Gender Representation in Example Sentences: A Study of Chinese EFL Undergraduate Grammar Textbook

Ya Xu and Yi Zhang*

School of Foreign Studies, Northwestern Polytechnical University (NPU), Shaanxi, Xi'an, China
Email: xuyaaa@mail.nwpu.edu.cn (Y.X.), yizhang@nwpu.edu.cn (Y.Z.)
*Corresponding author

Abstract—The study of gender representation in textbooks began in the 1970s, and a number of studies have covered the issues of gender stereotypes and gender bias in textbooks. To explore whether such phenomena exist in Chinese EFL textbooks, the present study adopted quantitative and qualitative methods to investigate the example sentences in a textbook *New Grammar Course* with the guidance of Macaulay and Brice's coding scheme. Regarding the gender representation in the example sentences, the study first found that male-gendered arguments outnumbered female-gendered arguments significantly. Second, this suggested that males were more represented as subjects and agents while females as objects and patients. Third, it showed that females were more likely to be referred to a kinship term like wife whereas males were likely to have more decent occupations, do more intellectual work, and perpetrate violence. This study aims to show the phenomena of gender inequality in the current textbook, and have some implications for revision work of Chinese EFL textbooks.

Keywords—example, gender studies, English as a Foreign Language (EFL), EFL textbook, gender representation

I. INTRODUCTION

Gender equality is a topic involving social, political, economic, cultural and other fields, its development history can be traced back to the end of the 19th century and the beginning of the 20th century. Gender inequality has existed for a long time in human history and society, and women are regarded as marginal and second-class citizens, unable to participate in society or public affairs as energetically as men. In the past few decades, gender equality has received the attention of more countries and people. At the same time, governments and international organizations have also taken a series of measures to promote gender equality. In 1945, the United Nations was established as the international body to promote gender equality and held the first World Conference on Women in 1975, which officially placed gender equality high on the UN agenda. In 1995, the United Nations held the Beijing World Conference on Women and adopted the Beijing Declaration and Platform for Action, which set out the goals and measures for promoting gender equality worldwide. In addition, various forms of gender equality campaigns and policies have been widely implemented in other areas and countries. China launched the "Double Plan" in 1995, aiming to improve women's education level and employment rate, and promote women's economic independence and social status by providing education, training and employment opportunities. The rise of the women's rights movement in the United States led to the passage of the Education Amendment Act of 1972, which outlawed sex discrimination on campus. The Equality Act of 2005 explicitly prohibits any form of direct or indirect discrimination. These policies and campaigns have had a tremendous impact on the advancement of women and have contributed to increasing awareness of gender equality. However, Yang [1] believed that gender inequality has never been eliminated, and biased attitudes towards women, as well as stereotypes about both sexes, remain widespread.

Yang [2] thought that people can form gender stereotypes through various social media, such as schools. In the field of school education, textbooks are important resources for students to learn and have a significant impact on students' cognition and attitude. The existence of gender inequality in textbooks may have a negative impact on students' gender cognition, gender role identity, gender bias and so on, thus affecting students' learning and development. In other words, how gender is portrayed in textbooks may affect how students understand men and women and how they behave in society. Lee and Collins [3] contended that if textbooks convey messages of gender stereotypes or bias, they may distort students' self-image and image of the opposite sex, and Ullah and Skelton [4] believed that such presentation of gender may further fuel sexism and inequality. Therefore, how to reflect gender in textbooks deserves great attention.

Gender studies has some positive significance for promoting gender equality in the field of education and society. Firstly, it is conducive to enriching domestic research on gender presentation based on textbooks, attracting more scholars to pay attention to the characteristics of gender presentation in textbooks, and providing a certain reference for subsequent relevant research. Through the study of English textbooks, it can also effectively attract the attention of students and scholars and the attention of relevant education departments. Secondly, it contributes to revealing gender discrimination and inequality in the field of education and promoting gender equality in this field. By revealing gender inequality in textbooks, it can arouse the attention of educators and decision makers, and promote the advancement of gender equality policies and practices in education. At the same time, such research can also provide reference and guidance for the preparation of textbooks and promote gender equality in education. Thirdly, it will be helpful to promote gender equality in society. Education is an important part of society, and the practice of gender equality in the field of education can have a positive impact on gender equality in society. By studying the phenomenon of gender inequality in textbooks, we can promote the awareness and understanding of gender equality in society.

Example Sentences are a central tool in teaching and research in the field of linguistics, often considered a key source of evidence to substantiate claims about a language or

construction. In this study, a well-known Chinese undergraduate English grammar textbook was selected as the object, and a small corpus was established by collecting gender-related examples in the textbook. The framework established by Macaulay and Brice [5] was used as the annotation system to investigate the presentation of gender in undergraduate English grammar textbooks. It also tries to analyze whether there is gender bias and stereotype in teaching materials.

II. LITERATURE REVIEW

Since the 1970s, gender representation in textbooks has been a focal point of research in Western academia. Previous studies commonly employ two methods for analysis: content analysis and language analysis. Yang [1] believed that content analysis is a quantitative approach that involves the frequency count of specific. Studies have used this method to count the number of male and female characters, their roles, characteristics, and activities. Language analysis, on the other hand, is a standard method for examining gender representation in English as a Foreign Language (EFL) and English as a Second Language (ESL) teaching material. It encompasses the analysis of linguistic features, such as masculine and feminine referents (e.g., proper nouns, pronouns), adjectives, verbs, masculine generalizations, and linguistic functions.

Some scholars have examined the quantity of words spoken by male and female speakers. Hartman and Judd [6] found an imbalance in the distribution of male and female roles in textbooks. Female characters had minimal visibility in reading texts and lacked motivational role models. Wang's [7] corpus study found a significant disparity between male and female pronouns in two English textbook series, with male pronouns appearing 1,279 times and female pronouns only 636 times. Similarly, in three EFL textbooks widely used in German secondary schools, female participation in story events was less than 30%, while in Hellinger's [8] study, male participation was more than 93%. Amini and Birjandi [9] found that in two EFL textbooks used in Iranian high schools, male characters appeared almost four times as often as female characters.

Firstly, research indicates the assignment of different roles to men and women. Some studies reveal that men are often portrayed as family breadwinners, while women have caregiving roles. Hartman and Judd [6] founded that women are typically assigned housework and childcare tasks, while men have limited involvement. Zhang and Yang [10] discovered a higher number of male characters in their content analysis of three series of English teaching materials. Additionally, statistics on the frequency of occupational and family roles revealed a wider range of occupations assigned to men, whereas women were more commonly assigned various household tasks, such as meal preparation. Barton and Sakwa [11] argued that men tend to be depicted in a broader range of occupations, often prestigious and well-paid, while women's jobs are typically lower paid and require less education. Although there are occasional depictions of female professional characters, they are usually limited to specific themes or chapters.

Secondly, research on personality traits has also revealed gender differences. Study of Hartman and Judd [6] showed that women are often portrayed as overly emotional, whereas men are helpful and superior. Similarly, Hellinger [8] found

that women are stereotypically described as emotional and passive. Furthermore, Evans and Davies [12] found that male characters more frequently displayed traditional masculine characteristics than female characters. Men were significantly aggressive, competitive, and argumentative, while being less likely to be described as good at emotional expression, affection, and tenderness.

Lastly, male and female characters in the surveyed textbooks were also assigned stereotypical activities. For example, men were more often described as engaging in sports-related activities in Ullah and Skelton's study [4], physical activity in Lee and Collins' study [13]. On the other hand, females were more likely to engage in quiet indoor games in Bahiyah *et al.*'s study [14], and beauty-oriented activities in Hartman and Judd's study [6], such as reading fashion magazines and buying cosmetics. Hellinger [8], in a study analyzing the predicates after 215 female-dominated nouns, found that women tended to engage in activities limited by the presence of men.

In summary, previous studies have identified certain differences in role portrayal, character representation, and participation in activities in textbooks, reflecting gender stereotypes. Most of the research has focused on elementary, middle, and high school textbooks, with few studies specifically examining undergraduate textbooks. Furthermore, the majority of studies rely solely on either content analysis or language analysis, with limited integration of the two methods. There is also a lack of studies utilizing software annotation for statistical analysis. Additionally, further research is needed to explore the differences in male and female performance in different activities. In comparison to foreign countries, there is a lack of related research in China. This study aims to further enrich the study of gender in domestic textbook.

III. METHODOLOGY

In this study, we employ quantitative and qualitative analyses to investigate gender representation in a widely used undergraduate textbook in China. The use of quantitative analysis allows for a scientific and objective examination of the differences in frequency between men and women in specific roles, personality characteristics, and activities, thereby effectively highlighting gender inequality. Serving as a complement to quantitative analysis, qualitative analysis enables a deep analysis of the linguistic features and contextual meanings of descriptions of men and women in example sentences. This helps to identify gender stereotypes and gender discrimination.

A. Research Question

With the coding framework, the study intends to answer following question:

1) What is distribution of male and female portrayed in the form of gender address, in grammatical function, theta- role, different activities and lexical choice?

2) Is there any gender bias or stereotypes in the distribution of sentence examples?

B. Data Collection

The corpus for this study consists of Example Sentences extracted from the textbook *New Grammar Course* used in China University. This textbook is on the list of the national planning textbooks for undergraduate students of general

higher education and is one of a series of textbooks for undergraduate students majoring in English in colleges and universities. *New Grammar Course* is a grammar reference in which the author would make many sentences to illustrate some grammatical phenomenon and to tell students how to apply certain grammatical structure to authentic application. For example, the author clarifies the Recipient Object with sentences "She lowered her head and said nothing" and "The ball hit boy on the head," in which italicized words are recipient objects. A total of 684 examples related to gender are collected from this book.

C. Data Coding

This study primarily adopts the theoretical framework proposed by Macaulay and Brice (1997), which has been widely influential and used in the analysis of various textbooks and English articles. It has also been extensively discussed in terms of gender representation in English. We use five labeling methods in our coding: gender of the argument, form of gender address, grammatical function, thematic role, and lexical choice, which is mainly presented as follows:

1) Gender of the argument (male, female, both, ambiguous, other)
2) Form of gender address (pronoun, proper name, kinship terms, other)
3) Grammatical function (subject, direct object, indirect object/oblique)
4) Theta roles (agent, patient, experiencer, recipient, etc.)
5) Lexical choices (violence, occupation, appearance, etc.)
6) Activity (physical, intellectual, emotional, etc.)

D. Procedure

We utilize the UAM Corpus Tool and AntConc for data analysis. Firstly, we create a project named "gender study" and establish a self-built coding framework in the UAM Corpus Tool. All example sentences are then imported into the software as a file. Secondly, we manually code all the sentences one by one. Finally, we automatically calculate the data with the assistance of the UAM Corpus Tool, and we use AntConc to retrieve all the information and compare the differences between male and female. Fig. 1 shows the interface of coding process in UAM corpus tool.
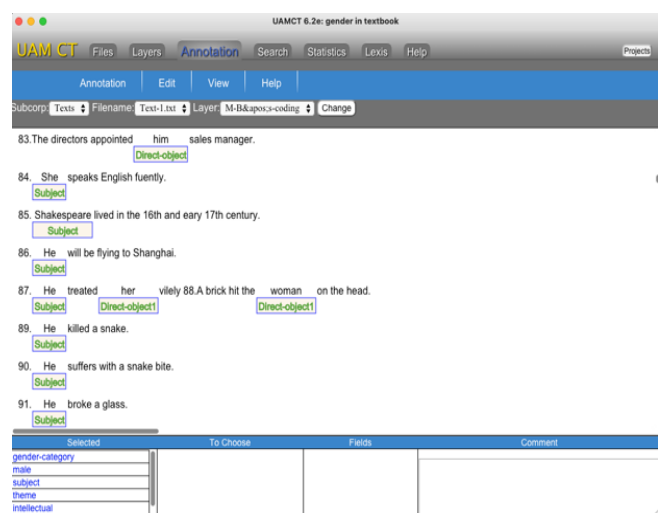

Fig. 1. Framework and coding process in UAM corpus tool.

IV. RESULT AND DISCUSSION

A. General Distribution in Gender Representation

Table 1 presents the general distribution of gender in the examples. Out of the 684 examples, male characters are portrayed 453 times, accounting for 66%, while female characters are portrayed 28% of the time, amounting to 193 occurrences.

Example:

Male: Tom was fired for having joined in the strike.

Female: She is in good health.

Both: Miss Landstorm came to the party, but Mr. and Mrs. Sherman did not.

Ambiguous: My cousin often comes out with the cleverest remarks.

Other: The cat leaped onto my bed and coiled herself there.

Table 1. General distribution of gender in examples

Gender type	Number
Male	453
Female	193
Both	12
Ambiguous	23
Other	3
Sum	684

Besides, male and female appears 12 times at the same time and some ambiguous expression like cousin appears 23 times. Other refers to the situation where the cat is called "her" in the sentence examples. Here ambiguous expression means that some expressions which involve person without telling their gender directly and hard to recognize them, like cousin. Category of Other here refers to the situation that there appears some expression which is a representative of gender like her, but the entity "her" refers to is animal, which in practice doesn't belong to male or female. And all the last three types are excluded from the further analysis. According to the huge contrast in number, it can be seen that male-argument is used more frequently than female-argument.

B. Address Form

For further study, the address form of male and female are calculated in four types, including pronoun, proper name, kinship terms and other forms. The following Table 2 provides the specific distribution of them separately.

Table 2. Address form of gender representation

Type	Male	Fre.	Female	Fre.
Pronoun	256	56.51%	105	54.40%
Proper name	90	19.87%	48	24.87%
Kinship terms	32	7.06%	12	6.22%
Other form	75	16.56%	28	14.51%
Sum	453	100.00%	193	100.00%

From Table 2, it can be observed that pronouns are the most frequently used form of gender address for both male and female, with 256 and 105 occurrences respectively. Pronouns represent more than half of the addressing form used for both genders, accounting for 56.51% for males and 54.40% for females. The second most frequently used type is proper names, with 90 occurrences for male and 48 occurrences for female. The table reveals that while proper names referring to males outnumber those referring to females, proper names representing females have a higher

percentage. Kinship terms are also commonly used to refer to males or females. For males, kinship terms appear 43 times, while for females, they appear only 12 times.

To determine the most frequently used names in Chinese grammar textbooks, we compiled a list of the names used for both males and females. Fig. 2 illustrates that "John" and "Tom" are the most commonly used names for males, while "Mary" is the most frequently used name for females. Additionally, other names such as "David", "Jim", "Joe", "Bob", "Frank", "Mike" and "Peter" are common characters in textbooks for primary and high school students. However, some names for females, such as "Nancy", "Joan", "Susan" and "Jennie" may not be as familiar to those students.
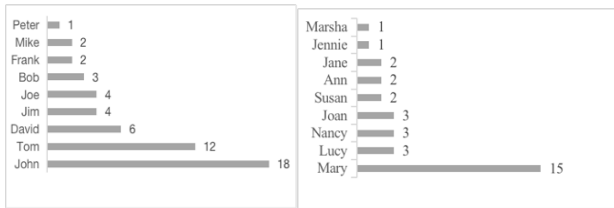
Fig. 2. Num. of male and female' s name.

In terms of kinship terms, there are four types of kinship terms used to refer to males, namely father, husband, brother, and son, in decreasing order of prevalence. Father accounts for 43%, husband for 11%, brother for 41%, and son for 5%. For females, mother is the most frequently employed term, accounting for 50% of occurrences, followed by wife at 39% and sister at 11%. When comparing the distribution of husbands and wives, it is evident that the number and percentage of wives are much higher than those of husbands, which suggests that females are portrayed as more dependent on husbands and as appendages to males. Fig. 3 shows the frequency and common kinship terms for female and male and its frequency respectively.

Example:

1. My wife is always getting on at me for not keeping the room clean.

2. The film is about a spy whose wife betrays him.

3. My wife doesn't know Russian.

4. She doesn't look as much of a scholar as her husband

5. Lyn lived with her husband in a house that they had bought for a song in nearby Seyer Street. The house was cheap partly because it was falling down.
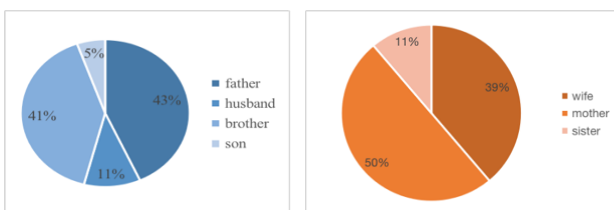

Fig. 3. Kinship terms for male and female.

C. Grammatical Function

The distribution of arguments according to grammatical functions is fully considered. In Fig. 4, 75.72% of male arguments are subjects (343 out of 453), while 75.13% of female arguments are subjects (145 out of 193). Furthermore, there are twice as many male arguments as subjects compared to female arguments as subjects. This indicates that female-gendered arguments are less likely to occur as subjects and more likely to occur in non-subject roles, such as direct and indirect objects, compared to male-gendered argument.
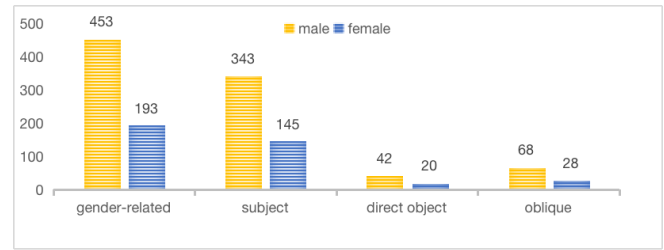

Fig. 4. Gender representation in grammatical function.

D. Theta-role

Similarly, the distribution of male and female arguments in thematic relations has also been explored. The results in Table 3 show that female arguments represent 57.51% of agents (111 out of 193), 0.52% of experiencers (1 out of 193), 7.77% of patients (15 out of 193), and 26.42% of themes (51 out of 193). On the other hand, male arguments represent 52.32% of agents (237 out of 453), 5.96% of patients (27 out of 453), 1.77% of experiencers and recipients (8 out of 453), and 17% of themes (77 out of 453). Comparing the frequency of patients, it can be seen that females are regarded as the goals of action more often than males.

Table 3. Gender representation in Theta-role

Type	Male		Female	
	Num.	Fre.	Num.	Fre.
Agent	237	52.32%	111	57.51%
Patient	27	5.96%	15	7.77%
Experiencer	8	1.77%	1	0.52%
Recipient	8	1.77%	0	0.00%
Theme	77	17.00%	51	26.42%
Other roles	96	21.19%	15	7.77%
Sum	453	100.00%	193	100.00%

E. Activity

Fig. 5 illustrates the different distribution of activities that males and females are inclined to engage in. It can be observed that males are more likely to participate in physical activities (135 times), emotional activities (28 times), intellectual activities (51 times), and perceptual activities (18 times) compared to females. On the other hand, females are underrepresented in these aspects, with only 17 occurrences of physical activities, 8 occurrences of emotional activities, and 14 occurrences of intellectual activities. The only area where females are relatively equal to males is in romantic affairs.
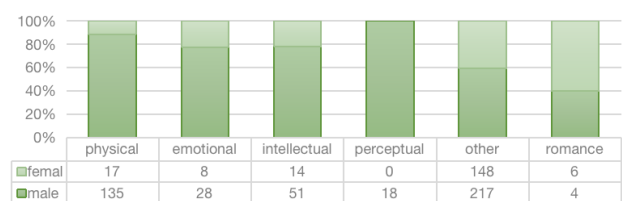

Fig. 5. Gender representation in activity.

F. Lexical Choice

In the study of lexical choice, three aspects are investigated: arguments related to violence, appearance, and occupation. Fig. 6 shows that males are more closely associated with violence, place a greater emphasis on appearance, and have more decent jobs.
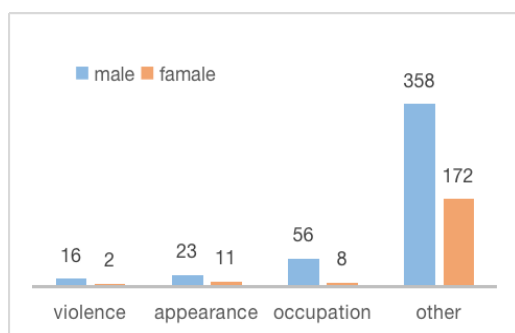

Fig. 6. Gender representation in lexical choice.

Among the arguments involving violence, there are 18 relevant events, in which males are regarded as subjects 11 times and objects 5 times, while females are only regarded as objects twice. This reflects that males may be the perpetrators of violence and females may be victims of violence to some extent. However, the existing data may not be entirely convincing.

Example:

6. He killed a snake.

7. He kicked me in the belly.

8. Whoever killed the girl will be sent to prison.

It is noteworthy that sentences related to appearance focus more on males than females. This contradicts the common belief that females are more interested in appearance. Furthermore, to study the different representations of occupation, the main types of jobs involved are calculated and shown in Fig. 7.
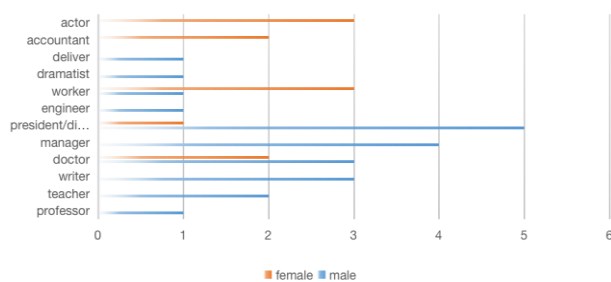

Fig. 7. Gender representation in occupation.

Example:

9. Since his mother is an accountant, he is going to major in it.

10. She works at a chemical factory.

11. My father is a doctor, and he wants me to follow the same profession.

12. Hammond is the president of a university in Sweden.

In terms of gender representation in occupation, it can be observed that females could be actors, workers, accountants, doctors, and presidents, while males could be presidents, managers, doctors, writers, teachers, professors, engineers, workers, delivery personnel, and dramatists. Generally speaking, males have a greater variety of jobs than females, and these jobs are usually more respectable and better paid.

V. CONCLUSION

A. Finding

This study utilizes quantitative and qualitative analysis to explore the gender representation in a commonly used undergraduate textbook in China, using the theoretical framework proposed by Macaulay & Brice (1997). Five labeling methods were employed: gender of the argument, form of gender address, grammatical function, thematic role, activity, and lexical choice. The results have shown that males have a much higher frequency of occurrence than females in almost every subcategory of the coding scheme in all five aspects. Furthermore, gender stereotypes and biases are evident, including: (1) Males are more frequently represented as subjects and agents, while females are represented as objects and patients. (2) Female-gendered arguments are more likely to be referred to with kinship terms, especially as wives. (3) Male-gendered arguments are more likely to have more respectable occupations and engage in more intellectual work. Most of these results can be predicted due to the higher economic status and division of labor historically assigned to males. As males were more likely to receive higher education, they obtained more decent jobs and engaged in intellectual activities, making them the center of the family. However, the results also show some interesting phenomena, such as males focusing more on appearance than females, which contradicts common perceptions. This may be because males, in a free economy, have more time to focus on their physical appearance, clothing, and decoration. Nonetheless, further investigation with more authentic data is necessary to confirm this.

B. Limitation

Furthermore, the study has some limitations. Firstly, the corpus size could be larger. The current data only considers examples from the first 12 chapters, which could be supplemented with additional chapters. Secondly, the study lacks supportive statistical tests. All comparisons are made based on frequency, which can be less convincing. Conducting statistical tests would make the results more meaningful and persuasive. Lastly, the theoretical framework could be further improved. Through practical annotation, repetitions and other factors can be addressed, such as the strategies employed in the descriptions.

This paper investigates the gender representation in one domestic grammar textbook and corroborates previous studies while also presenting some surprising findings. It enriches the study of gender in domestic textbooks and provides insights for promoting gender equality in education and society.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Ya Xu made the main work including corpus building, data analyzing and paper writing; Zhang Yi provided many good suggestions to revise the paper; both authors had approved the final version.

REFERENCES

[1] C. C. R. Yang, "Gender representation in Hong Kong primary English language textbooks: A study of two widely-used textbook series," Ph.D. dissertation, Lancaster: Lancaster University, 2014.

[2] C. C. R. Yang, "Is gender stereotyping still an issue? An analysis of a Hong Kong primary English textbook series," *Hong Kong Journal of Applied Linguistics,* vol. 13, no. 2, pp. 32–48, 2012.

[3] J. F. K. Lee and P. Collins, "Gender voices in Hong Kong English textbooks: Some past and current practices," *Sex Roles*, vol. 59, pp. 127–137, 2018.

[4] H. Ullah and C. Skelton, "Gender representation in the public sector school textbooks of Pakistan," *Educational Studies,* vol. 39, no. 2, pp. 183–194, 2013.

[5] M. Macaulay and C. Brice, "Don't touch my projectile: Gender bias and stereotyping in syntactic examples," *Language*, vol. 73, no. 4, pp. 798–825, 1991.

[6] P. L. Hartman and E. L. Judd, "Sexism and TESOL materials," *TESOL Quarterly*, vol. 12, no. 4, pp. 383–393, 1978.

[7] W. Li, "A corpus-based study of gender pronouns in college English textbooks," M.S. thesis, Journal of Lanzhou Jiaotong University. 2016.

[8] M. Hellinger, "For men must work, and women must weep: Sexism in English language textbooks used in German schools," *Women's Studies International Quarterly*, vol. 3, pp. 267–275, 1980.

[9] M. Amini and P. Birjandi, "Gender bias in the Iranian high school EFL textbooks," *English Language Teaching,* vol. 5, no. 2, pp. 134–147, 2012

[10] J. Zhang and Y. L. Yang, "A study of language sexism in the construction of primary school English textbooks," *Tsinghua University Education Research*, vol. 24, pp. 73–76, 2003.

[11] A. Barton and L. N. Sakwa, "The representation of gender in English textbooks in Uganda," *Pedagogy, Culture & Society,* vol. 20, no. 2, pp. 173–190, 2012.

[12] L. Evans and K. Davies, "No sissy boys here: A content analysis of the representation of masculinity in elementary school reading textbooks," *Sex Roles*, vol. 42, no. 3, pp. 255–270, 2000.

[13] J. F. K. Lee and P. Collins, "Australian English-language textbooks: The gender issues," *Gender and Education*, vol. 21, no. 4, pp. 353–370, 2009.

[14] D. Bahiyah, M. Abdul, M. Subakir, B. Yasin, K. Yuen, and J. Azhar, "Linguistic sexism and gender role stereotyping in Malaysian English language textbooks," *GEMA Online Journal of Language Studies,* vol. 8, no. 2, pp. 45–78, 2008.