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The Gender Mirror in Education: Primary and Secondary School Students and Gender Stereotypes

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Abstract: Gender stereotypes have a profound impact on the self-perception and academic development of primary and secondary school students. This paper reviews the manifestations of gender stereotypes in educational materials and teacher behavior, as well as their potential limitations on students' gender identity and career choices. The article emphasizes the critical role of educators in eliminating gender bias and advocates for continuous professional development and self-reflection to ensure gender-neutral teaching practices. It also calls for gender-sensitive reviews of educational materials to identify and eliminate gender biases. In addition, the cooperation between families and schools is crucial for breaking gender role stereotypes. Future research should focus on assessing the long-term effects of educational interventions and exploring effective policies for gender equality education.

Keywords: Gender Stereotypes; Primary and Secondary School Students.

1. Introduction

Stereotypes originate from the Greek words “stereo” and “typos,” which together mean a fixed model. They specifically refer to a rigid pattern of perception regarding the characteristics or behaviors of a particular group [1]. This concept is widely applied in social categorization, forming preset notions about group attributes based on criteria such as gender, race, age, or occupation. Stereotypes are pervasive in society, including those related to geography, race, age, occupation, appearance, and particularly gender stereotypes.

Gender stereotypes, also known as gender typing, refer to the fixed notions held by the general public regarding the characteristics of different genders. These stereotypes encompass abilities, behaviors, and personality traits, and are manifested in standardized perceptions and attitudes towards men and women [2]. Notably, Broverman et al. pointed out that men are often perceived as superior in abilities and rationality, while women are considered more emotionally expressive and amiable [3]. Specifically, men are believed to have a natural inclination towards mathematics and science, and are characterized by proactivity, logical thinking, self-confidence, rationality, and a competitive spirit. In contrast, women are regarded as literature enthusiasts, with traits such as tidiness, grace, empathy, and fluent language expression.

Gender stereotypes, as a pervasive social and cultural phenomenon, have a profound impact on individuals' cognitive frameworks and social behaviors. Particularly within the educational context, these gender-based preset notions are not only confined to traditional gender role divisions but are also deeply embedded in every aspect of the educational process, exerting an undeniable influence on the developmental trajectories of primary and secondary school students [4]. Given that this stage is a critical period for adolescents' gender identity development and cognitive formation, the potential role of gender stereotypes becomes increasingly significant. Their impact extends beyond students' attitudes towards learning and academic performance, potentially affecting their future career development and the establishment of social relationships [5].

In light of the above background, this literature review is dedicated to systematically sorting out and deeply analyzing the manifestations of gender stereotypes in the field of education and their mechanisms of influence on primary and secondary school students. It aims to provide educational policymakers, educators, and researchers with a comprehensive and profound perspective, and to collectively strive for the creation of a gender-bias-free, fair, and inclusive educational ecosystem that ensures the comprehensive development and potential fulfillment of every student.

2. The Impact of Gender Stereotypes on Students

The influence of gender stereotypes on primary and secondary school students is multidimensional. These stereotypes not only shape students' perceptions of their own abilities but also potentially affect their academic performance and career development trajectories. Research indicates that gender stereotypes can lead to a reduced sense of self-efficacy in specific subjects, especially when these subjects are perceived as being dominated by one gender [6]. For example, mathematics and science are often regarded as male-dominated fields, and this widespread perception may undermine female students' motivation and persistence in these areas. Li Yang et al.'s study pointed out that there are significant differences in the impact of explicit math stereotypes on boys and girls, with such differences affecting learning motivation and, subsequently, learning persistence [7]. Specifically, boys' explicit math stereotypes enhance their learning motivation and persistence, whereas girls' explicit math stereotypes have the opposite effect, reducing their motivation and persistence.

Moreover, gender stereotypes can also limit students' interest development and career choices, leading them to avoid exploring certain subjects or career fields out of fear of violating gender norms [8]. This phenomenon not only restricts the development of individual potential but also results in the waste of societal talent resources. The existence of gender stereotypes means that students may be influenced by internalized societal expectations when choosing their future paths, preventing them from freely pursuing their

interests and passions.

In terms of mental health and social adaptation, the impact of gender stereotypes is equally significant. Long-term exposure to gender stereotypes may lead to negative emotions such as anxiety and self-doubt among students, affecting their social interactions and teamwork skills [9]. Students might avoid challenges and competition out of fear of not meeting gender role expectations, and such avoidance behaviors can limit their ability to solve problems and cope with stress.

To mitigate the negative impact of gender stereotypes on students, educators and parents can take a series of measures. First, educational interventions can be implemented to raise students' awareness of gender stereotypes, encouraging them to transcend gender role expectations and explore their interests and potential [10]. Second, a gender-equitable learning environment should be created to ensure that all students have equal opportunities to participate in various subjects and activities. Finally, positive role models and examples of success across genders in different fields can be highlighted to inspire students to break gender boundaries and pursue their goals [11].

3. Gender Stereotypes in Educational Materials

The manifestation of gender stereotypes in educational materials is a complex social phenomenon. It not only reflects the traditional societal and cultural expectations of gender roles but also subtly influences students' gender identity and career development. First, gender stereotypes in educational materials are evident in the unequal representation of gender roles. As revealed by Sun Qingkuo et al., the frequency and status of male characters in junior high school mathematics textbooks are generally higher than those of females. This imbalance may lead students to form the stereotype that males are superior in the field of mathematics [12]. This phenomenon is also reflected in the study by Chen Baihua and Tao Huiqing, where the variety of male occupations and their socio-economic status in high school English textbook illustrations are higher than those of females, further reinforcing the stereotype of gender occupational segregation [13].

Second, gender stereotypes in textbooks are also reflected in language usage. Zhang Xun and Zhou Hongmin pointed out that in elementary school mathematics textbooks, there is a linguistic bias of using masculine pronouns to refer to both genders. This practice may inadvertently reinforce the universality of males and the marginalization of females [14]. Language is the carrier of thought, and such gender-biased language use may have a long-term impact on students' gender cognition and language expression.

4. The Impact of Teachers' Gender Stereotypes on Students

Gender stereotypes in the classroom have a profound impact on primary and secondary school students, which is reflected and transmitted through teachers' expectations, behaviors, and teaching strategies. If teachers hold gender stereotypes, such as believing that certain subjects or activities are more suitable for a specific gender, these notions may be unconsciously conveyed to students during the teaching process [15]. This transmission not only affects students' self-perception and career choices but also limits their exploration of knowledge and skills.

Specifically, teachers' gender stereotypes influence students' gender concepts through their educational behaviors. For example, teachers may tend to encourage boys to participate in mathematics and science activities, while encouraging girls to engage in language and art activities. This distinction reinforces gender roles and may lead students to form or deepen gender stereotypes, thereby affecting their academic achievement and future career development.

Moreover, when dealing with students' problematic behaviors, teachers may also be influenced by gender stereotypes. Research has found that teachers may adopt stricter measures for boys while being more lenient with girls, a difference that may be based on preset perceptions of boys' and girls' personality traits [16]. This approach is not only unfair to individual students but may also exacerbate gender inequality.

To promote gender equality and the comprehensive development of students, educators need to be aware of how their gender concepts may affect students and strive to provide a gender-bias-free educational environment. This includes reflecting on and adjusting teaching behaviors to avoid differential treatment based on gender, and enhancing awareness and respect for gender diversity through education and training.

5. Recommendations and Prospects

Gender stereotypes not only limit students' interests and potential but also affect their mental health and social adaptability. Therefore, educators, parents, and policymakers need to work together to take practical and feasible measures to address this challenge.

First and foremost, the transformation of educators' roles is essential. They should become active advocates for gender equality, ensuring that their teaching practices do not convey gender biases through continuous professional development and self-reflection. This includes using inclusive language, providing equal opportunities for classroom participation, and encouraging students to explore subjects traditionally considered the domain of the opposite sex. Educators must be aware of how their gender-related perceptions may influence students and strive to create a gender-bias-free educational environment.

Secondly, gender-sensitive review of curriculum content is crucial for achieving gender equality. Educational materials and curriculum design should undergo regular reviews to identify and eliminate gender stereotypes. This not only involves textual content but also includes images, case studies, and role models to ensure that they represent diversity and promote gender equality. Textbook authors, reviewers, and educational policymakers should enhance their gender awareness and actively identify and eliminate gender biases in teaching materials.

Moreover, the collaborative efforts between families and schools are equally important in breaking down gender stereotypes. Parents and educators should work together to provide children with opportunities to break gender roles through homework, extracurricular activities, and community participation. Parental education is also essential to ensure that the home environment supports children's comprehensive development without being limited by gender presets.

In terms of research, future studies should focus on the psychological mechanisms through which gender stereotypes influence students. Specifically, research should explore how these stereotypes are internalized as part of students' self-

concepts and subsequently affect their academic choices and career development. This requires an interdisciplinary approach, combining perspectives from psychology, education, and sociology. Additionally, evaluating the long-term effects of educational interventions aimed at reducing the impact of gender stereotypes is essential. This includes examining their sustained influence on students' academic achievement, career choices, and mental health. Moreover, investigating how to formulate and implement effective gender equality education policies, as well as how these policies can be effectively executed at the school level, is also an important direction for future research.

Through these recommendations and research directions, we can anticipate the creation of a more equitable and inclusive educational environment that enables all students to maximize their potential without being constrained by gender stereotypes. This not only benefits students' personal development but is also a crucial pathway to achieving social progress and gender equality.

References

[1] Zuo Bin, Zhang Yangyang, Zhao Ju, et al. The Content Model of Stereotypes: Theoretical Hypotheses and Research [J]. Advances in Psychological Science, 2006(01): 138-145.

[2] Liu Xun. The Structure and Development of Gender Stereotypes in Children and Adolescents [D]. Central China Normal University, 2007.

[3] Broverman,I.K..Vogel,S.R.Broverma, D.M.Clarkson, F.E., &Rosenkrantz, P.S..(1972).Sex-role stereotypes: a current appraisal, The Journal ofSocial Issues, 28(2),59-78.

[4] yuso N , Fillola E , Masia B ,et al.Gender Gap in STEM: A Cross-Sectional Study of Primary School Students' Self-Perception and Test Anxiety in Mathematics[J].IEEE Transactions on Education, 2021(1):64.

[5] Swift H J , Dominic A , Sibila M .Threat or boost? Social comparison affects older people's performance differently depending on task domain. [J].Journals of Gerontology, 2013 (1): 23-30.

[6] Spencer S J, Steele C M, Quinn D M. Stereotype threat and women's math performance[J]. Journal of Experimental Social Psychology, 1999, 35(1): 4-28.

[7] Li Yang, Huang Bijuan, Li Hongxia, Si Jiwei. Mathematics Learning Motivation and Persistence among Seventh-Grade Students: The Impact of Math-Gender Stereotypes [J]. Journal of Mathematics Education, 2022, 31(1): 35-41.

[8] Eccles J S, Wigfield A, Schiefele U. Motivation to succeed [M]// Damon W. Handbook of child psychology. 5th ed. New York, NY: Wiley, 1998: 186-230.

[9] Logel C, Walton G M, Spencer S J, et al. Stereotype threat and coping with threat to social identity: The role of group identity and group status[M]// Zanna M P, Olson J M. Advances in experimental social psychology. Vol. 45. San Diego, CA: Academic Press, 2012: 163-221.

[10] Walton G M, Cohen G L. A brief social-belonging intervention improves academic and health outcomes of minority students [J]. Science, 2011, 331(6023): 1447-1451.

[11] Dweck C S. Is math a gift? Beliefs that put females at risk[M]// Ceci C E, Williams W M. Why aren't more women in science? Top researchers debate the evidence. Washington, DC: American Psychological Association, 2007: 47-55.

[12] Sun Qingkuo, Xu Fan, Hu Qizhou. A Study on Gender Stereotypes in Junior High School Mathematics Textbooks [J]. Journal of Mathematics Education, 2017, 26(03): 53-56.

[13] Chen Baihua, Tao Huiqing. A Study on Gender Stereotypes in Illustrations of Senior High School English Textbooks: A Case of the People's Education Press Compulsory Courses [J]. Global Education Outlook, 2023, 52(03): 96-112.

[14] Zhang Xun, Zhou Hongmin. Analysis of Gender Stereotypes in Primary School Mathematics Textbooks [J]. Educational Research Monthly, 2008(07): 23-25.

[15] Li Chaoqun, Xu Liangyuan, Li Yanfang. The Impact of Teachers' Gender Stereotypes on Gender Stereotypes among Primary and Secondary School Students: The Mediating Role of Teachers' Gender-Education Behaviors [J]. Chinese Special Education, 2021(04): 90-96.

[16] Wang Qianyi, Xie Ailei. The Impact of Gender Stereotypes on Primary School Teachers' Attention to and Intervention in Classroom Problem Behaviors [J]. Educational Research Monthly, 2023(12): 75-82.