarity, usability, and instructional effectiveness. These cases highlight the structural reorganization of complex information to improve scannability and support cognitive processing for learners.

Case 1:

ST: (See appendix)

Table 1. TT: Comparison of Tonal Value Notation and Textbook Notation

	Tonal value notation	Textbook notation
1st tone + 1st tone	55 + 55	1 + 1
3rd tone + 4th tone	214 + 51	3 + 4
2nd tone + 3rd tone + 1st tone	35 + 214 + 55	2 + 3 + 1

The original text embedded tone comparisons within sentences, making it necessary for learners to extract relevant information mentally. To improve clarity, the translation restructured the content into a table format, allowing for immediate recognition of the relationship between traditional tonal notation and the textbook's simplified system. This aligns with Kostelnick's (2020) argument that visual design in technical communication is not merely aesthetic but rhetorical—it guides reader attention, improves usability, and enhances comprehension.

This visual segmentation also helped reduce cognitive load, enabling learners to quickly locate and compare tone values without excessive mental effort. As Conversy, Hurter, and Chatty (2010) emphasize, reducing perceptual complexity through layout design directly improves users' ability to process and apply information efficiently.

The side-by-side alignment of tonal values made the distinctions between traditional and simplified systems more intuitive. To ensure consistency across the textbook, the translation process involved reorganizing plain text into tables on 11 occasions. Some tables served as concise summaries, while others required more extensive restructuring to maintain logical progression and instructional coherence. These adjustments not only improved readability but also reinforced the structured, pedagogically intentional nature of the textbook's content.

Case 2:

ST: (See appendix)
TT: This textbook is:

- A foundation of students' learning.
- A primary tool for teachers in their teaching process.

Target audience: This textbook is designed for Chinese learners at a high school level or above, specifically for those who have no prior knowledge of the language.

Purpose: Its primary aim is to address the key challenges faced by learners in mastering Chinese phonetics, such as the difficulties in spelling and pronunciation of the tones. By focusing on these crucial areas, the textbook adopts a brand-new approach across its theoretical explanations, teaching methodologies, and the overall structure of its content sequence.

The original text combined three core ideas—textbook function, audience, and purpose—into a single block of text, making it difficult for readers to quickly extract relevant information. To improve navigability, the English translation introduced bold subheadings such as *"Target audience"* and *"Purpose"*, creating a clearer structure and allowing readers to locate key details more efficiently. Additionally, the roles of the textbook for both students and teachers were reformatted into distinct, visually separated sections rather than being embedded within long sentences, enhancing readability and making the content more accessible.

This approach follows Markel's (2012) principle that technical communication should support rapid access to information through a well-organized and reader-centered layout. The decision to separate dense content into function-specific subsections also aligns with Golding's (2014) argument that clarity of textbook design directly contributes to learners' conceptual grasp of purpose, sequence, and use.

Case 3:

ST: (See appendix)

The source text combined all four functions of common word usage into a single paragraph, making it difficult to distinguish key concepts. To improve clarity, the translation introduced bolded section headings, allowing each function to stand out clearly. Instead of embedding explanations within long passages, the revised text used concise paragraphs, enhancing readability and scannability. This restructuring not only helped learners navigate the content more easily but also aligned with instructional design principles that prioritize structured, digestible information for better cognitive processing (Díaz-Millón & Olvera-Lobo, 2023).

By segmenting the text into distinct sections, the translation reinforced the logical connections between different pedagogical functions, ensuring a more intuitive reading experience. The improved formatting allowed readers to engage with the material more effectively, making it easier to absorb and retain key ideas about language learning strategies. As Golding (2014) emphasizes, clarity in textbook structure is essential for supporting interdisciplinary comprehension and guiding learners through complex material. This approach transformed the content from a dense, narrative-style explanation into a clear and structured guide, better suited to an educational setting where quick reference and comprehension are essential.

Table 2. TT: Benefits of Learning Common Words and Phrases

Learning common words and phrases can help students:	**Get familiar with the various phonetic structures.** To study pronunciation effectively, you need to become familiar with monosyllabic, disyllabic, and multisyllabic words, as well as various pronunciation and tone changes. Practicing common words and phrases that represent the language flow is the best way to illustrate the variety of phonetic structures.
	Increase their interest and overcome the fear of communicating in a foreign language. Learning common words and phrases can increase students' interest in learning Chinese and being able to "open their mouths and speak" greatly offsets their psychological fear of the foreign language. After just a few lessons, students will be able to speak a few words in Chinese and feel that this language is not that difficult. However, we must point out that students need to master the correct pronunciation of the tones.
	Enhance their sense of language. Enhancing students' sense of language is not only improving their listening skills but also developing their ability to guess content based on the context and a familiar word or sound. While in class, teachers need to try their best to express themselves in Chinese. For example: "Please look at the blackboard!", "Please open your books ...." At first, these phrases do not need to be learned or memorized. Students need to be able to "guess": what might the teacher mean in this context? As long as the students guess correctly, they will be able to follow the teacher's lead. Over time, students will memorize these phrases. This way, we can improve and strengthen students' listening skills and their ability to understand foreign language on the subconscious level. By applying this method, we can help students to develop a sense of the Chinese language.
	Create the needed language learning environment. In the absence of a language environment, learning some daily phrases in each lesson will help you cooperate with the teacher, create a better language learning environment, and do your best to communicate in Chinese more effectively.

5. Impact of the Adjustments

The translation's restructuring significantly improved the clarity, usability, and instructional effectiveness of the preface. By breaking down dense information into structured sections, the revised text made key concepts more accessible, allowing readers to quickly locate relevant details. The integration of tables, headings, and concise formatting reduced cognitive load, making complex phonetic explanations easier to process. These adjustments also enhanced the pedagogical coherence of the text, aligning it with Western educational norms where clear organization and scannability are essential for learner engagement. Ultimately, these modifications ensured that the translated preface not only conveyed the original meaning but also functioned as a practical and user-friendly guide for international students and educators.

6. Conclusion

The translation of the preface of *The Comprehensive Graphic Tutorial of Chinese Phonetics* demonstrates how applying technical communication principles can significantly enhance the usability, clarity, and instructional effectiveness of educational materials. By prioritizing structural reorganization, visual formatting, and audience-centered adaptation, the translation transformed the preface from a dense and complex text into a more accessible and pedagogically effective resource.

One of the key challenges in translating this section was maintaining functional equivalence while ensuring that the target text met the expectations of an international audience. The source text relied on traditional Chinese academic writing conventions, which often present information in long, uninterrupted blocks of text. The translation process addressed this by segmenting content into clearly defined sections, incorporating tables for comparative data, and using bolded headings for scannability. These modifications aligned with technical communication best practices, ensuring that learners could quickly locate, comprehend, and retain key information.

Additionally, the translation reinforced the pedagogical intent of the textbook. Through restructuring, key educational concepts—such as phonetic notation, learning strategies, and language acquisition principles—became easier to process and apply. The integration of visual elements and explicit instructional cues further supported usability, making the material more engaging for both students and educators.

Ultimately, this translation highlights the crucial role of technical communication in educational translation. By going beyond linguistic accuracy and focusing on functionality, usability, and cognitive accessibility, the translation not only preserved the integrity of the original text but also optimized it for a global learning environment. The case studies analyzed in this paper demonstrate that effective translation of educational materials requires more than direct textual conversion—it demands a user-centered approach that prioritizes clarity, readability, and instructional design.

This study provides a model for future translations of technical and educational texts, showing that combining translation strategies with technical communication principles can bridge linguistic and cultural gaps while maintaining the effectiveness of instructional content. As Gonzales (2021) argues, multilingual technical communication must go beyond functional clarity and recognize the socio-cultural dimensions of language, particularly when adapting materials across diverse learning communities. Further research could explore how these strategies apply to other multimodal educational resources, particularly in the translation of textbooks that rely heavily on visual components, structured explanations, and interactive elements.

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Appendix

Case 1:

ST:
调值标示：　　第一声加第一声（55 + 55）
本教材标示：第一声加第一声（1 + 1）
调值标示：　　第三声加第四声（214 + 51）
本教材标示：第三声加第四声（3 + 4）
调值标示：　　第二声加第三声加第一声（35 + 214 + 55）
本教材标示：第二声加第三声加第一声（2 + 3 + 1）

Case 2:

ST:
教材，是学生学习的依据，是教师教学的工具。因此，教材应突出它的使用目的和适用群体。本教材适用于高中学历以上的零起点的汉语学习者使用。本教材编写的目的是，解决学习者学习汉语语音过程中声韵拼读难和声调掌握难的重点问题。本教材围绕学习者遇到的重点和难点问题展开，从理论讲解、施教方式到教学顺序、教材结构，都采用了全新的方式。

Case 3:

ST:
第一，常用语包括单音节、双音节、多音节词语，也包括各种变音变调，在具有代表性、学生熟悉易懂的语流中进行语音实践教学，是最佳教学手段。第二，课堂用语可增加学习者学汉语的兴趣，能“张口说话”产生的成就感会大大抵消他们对汉语的心理畏惧感。也就是说，学生刚上几堂课就可以说几句汉语了，会觉得汉语并不难。但必须强调的是，必须让学生准确地掌握这几句汉语语音的语调。第三，增强学生的语感。所谓增强语感并非仅指提高学生的听力，也包括培养学生根据情境和某个熟悉的词或音来猜测内容的能力。老师尽最大可能在课堂上用汉语表达。比如：请看黑板！请打开书…… 这些用语一开始不需要学生背下来或记住，而是要让学生会“猜测”：就此情此景，老师说的可能是什么意思？只要学生猜对就可以。久而久之，学生就会记住这些用语。这样可以潜移默化地提高学习者的听力和会意能力，增强学习者对汉语的感觉、感受，从而使他们培养语感。四，在缺少语言环境的学习条件下，每节课提供一些日常用语，可使学习者主动配合教师营造更好的语言学习环境，尽最大努力去使用汉语交流。