A Comparative Study of English and Chinese Picture Books in Light of the Multiple Intelligence Theory

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Abstract: Today's foreign language teaching has entered into a multi-modal stage, emphasizing the combination of linguistic intelligence and other intelligence. To improve the quality of picture books and teenagers' second language learning, this study chooses two sets of picture books, i.e., *China Reader* in English and *New Shuangshuang Chinese Textbook* in Chinese, to make a comparative analysis on the basis of the multiple intelligence theory. The characteristics of each set of children books are summarized and the comparison is conducted in three aspects: theme selection, vocabulary arrangement and graphic & textual design. The comparative data indicate that picture books compiling involves stimulation of different types of intelligence of the teenage readers. Specifically, proper selection of natural themes and narrative perspective enhances readers' natural intelligence and interpersonal intelligence; the suitable utilization of daily words and the addition of context can mobilize motor intelligence, interpersonal intelligence and existential intelligence of readers; the optimization of graphic & textual design can make full use of readers' visual-spatial intelligence. When multiple intelligence of readers are triggered, picture books might effectively achieve the effective language development and holistic education among the target teenagers. At the end, this study provides some suggestions for future improvement of Chinese children books. Firstly, more ecological and environmental protection themes could be chosen to emphasize harmony between humanity and nature. Secondly, the recurrence rate of keywords and daily vocabulary should be increased in order to improve readers' communication skills. Finally, the graphic & textual layout as well as the overall design of picture books should be enhanced so that the aesthetic quality of the picture books could be achieved.

Keywords: Picture Books, Comparative Study, Multiple Intelligence Theory

1. Introduction

Reading needs four abilities: decoding ability, linguistic knowledge, comprehension methodology and cultural awareness. [1] Decoding ability refers to the capacity to understand the meaning of text concepts, to grasp phonemic and spelling knowledge, and to read the whole passage fluently; linguistic knowledge includes vocabulary, grammar and discourse learning; comprehension methodology is the ability to obtain text information by using reading skills and strategies, which requires extraction, summarizing and multiple thinking; cultural awareness focuses on the reader's understanding of different cultures, including cultural perception, appreciation and cultural identification. [2] The four abilities above, as the basic elements of adolescent reading literacy, put higher demands on the compilation and design of picture books.

Currently, there are three problems in the foreign-language picture books. [1] Firstly, the narrative techniques and humanistic values are not enough, and most picture books fail to select suitable themes to educate kids to think, communicate and to act. Secondly, the vocabulary is unpractical, and the lack of life scenarios in picture books makes it difficult to arise readers' interests in reading. Thirdly, the pictures in books are monotonous and the graphic & textual design is not integrated, which fail to stimulate readers' emotional and mental participation.

Generally, English picture books attach more importance to the psychological characteristics and learning habits of the teenagers, integrating life education, language learning and cognitive development in picture books. [3] In comparison,

Chinese picture books have a shorter history of development. The domestic research on the content, design and teaching implementation of Chinese graded picture books started relatively late, and there are little research on Chinese graded reading books[4] The overseas demand for Chinese language learning is far from being satisfied. [5] In view of this situation, this paper compares two sets of Chinese and English picture books in terms of theme selection, vocabulary arrangement, and graphic & textual design, aiming to improve the quality of Chinese picture books.

2. Literature Review

2.1. About Multiple Intelligence Theory

American psychologist Howard Gardner summarizes nine types of basic intelligence of human beings: linguistic intelligence, logical intelligence, visual-spatial intelligence, motor intelligence, musical-rhythmic intelligence, interpersonal intelligence, introspective intelligence, natural intelligence and existential intelligence. [6]

Today's foreign language teaching has entered into a multi-modal stage, emphasizing the combination of linguistic intelligence and other intelligence. Logical intelligence helps students better understand and master grammatical rules. Visual-spatial intelligence inspires students to learn a foreign language through context. Motor intelligence stresses the practical use of a foreign language in listening, reading and writing. Musical intelligence improves intonation. Interpersonal intelligence enhances social communication ability in different occasions. With introspective intelligence, students will think calmly and reflect on their foreign language learning experience. With natural intelligence, students pay more attention to experience the objective world. Existential intelligence emphasizes the utilization of a foreign language in real life. [7]

2.2. Educational Value of Picture Books

In picture books, both pictures and words take the responsibility for narration. Stories in picture books feature intrinsic coherence and close coordination between pictures and texts. [8] Today's picture books integrate audio-visual multimedia functions to explain words and phrases, reveal connotations and disperse thoughts. [9]

Picture books have unique educational values. Firstly, it can trigger readers' emotional resonances, enrich their inner experience and promote healthy psychological development. Secondly, picture books can provide rich language input, stimulate readers' learning enthusiasm and satisfy students' language and cultural learning needs. In addition, picture book reading is beneficial to the personality development of young people, helping them build a positive worldview and values. [10] Culturally, reading picture books can improve readers' cross-cultural awareness and sense of cultural identity. Through communicating with picture books, readers participate in the process of practice, remodeling, meaning generation and communication, finally achieving the spiritual experience of cooperation and erudition. [11] In conclusion, picture books can develop different types of intelligence and realize a comprehensive education of the teenage readers.

2.3. Current Status of Picture Books in Chinese

The current situation of picture books in Mandarin Chinese is not yet satisfactory. The questionnaire survey found that domestic publishers are not internationalized, i.e., there are not enough books to meet the increasing international market. With limited and unimaginative themes, the graded systems and vocabulary arrangement are not scientific enough. [12] Compared with English picture books full of imagination and fun, picture books in Chinese appear deficient with dull graphics, inflexible layout, insufficient color impact, and low readability. [13] To makes the situation worse, most picture books in Chinese are less frequently used in teaching practice, and their writing and research are still in the stage of exploration and development. [14]

To identify the problems and enhance the quality of picture books in Chinese, this paper compares, in light of the theory of multiple intelligence, characteristics of two sets of picture books in terms of theme selection, vocabulary arrangement, and graphic design and tentatively proposes some effective strategies.

3. About the Two Series of Picture Books

Published by People's Education Press (China) in cooperation with National Geographic (Sage Learning), *China Reader* is a set of English leveled reading materials aimed at young English learners in China, designed to promote and disseminate excellent Chinese culture. The picture books cover more than 75% of the vocabulary of junior and high schools, i.e., 1600-3000 words, and the difficulty level is CEFR B1, B2, C1 (IELTS 4.5-8) of the Common European Framework of Reference for Languages (CEFR). The whole set of picture books is divided into 4 units of "Wisdom and Faith", "Literature and Art", "Science and Technology Civilization", "Folk Customs". Each unit has 5 books, 20 books in total. In terms of content organization, each unit has four sections: Before You Read, Main Reading, After You Read and Expansion Reading, with both British and American audios provided, as is shown in Table 1.

Table 1. Four Sections in Each Unit of China Reader.

Before You Read	Introducing themes through graphics and including 3 modules in vocabulary, culture, language function
Main Reading	Setting up activities to cultivate reading strategies, cultural awareness, and thinking skills with footnoting vocabulary
After You Read	Including 2-3 post-reading activities that use mind maps to outline cultural concepts and textual logic
Expansion Reading	Including expanded reading materials relevant to the theme

The *New Shuangshuang Chinese Textbook* was written by an American Sinologist in collaboration with some Chinese teachers and published by the Peking University Press. The 15-book series have a literacy capacity of 2,500 words. In addition to language instruction of Chinese *pinyin* and sentence patterns, this set of picture books also systematically introduce Chinese geography, history, philosophy, and cultural themes. Each book contains a textbook, two exercise books, word cards and a CD-ROM. The content organization of *New Shuangshuang Chinese Textbook* is shown in Table 2.

Table 2. *Four Sections in Each Unit of New Shuangshuang Chinese Textbook.*

Text module	Systematically introducing a theme with questions and illustrations
Exercise Module	Including Mandarin pinyin and dictation of vocabulary, homophones, antonyms, polyphones, sentence building, explanations of rare words.
Extracurricular reading	Supplement and expansion of reading materials such as Chinese poetry based on the historical context of the relevant theme
Translations	Providing English translation

What follows compares two sets of picture books in terms of theme selection, lexical construction, and graphic & textual design. Among both sets of picture books, *Chinese Porcelain* in Chinese and *Porcelain: From China to the World* (*Porcelain* in short hereafter)in English will be extracted respectively as specific cases for detailed comparative analysis. We will summarize English and Chinese picture book writing strategies and improve the writing quality of Chinese picture books based on the summary of their commonalities and differences.

4. Comparison and Discussion

4.1. A Comparative Analysis of Theme Selection

Themes are the prerequisite for training reading literacy.

Table 3 compares the two sets of picture books in five categories of themes: daily life, history and culture, natural environment, national geography, humanities and science, and summarizes different proportions of the five themes. Obviously, *New Shuangshuang Chinese Textbook* regards Chinese culture promotion as its priority, with two-thirds of the content (73%) on the "history and culture" themes. However, in *China Reader*, themes are distributed in a more balanced proportion, with the aim to comprehensively broaden the readers' horizon. The various selection of themes in picture books reflects different focus and goals. Relatively, the theme choice in *China Reader* is wide in range, beneficial to stimulate the readers' multiple intelligence.

Table 3. *Different Themes in the Two Series of Picture Books.*

Picture Books	Daily Life	History & Culture	Environment	National Geography	Humanities & Science
China Reader	20%	35%	15%	10%	20%
New Shungshuang Chinese Textbook	4%	73%	10%	0%	12%

Taking the theme of "natural environment" as an example, *China Reader* uses tables, Q&A sections to stimulate the readers' curiosity when introducing geographic locations, urban areas, flora and fauna, guiding them to take the initiative to learn and explore science and nature by means of triggering the natural intelligence. In the introductory part of *Xi'an's Past Life and Present Life*, a fill-in-the-blank table of the city area, population, climate is listed first, and then answers are provided in the reading materials with the aim to arouse readers' interest in observing the material world. At the same time, *China Reader* frequently uses anthropomorphic techniques to narrate stories and express emotions from the perspective of animals, highlighting the unique properties and voices of the main characters, convenient for readers to understand and accept. Under the angle of animals, the protagonists of the stories often embody cultural and educational such values as fairness, justice, courage, and friendship to effectively convey universal human characteristics. In terms of interpersonal intelligence, this anthropomorphic perspective is conducive to raise the awareness that animals are equal to humans, and develops reader's empathy for different species of life in nature. In contrast, *New Shuangshuang Chinese Textbook* adopts a "third-person" perspective, more inclined to unidirectional knowledge but less likely to resonate with readers. The story is also monotonous, lacking vitality and tension in plot and characters, thus not conducive to stimulate readers' interpersonal intelligence, and difficult to achieve the expected educational and comforting effects of picture books.

Generally, *China Reader* is more reasonable and scientific in theme selection, ensuring the comprehensive development of readers' cognitive abilities. It not only integrates the natural intelligence and interpersonal intelligence into "natural environment" themes appropriately, but also cultivates readers' concern and empathy for the nature. For improvement, Chinese picture books need to pay more attention to the balance of various themes, provide more knowledge and enlightenment about the natural environment, and raise the awareness of ecological protection and the sense of responsibility among teenagers, passing on Chinese traditional wisdom of "unity and harmony between man and nature". Besides, picture books in Chinese also need to inspire

readers to experience the outside world around them and use more "anthropomorphic" narrative techniques to stimulate the readers' interpersonal intelligence.

4.2. A Comparative Analysis of Vocabulary Arrangement

Vocabulary is the basic element to construct picture books. The recurrence rate of the keywords and the frequency of daily-used words will influence the quality of picture books. In terms of the recurrence rate of keywords, NLPIR online presentation platform and WordCounter website are used to calculate and classify the total number of words in the two books respectively. As shown in Figures 1 and 2, frequently appeared phrases such as "Chinese porcelain" "*yue* ware" "*jingdezhen* porcelain" in *Porcelain* and "pottery" "porcelain" and "colored porcelain" in *Chinese Porcelain* are keywords related to the theme. Statistics in Table 4 shows that the recurrence rate of "瓷 (china)" and "陶器 (porcelain)" in *Chinese Porcelain* is lower than that of "porcelain" and "ware" in *Porcelain*, which indicates that the book *Chinese Porcelain* does not focus enough on the theme and ignores the reinforcement and consolidation of the core vocabulary when compared with the book *Porcelain*. Low recurrence rate is less effective to activate the motor intelligence, and will lead to forgetfulness and low efficiency of vocabulary learning.

Table 4. Key Words Recurrence Rates of the Two Books.

Keywords	Repetition	Total Number of Words	Recurrence Rate
porcelain	52	2384	6%
ware	40	2384	5%
瓷 (*ci*, china)	40	741	5.3%
陶器 (*taoqi*, porcelain)	5	741	0.6%

Regarding the frequency of daily-used words, word cloud maps of the two books are created (Figures 3 and 4) to show that those frequently appearing words such as "Chinese" "great" "important" "quality" "made" in *Porcelain: From China to the World* are closely related to daily life. In contrast, words like "space vehicle" "absorbent" and "heat-resistant" in *Chinese Porcelain* are somewhat intricate and remote, which are not conducive to promote readers' daily communication, thus fail to trigger the existential intelligence.

Figure 3. Word Cloud Map of Porcelain: From China to the World.

Figure 4. Word Cloud Map of Chinese Porcelain.

Figure 1. Keywords Extraction in Porcelain: From China to the World (WordCounter Website)

Figure 2. Keyword Extraction in Chinese Porcelain (NLPIR online platform).

Vocabulary power must be enhanced by the repeated occurrence of the keywords in different contexts to strengthen students' understanding and memory. For one thing, motor intelligence must be triggered by reading and memorizing repeatedly to internalize the vocabulary. Secondly, existential intelligence requires the practice of language in daily life, and interpersonal intelligence also needs authentic communication in actual use of a foreign language in various contexts. Obviously, the vocabulary arrangement in *Porcelain* is more reasonable since most of its keywords are everyday linguistic expressions. This can maximally facilitate comprehension because it effectively utilizes multilevel intelligence of the readers. Reducing difficulty of the vocabulary will enhance the, readability of the picture book, which is also beneficial to improve the language learning efficiency.

4.3. A Comparative Analysis of the Graphic & Text Design

Non-textual forms such as picture selection, graphic tightness and color matching also affects the quality of picture books. According to the characteristics of spatial intelligence, pictures with specific scenes and humanistic feelings can stimulate readers' visual senses and trigger emotional resonance. The effective combination of graphics, text and color can not only enhance the richness of the content, but also stimulate the readers' image thinking.

In terms of picture selection, pictures in *Porcelain* are richly illustrated, among which a modern auction site and an ancient painting of "*Han Xizai*'s *Night Banquet*" by the Southern Tang Dynasty painter Gu Ma-zhong are posted, which skillfully reflects the historical value of porcelain and the popularity among its audience. However, porcelain pictures in *Chinese Porcelain* are isolated and monotonous with no background information (Figure 5), which is not conducive to readers' in-depth understanding and exploration of the content.

Graphic tightness is reflected in two aspects: pictures intensify the power of words and the suitable layout of words and text. For one thing, *Porcelain* inserts a vivid picture of craftsmen carving porcelains with puckered eyebrows and beads of sweat, which is closely related to the craftsmanship theme and text content. The visualized pictures blend with storytelling help clearly describe the development history and production steps of ancient porcelain. The close integration of pictures and texts increases the appeal and imperceptibly implements the value guidance. For another, *Porcelain* directly embeds the text into the color blocks of pictures and freely arranges them in the corners of the page, realizing the interlacing and fusion of graphics and text with a strong visual impact. In contrast, *Chinese Porcelain* divides the text and graphics into two separate modules, which lacks a unique artistic effect of blending integration and infection.

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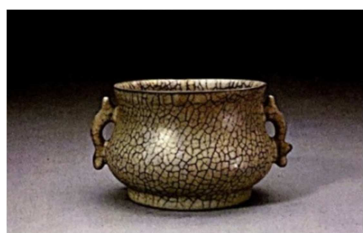**Figure 5.** *Porcelain display from Chinese Porcelain.*

Figure 6. *Porcelain Museum Display in Porcelain: From China to the World.*

In terms of color matching, *Porcelain* selects pictures taken in museums when introducing the classification of porcelain (Figure 6), and the overall color is dark, with low saturation and high contrast to create a gloomy and mysterious atmosphere and mood. The color of the picture is composed of brown-yellow, brown-white and black. There is no abrupt color changing or obvious dividing line, but rather a color gradient is realized through light and shadow, the soft and delicate picture looks realistic and vivid, natural and layered. Compared with the three-dimensional pictures in *Porcelain*, the two-dimensional pictures in *Chinese Porcelain* are mostly in plain white background, with single color and poor visual effect.

Generally, the graphic design of the English picture book *Porcelain* conveys rich cultural information while mobilizing readers' emotions. In other words, Chinese picture books fail to stimulate the visual-spatial intelligence of the readers which could be achieved by increasing the number of scene and emotion pictures in the graphic arrangement, choosing pictures with detailed descriptions and cultural elements, showing the regional culture and historical background. Regarding graphic coordination, Chinese picture books might flexibly lay out the pictures distribution, harmonize and match the colors, and use the light and shadow gradient effect and three-dimensional pictures to promote the psychological spatial construction ability and cultivate creative thinking.

5. Conclusion

Chinese picture books can be further improved in terms of theme selection, vocabulary arrangement and graphic design. First of all, more ecological and environmental protection themes could be added to contents to emphasize harmony between humanity and nature, and to stimulate readers' natural intelligence and interpersonal intelligence. Secondly, the recurrence rate of keywords and the use of daily vocabulary should be increased to reduce reading difficulty and stimulate readers' existential intelligence and interpersonal intelligence with focus on improving communication skills. Finally, the graphic & textual layout, the color choice and overall design of picture books should be enhanced to stimulate the spatial intelligence of adolescents so that the aesthetic quality of the picture books could be achieved. In conclusion, selecting appropriate themes, improving vocabulary utilization and optimizing graphic design can not only improve the quality of picture books but also foster the simultaneous development of young people's various intelligence, imperceptibly cultivate readers' reading literacy and language ability, and implement the comprehensive education.

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Conflicts of Interest

The authors declare no conflicts of interest.

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