

Impact of Teachers' Gender Equity Awareness on Middle School Students' Academic Performance

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Abstract:

The high school years are a critical period for students to build up their awareness of gender equity and refine their gender perspectives. During this period, teachers, as guides on the path of students' development, often have an impact on their students in terms of their awareness of gender equity, which in turn affects their academic performance. Based on the analysis of questionnaires from 150 senior high school students from the first to the third year of high school in Nanjing, Jiangsu Province, the impact of teachers' awareness of gender equity on senior high school student's academic performance and the specific mechanisms are explored. The analysis of the data shows that in the process of the change of student's academic performance, some teachers' sense of gender fairness will express some gender stereotypes in the classroom and teaching through some verbal and behavioral cues, such as boys are smart but lack effort, and girls are self-disciplined but lack adaptability. In turn, these teacher realizations are reflected in student achievement through students' perceptions of teacher support with their sense of self-efficacy.

Keywords: Gender equity awareness; high school students; gender; equity; teacher

1. Introduction

Teachers play a very important role in students' academic life and their assessment has a significant impact on students. The impact of stereotypes, especially gender stereotypes of teachers, on students cannot be ignored. Yao et al. pointed out that teachers' praise can improve students' performance in all subjects by raising their expectations, among other things, while teachers' negative evaluations can reduce students' self-discipline and thus their academic performance

[1].

Gender issues have received increased attention in recent years. Students in secondary school are at a sensitive stage both psychologically and physically, and stereotypes from the outside world and unfair gender awareness can easily affect their mental development. At this stage, changes at all levels can easily be projected onto the ups and downs of academic performance.

As important mentors in the development of sec-

ondary school students, whether teachers have a sense of gender equity has also been widely discussed. In students' learning lives, teachers' verbal cues and assessments are closely related to students' motivation and self-confidence in learning, and both can lead to changes in student academic performance. Therefore, teachers' sense of gender equity is highly likely to have a significant impact on student achievement.

This study examines the impact of teachers' gender equity awareness on students' academic performance and also examines the relationship between this study and existing research. In a study by Kalender Z. Yasemin et al., it was found that many female researchers experience bias in fields such as physics or math [2]. Beibei Chang also pointed out in her study that gender stereotype identification has a partial effect on students' learning of mathematics [3]. All of these studies are consistent with his study that gender equity awareness affects students' academic performance.

Foreign scholars have conducted research in this area earlier. For example, Heyder Anke et al. found that the reason why many boys have deficiencies in language achievement is that their parents' and teachers' perceptions of their language learning ability lead to negative motivational beliefs [4]. In China, although research on this issue is relatively recent, it is still in progress. In his study, Wang Mao-yang pointed out that gender stereotypes in math can have a serious impact on student's performance in math, and that the impact is particularly significant for girls, but less so for boys [5].

To clarify the importance of strengthening gender awareness among teachers, the study focused on the impact of teachers' gender equity awareness on students' academic performance, using questionnaires to examine the relationship between the two. This will better promote students' confidence and self-concept in learning and help improve academic performance for better growth.

2. Methodology

2.1 Research Design

This study took a questionnaire approach to investigate the academic performance of high school students and their teachers' awareness of gender equity.

The questionnaire was adapted from the self-report questionnaire of Schmader et al. The questionnaire consisted of three items and a 7-point scale was used to measure the subjects' agreement with each item (1=strongly disagree, 7=strongly agree). Items 1 and 2 are positively scored questions item 3 is negatively scored, and the final score is the average of the three items. The validity of this scale

is good among high school students with Cronbach's A of 0.88.

In this study, an online questionnaire was administered to 150 high school students from their freshman to junior year of high school in Nanjing, Jiangsu Province, China, using whole cluster sampling with the above scale.

In this study, the subjects were 150 high school students from general high schools in Nanjing, Jiangsu Province. Thirty students from each grade level and seventy-five students from each gender were expected.

2.2 Research Process

To study the impact of teachers' gender equity awareness on high school students' academic performance, this study used a questionnaire to survey high school students from Nanjing, Jiangsu Province. A self-perception questionnaire was used based on two factors: academic performance and gender equity awareness [6].

Sixty questionnaires were distributed in the pre-survey, a general high school in Nanjing, Jiangsu Province was selected and the questionnaires were distributed to high school students in three different grades in the school.

The problems identified in the pre-survey were corrected in the formal survey, and then a general high school in Nanjing, Jiangsu Province was selected and the questionnaires were distributed to 150 students from the first to the third year of high school in the school.

Use SPSS data analysis and select one of the regression analysis functions to analyze the data. A reliability test was conducted for the scale data. This study will use correlation analysis to verify whether there is a significant correlation between teachers' sense of gender equity and high school student's academic performance and calculate the correlation coefficient between these two variables. Meanwhile, this study will use regression analysis to determine the relationship between teachers' sense of gender equity and students' academic performance, establish a regression model, and estimate the model parameters based on the actual measurement data to verify whether the sense of gender equity has a significant impact on high school student's academic performance.

3. Findings

3.1 Correlation Analysis

To further determine the correlation between the two, a correlation analysis is conducted in this section. Table 1 shows that the correlation coefficient between gender equity awareness and academic performance was 0.560 with a p-value of less than 0.05, indicating a significant

positive correlation between the two and that good gender equity awareness is associated with good academic performance.

Table 1. Correlation analysis.

		Gender equity awareness	Academic performance
Gender equity awareness	Pearson correlation	1	0.560**
	Sig. (two-tailed)		0.000
Academic performance	Pearson correlation	0.560**	1
	Sig. (two-tailed)	0.000	

** . Correlation is significant at the 0.01 level (two-tailed).

3.2 Regression Analysis

To further explore the relationship between the variables, regression analysis is conducted in this section. As shown

in Table 2, the result of the F-test showed that $F=67.103$ with a p-value of 0.000 less than 0.05 indicating that the model is significant.

Table 2. Model Analysis of Variance.

Model		Sum of squares	Degrees of Freedom	Mean square	F	Significance
1	regression	4.286	1	4.286	67.103	0.000 ^b
	Residuals	9.388	147	0.064		
	Total	13.674	148			

a. Dependent variable: Academic performance
b. Predictor variables: (constant), gender quality awareness

As shown in Table 3, the test for multicollinearity of the model found that the value of VIF in the model is less than 5, implying that there is no problem of covariance. Therefore, the model is:
 $Academic\ performance = 0.367 + 0.695 \times Gender\ equity$

consciousness
Where the coefficient of gender equity awareness is 0.695, which is positive and the test value of t is 8.192, which is less than 0.05, indicating that gender equity awareness can positively predict academic achievement.

Table 3. Model coefficients.

model	B	Unstandardized coefficient		Standardized coefficient	t	significance	tolerance	VIF
		standard error	Beta					
1	(Constant)	0.367	0.111		3.309	0.001		
	Gender equality awareness	0.695	0.085	0.560	8.192	0.000	1.000	1.000

a. Dependent variable: academic performance

4. Discussion

4.1 Importance of Teachers' Gender Equity Awareness

Through this study, it has been found that when teachers

have a stronger sense of gender equity, the more support and encouragement the students feel from their teachers. Their sense of gender equity plays an important role in improving and maintaining students' academic performance. In the study of Chunmei Ji and Hui Zhao, they pointed out that teacher support, academic self-efficacy,

and academic achievement were significantly and positively correlated, and teacher support was significantly and positively correlated with academic self-efficacy [7]. Teachers play a very important role in student learning. Their sense of gender equity provides teacher support to students and directly affects their academic performance. Jiajia Zhang et al. also pointed out that students' perceived teacher support gradually increased the facilitating effect on students' self-efficacy as the grade level increased, and that self-efficacy played a partially mediating role between teacher support and academic performance [8]. Teachers' awareness of gender equity indicates that students at the upper secondary level are more sensitive to teacher support. Therefore, the impact of teachers' awareness of gender equity on students' academic performance is significant, and this shows its importance in the process of students' development.

4.2 Problems with Teachers' Awareness of Gender Equity

In the study, it was found that many students perceived equality and importance in their teachers' sense of gender equity, which had a positive impact on their academic performance. At the same time, however, some students perceived themselves to be neglected by the teachers' unfair gender awareness, which also negatively affected their academic performance.

And the study found that most of them were female students. Some teachers believed that men would be better at science achievement than women and that girls needed to expend more effort than boys to do well. They did not receive enough interest and support in their teachers' sense of gender equity and thus lost some of their self-confidence and self-efficacy, which led to a decrease in their motivation. Some of the boys also indicated in the questionnaire that their teachers considered them to be more mischievous and disorderly, and that they were not considered to be sensitive enough and therefore not as good as girls in the study of the liberal arts.

All of these findings reflect the fact that some teachers still do not recognize that their sense of gender equity is not fair enough and that it can have a not-so-subtle impact on their students' motivation to learn.

4.3 Suggestion

This study shows that teachers' awareness of gender equality is significantly positively correlated with high school students' performance in academic achievement. In a study by Qianyi Wang et al., they noted that gender stereotypes influence teachers' attention to and intervention in student behavior [9].

This study found that teachers' awareness of gender equality had a more positive impact on men's academic achievement. Female students receive less support, and teachers' awareness of gender equality often hurts their academic performance. Therefore, teachers must change their traditional gender perceptions and take a series of measures to compensate for the negative impact of gender bias. Communication is a very important part of a teacher's relationship with his or her students. Therefore, teachers should respect and understand their students by increasing communication with them about their needs and suggestions. Reduce gender stereotypes for both boys and girls, give students of different genders the same opportunities and trust, and encourage students to experiment with areas in which they do not specialize. Teachers are expected to keep abreast of the adequacy of students' perceptions of support from teachers. Intervene promptly when students perceive an equity imbalance from their gender.

5. Conclusion

This study chose as its research topic the effect of teachers' gender equity awareness on high school students' academic performance. This is because as students get older, they become more sensitive to the perception of gender differences and gender stereotypes, and teachers, as guides in students' academic lives, their awareness of gender equity is very important to students. This study utilized the questionnaire method to investigate the changes in teachers' gender equity awareness and students' academic performance. The questions of the questionnaire were adapted from existing scales, and the recovered data were analyzed from three perspectives: reliability and validity, correlation analysis, and regression analysis. The study concluded that there is a significant positive correlation between teachers' sense of gender equity and students' academic performance, which indicates that gender equity is conducive to the improvement and retention of students' academic performance. Therefore, for students to learn better, teachers should use a fairer and more positive gender awareness to eliminate gender stereotypes and prejudices, promote students' academic performance, and enhance their self-efficacy. The psychological and physiological development of students in high school is rapid, and students are more sensitive to the perception of external things. Teachers' support plays an important role for students, so it is all the more important for them to reflect on whether they have an unfair sense of gender and correct it.

Compared to previous studies, which mostly focused on the impact of gender stereotypes on female performance

in science, the present study makes a study on the impact of gender equity awareness on the overall performance of students of different genders to get a more comprehensive understanding of the relationship between the two. Through this study, teachers are inspired to adopt a more equitable, scientific, and ethical gender awareness to promote student achievement and retention. In further research, the researcher can expand the study population to include students of different ages from elementary school to university to explore the impact of teachers' awareness of gender equity on students at different stages.

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