

Beyond the Pages: Exploring Gender Stereotypes in Chinese Language Textbook

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Abstract: Textbooks serve a pivotal role in individuals' development, often presenting gender stereotypes that significantly influence children's perceptions. This study explores gender stereotypes in Chinese textbooks, focusing on how these stereotypes differ based on target gender and the domain of traits. The research examines gender stereotypes across various trait domains within 274 illustrations from 12 Chinese language textbooks. A coding scheme was developed to identify gender stereotypes about boys and girls in different trait domains, such as hairstyle, occupations, and color schemes. The results reveal a significant presence of gender stereotypes, with no variation between different genders but a notable difference among trait domains in the textbook illustrations. These findings suggest that Chinese language textbooks consistently depict significant gender stereotypes for boys and girls but vary based on the specific characteristics implied by the illustrations.

Keywords: gender stereotypes, content analysis, textbook, domain difference

1. Introduction

Gender stereotypes refer to general beliefs and expectations about the behaviors and characteristics of each sex, reflecting social norms and perpetuated through socialization [1,2]. These stereotypes are reinforced through various mechanisms, including perceptual and behavioral confirmation processes, which contribute to biased social interactions [3].

Gender stereotypes have been deeply ingrained in society for a long time, and their impact is far-reaching. While stereotypes may offer a convenient shortcut for making quick decisions, they can have several harmful consequences. Notably, gender stereotypes reinforce social and symbolic aspects of gender that contribute to social inequality and reinforce gender roles [2]. Specifically, there is a significant divergence between men and women in their careers and family positions. According to data collected by the United Nations Department of Economic and Social Affairs in 2020, only 47% of women of working age participated in the labor market, compared to 74% of men, and women held only 28% of managerial positions [4]. However, the reason for this divergence is not biological factors but rather social roles and power positions [5]. In conclusion, gender stereotypes exacerbate the disparities between men and women by perpetuating stereotypical social roles [6].

Understanding how textbooks might depict gender stereotypes is important because textbooks play a significant role in shaping students' perceptions and beliefs about gender roles and

expectations. Textbooks are often considered the primary source of information in classrooms, influencing how students view themselves and others in relation to gender.

1.1. Textbooks

Textbooks play a pivotal role in individuals' development, particularly during their formative years. Textbooks are associated with most of the activities related to teaching and learning in schools, where children become aware of their social position. Textbooks function as a “standard” language, providing a framework for education [7,8].

Furthermore, textbooks unintentionally propagate standardized ideas. With pre-designed textbooks readily available, teachers' responsibilities are simplified, and they may not feel the need to provide additional perspectives or offer personal opinions. This fosters a culture of dependency, reinforcing the influence of the selected textbook [9]. Such conveyed thoughts strongly shape children's perceptions, as they have already formed rigid stereotypes by the age of five [10].

In China, there is notable uniformity in textbooks, particularly in the field of language teaching. The People's Education Publishing House is the primary source of these textbooks, publishing language teaching materials approved by the Ministry of Education. These materials are prepared under the direct leadership of the Ministry of National Education and are implemented nationwide [11]. As a result, the Ministry of Education's language teaching materials hold significant influence over children's understanding and perception of their social position and social image positioning.

1.2. Gender Stereotypes in Textbooks

Textbooks play a crucial role in imparting knowledge and teaching the social studies framework to children, facilitating the development of cultural, geographical, ethical, historical, and cultural literacy [12]. However, it has been observed that gender stereotypes present in textbooks often provide extensive material for children to form gender stereotypes and develop a sense of maleness and femaleness, influencing their behavior [13]. This phenomenon has been widely documented in previous studies, where school texts reinforce gender stereotypes [13-20]. Illustrations in textbooks are of particular significance, as they define standards for feminine and masculine behavior [12,21]. Illustrations provide hidden information in the details, allowing children to freely connect the illustrations to their own lives, thereby reinforcing stereotypical behavior [21].

The phenomenon of gender stereotyping in textbooks has been extensively researched and documented in various countries, revealing both the presence of stereotypes and efforts to eliminate them. In Hong Kong, Chinese Language textbooks have been found to perpetuate stereotypical views of family and career positions [22]. Similarly, gender stereotypes can be seen in the illustrations of three main publishers of English textbooks for young learners (age 6) in Slovenia [12]. A pro-male bias was discovered in government secondary school English language textbooks from Malaysia, Indonesia, Pakistan, and Bangladesh [23]. Furthermore, two junior high school English language textbooks used in Indonesian schools revealed gender stereotypes, with men being portrayed as more agentic in both illustrations and context [24]. Computer science textbooks across three grades in Greece were found to have stereotypical biases [25]. Conversely, there are also textbooks that attempt to eliminate gender stereotypes. For instance, ESL/EFL (English as a second language/English as a foreign language) textbooks in Japan were found to have no gender imbalance, with women playing agentic roles [26].

While previous research has provided evidence of gender stereotyping in textbooks worldwide, there is limited research specifically focusing on Chinese textbooks. Since textbooks are influenced by the educational system and traditional concepts of teaching and learning, it is impractical to extrapolate research from other countries to the context of China [7]. Therefore, despite the existing

similarities in gender roles across different cultures [27], there are significant differences in the results of such research [28]. This highlights the need for specific research on Chinese textbooks, which is precisely why we have initiated this study.

1.3. Gender Stereotypes about Boys and Girls: Similarities and Differences

Gender stereotypes have always manifested differently between genders, reflecting variations in social roles. From a gender stereotype perspective, women are believed to be more communal, while men are seen as more agentic [29]. Consequently, women are associated with warmth and care, placing them in a lower social role construct, whereas men, symbolizing power, competence, and rationality, occupy dominant positions of control [30,31]. This stereotype even influences how behaviors are perceived. Research by Scott and Brown demonstrates that behavior inconsistent with gender stereotypes cannot be accurately encoded due to its contradiction with the stereotypical impression [32].

However, gender stereotypes also impose limitations regardless of gender. While women with masculine traits are perceived as more homosexual, agentic traits restrict men's lives as well. Men who exhibit emotional, gentle, and understanding qualities are rated as more homosexual [33].

1.4. The Present Study

The present study aims to identify gender stereotypes in Chinese textbooks. Specifically, the study aims to examine how gender stereotypes differ based on gender and the domains of traits. To assess gender stereotypes in textbooks, the first step involves defining and categorizing traits that appear in the textbooks as either gender stereotypes or non-gender stereotypes.

Illustrations are exclusively used as the subject for two reasons. Firstly, visual stimuli tend to leave a more lasting impression than abstract words, as they evoke and engage sensory experiences instead of solely relying on cognitive processing [22]. Additionally, illustrations with specific situations often contain indirect details, making the traits portrayed in the illustration's representative heuristics.

Language textbooks are selected as the research subject due to their uniformity and influence. As the sole standardized curriculum in China, children spend a significant amount of time in school reading and analyzing textbooks. During their elementary years, children are in a critical period for forming social cognition and standards. Consequently, the importance of teaching and examination is heavily inclined towards Chinese language, making it the focus of this study.

2. Method

2.1. Coding Scheme

Gender stereotypes have been defined as beliefs about the behaviors and characteristics of each sex [1]. Previous research has utilized coding schemes to assess gender appearance (stereotypical colors, patterns and themes, fabrics/fit, formalwear etc.), gender stereotypes in school, and gender stereotypes in textbook texts [12,24,34,35].

To test for gender stereotypes, a new coding scheme has been developed based on previous coding schemes. Information in illustrations is categorized into 12 domains: representees, centeredness, color, patterns and themes, occupation detail, setting details, labor force, formalwear, accessories, shoes, appearances, and hairstyles. Due to the complexity of coding results for the domains of representees and labor force, these two domains will not be included in the subsequent discussion. For each domain, a score of "0" is assigned if the feature is not present, "1" for non-stereotypical representation, "2" for gender-stereotypical representation, and "3" if the illustration is

partly gender-stereotypical. Each domain is coded separately for gender. Specifically, for the labor force domain, boys are rated as "1" for field trips, "2" for working at a workplace, "3" for studying/playing at school, "4" for thinking, "5" for engaging in social activities, "6" for having conversations with others, "7" for doing housework, and "0" if not available. The opposite applies to girls.

2.2. Data Analysis

To effectively identify the presence of gender stereotypes in illustrations, researchers first utilize SPSS (Statistical Package for the Social Sciences) to calculate the percentage ratio of gender-stereotypical and non-gender-stereotypical traits. Once these ratios are determined, non-parametric statistical tests are employed for further data analysis.

First, the study employs the related sample Wilcoxon Signed Rank test [36], a non-parametric test, to assess the differences between gender-stereotypical and non-gender-stereotypical traits. This test is used to compare related samples within a group.

Next, the study employs the Independent-Samples Mann-Whitney U Test [37], another non-parametric test, to examine whether the distribution of stereotypes is the same across different gender categories. This test assesses the differences between two independent groups on a single ordinal variable.

Furthermore, the Kruskal-Wallis Test [38], a non-parametric test for independent samples, is used to determine whether the distribution of stereotypes is the same across different categories of traits. This test assesses differences among three or more independently sampled groups on a single continuous variable that does not follow a normal distribution.

In this study, the percentage of gender-stereotypical and non-gender-stereotypical traits within each domain is analyzed as independent samples across gender categories and types of domains.

3. Result

To examine the presence of gender stereotypes in textbooks, a Wilcoxon signed-rank test was conducted. The results revealed a significant effect, with a z-score of 7.500, and $p = .001$, indicating strong gender stereotypes in the textbooks.

3.1. Differences in Gender Stereotypes about Boys and Girls

To investigate whether gender stereotypes differ in the portrayal of boys and girls in textbooks, a Mann-Whitney U test was performed. The analysis showed no significant difference in gender stereotypes between boys and girls in the textbooks (Mann Whitney $U=37.00$, Man Whitney $Z=-0.310$, and $p=0.796$), indicating similar gender stereotypes for both genders.

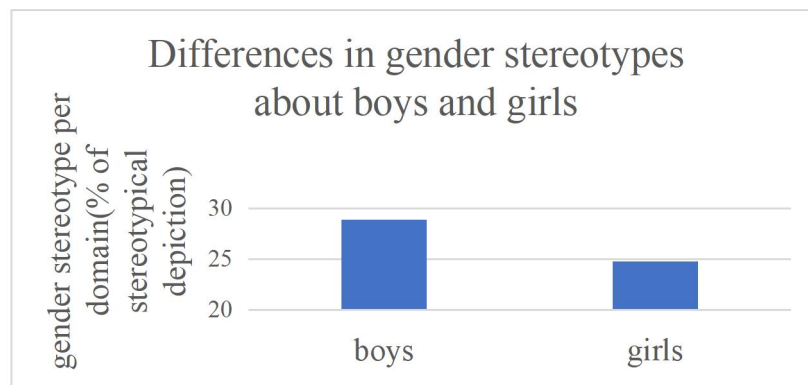


Figure 1: Mean scores of gender stereotypes about boys and girls.

3.2. Gender Stereotypes among Different Domains of Traits

To explore whether gender stereotypes vary across different domains of traits presented in illustrations, a Kruskal-Wallis test was conducted. The results revealed a significant difference in gender stereotypes among the domains (Kruskal-Wallis $H=15.714$, $p=0.047<0.05$), indicating notable variations in gender stereotypes across different trait domains depicted in the textbooks.

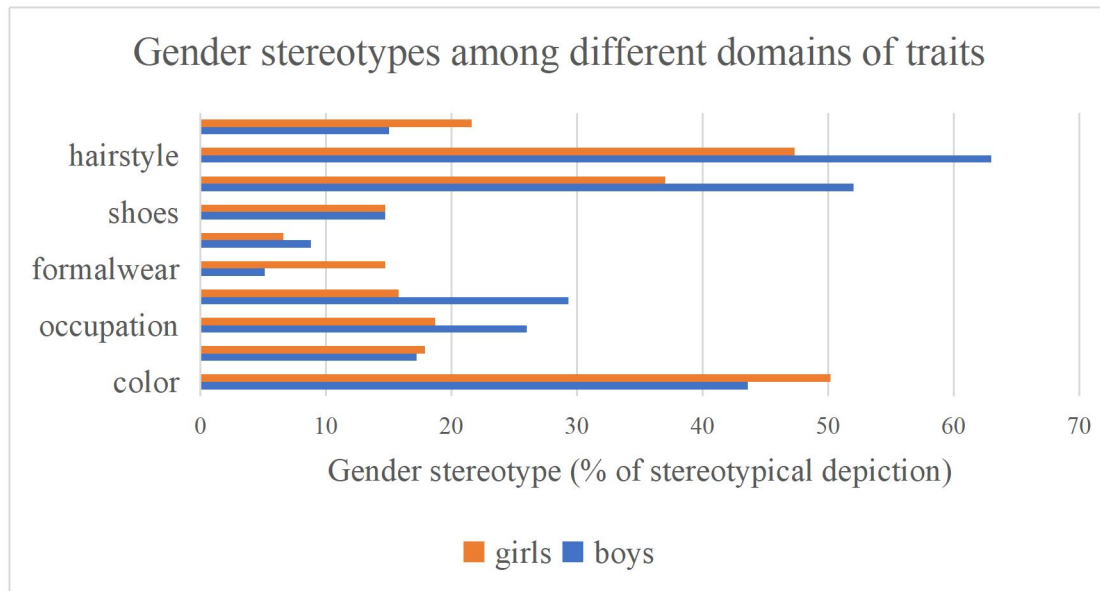


Figure 2: Mean scores of gender stereotypes among different domains of traits.

4. Discussion

4.1. General Discussion

In this study, a total of 274 illustrations from 12 Chinese language textbooks were recorded and analyzed to examine gender stereotypes. A coding system was developed to assess the presence of gender stereotypes within the illustrations. The results indicated no significant differences in gender stereotypes between different genders. However, significant variations were observed in gender stereotypes across different domains. These specific findings have sparked various discussions and interpretations within the study.

The presence of gender stereotypes in textbooks is not surprising, as textbooks often reflect cultural attitudes and educational perspectives. Given that gender stereotypes exist in society, it is inevitable for them to be reflected in educational materials. The presence of gender stereotypes in textbooks not only reflects societal norms but also reinforces and perpetuates those stereotypes. When children read gender-stereotyped textbooks, it can contribute to the development of more gender-stereotyped thinking, thus perpetuating traditional gender roles and expectations. Additionally, gender non-conformity also plays a role in the existence of gender stereotypes in textbooks. Research has shown that children with high gender non-conformity may face challenges in peer relationships, as they are less popular and receive less positive attention [39]. Textbooks that depict gender stereotypes may, to some extent, mitigate negative relationship outcomes by promoting gender conformity, as children seek social connections and positive relationships, which are innate human traits.

The findings of this research align with previous studies conducted in Asia, where textbooks in Malaysian, Indonesian, Pakistani, and Bangladeshi schools have shown varying degrees of gender

stereotypes [23]. The shared historical and cultural backgrounds contribute to the similar development of gender stereotypes in these regions. Similarly, in Hong Kong, gender-stereotyped textbooks have been found to be prevalent [22]. Again, the shared history, beliefs, and cultural context contribute to these similar findings. However, there are also previous studies that present different results. For example, an EFL textbook titled "Conversation Topics for Japanese University Students" did not find gender imbalance or gender stereotypes, but instead identified stereotypes related to the conversation and illustration topics [26]. This non-gender stereotype in Japanese textbooks can be attributed to the active women's groups and the growth of Japanese feminism throughout the past century. Women in Japan have been vocal about gender issues, and as a result, several women-friendly policies have been adopted. While gender stereotypes are still present in Japanese society and textbooks, the efforts of women's groups have made progress in reducing their presence to some extent.

Surprisingly, this research discovered similar gender stereotypes among boys and girls. Although the findings are unexpected, there are indications that support this result. Previous research consistently demonstrates the existence of masculine and feminine stereotypes for both men and women, which are deeply ingrained in society without significant differences. While women are wrongly assigned lower social roles, men are also erroneously assigned higher social roles. Both of these misconceptions are stereotypes. Males who possess qualities such as gentleness, caring, and willingness to compromise are often overlooked and considered less masculine, highlighting the existence of gender stereotypes in males as well. Thus, just as there are prevalent gender stereotypes for females, there are also gender stereotypes for males.

Previous research has extensively discussed gender stereotypes in relation to gender non-conformity, particularly focusing on the preference for gender non-conforming individuals. However, previous studies have consistently shown a preference for gender non-conforming girls over gender non-conforming boys in various contexts such as choosing classmates, forming friendships, or assigning positions [39-42]. The discrepancy in results arises from the fact that the preference for gender non-conformity does not necessarily imply a positive relationship with its presence. Instead, the preference inadvertently indicates that there is an equal chance for both gender conforming and gender non-conforming individuals to be evaluated, recognized, and represented. Therefore, although previous research demonstrates a preference for female gender stereotypes, both gender stereotypes are equally represented.

In addition, significant differences were found in gender stereotypes across different domains. Hairstyles serve as a prominent visual characteristic that captures people's attention [43,44]. Therefore, as a representative heuristic, it is easy for people to associate gender with a particular hairstyle. Previous research reveals that physical cues, such as hairstyle, indicate gender [45,46]. For example, short haircuts are considered masculine, while long hair or ponytails are often viewed as feminine. The association between hairstyle and gender has also influenced people's perceptions. Research conducted by Plant et al. found that, with different hairstyles and all other traits being identical, people perceive the two images as different genders. This research demonstrates that hairstyles can evoke gender-stereotypical knowledge, which is consistent with research conducted in China [47].

Appearances, in the context of this study, refer to gender-typed visual elements such as hearts, flowers, and lace borders for females, and sports-related content and briefcases for males, which aligns with previous coding systems used in other research. As shown in the accompanying graph, appearances constitute the second most frequent domain of gender stereotypes depicted in textbooks. These gender-stereotyped appearances reflect both agentic and communal traits. For instance, girls depicted with flowers are perceived as delicate and perceptive, while boys associated with sports elements symbolize power and bravery. It is evident that these appearances serve as metaphorical

expressions of agentic and communal traits. Since they are directly linked to the concept of gender stereotypes, it is expected that as long as gender stereotypes exist in society, they will be manifested in these visual elements. The bar chart presented earlier indicates that formalwear displays the least amount of gender stereotype for both girls and boys, with minimal differences. Formalwear includes dress types like patent leather or Mary Janes for girls and ties or other work-related clothing for boys. The existence of gender stereotypes in formalwear originates from societal perceptions of women's social positions. Women have long been associated with communal roles and have been considered unsuited for physically demanding work. As a result, women are often depicted in positions related to entertainment or other roles that do not require significant physical movement. Consequently, the association between females and formalwear that values appearances rather than practicality has developed over time. However, as society embraces women in various professional positions, and thanks to persistent efforts from women's institutions, women now have opportunities to work in positions that prioritize practical clothing. Therefore, the gender stereotype associated with formalwear is gradually diminishing in society and also in the representation of textbooks.

4.2. Limitations and Future Research

This research does have certain limitations that should be acknowledged and addressed in future studies. Firstly, the coding process was conducted by a single coder, which potentially introduces coder bias and human error. To enhance the reliability and validity of the coding, it would be advantageous to involve multiple coders and establish intercoder reliability measures, such as independent coding and comparing the results to ensure consistency.

Furthermore, this study focused exclusively on Chinese language textbooks, neglecting the examination of math and English textbooks, which also play a significant role in shaping students' perceptions. Including a broader range of subjects in future research would provide a more comprehensive understanding of gender stereotypes across different academic domains.

5. Conclusion

In conclusion, this research aimed to analyze the prevalence of gender stereotypes in Chinese language textbooks. The study findings indicate that while there were no significant differences in gender stereotypes between boys and girls, substantial variations were observed across different domains. These results not only offer valuable insights and lay the groundwork for future research on gender stereotypes in China but also emphasize the significance of acknowledging and addressing gender stereotypes in textbooks to foster an inclusive and equitable educational environment. Consequently, this research can contribute to ongoing discussions and potential revisions in textbook content and presentation, with the aim of reducing gender stereotypes and promoting a more balanced portrayal of gender roles.

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