

THE RELATIONSHIP BETWEEN TEACHER-STUDENT RELATIONSHIP, SELF-CONFIDENCE, AND ACADEMIC ACHIEVEMENT IN THE CHINESE CONTEXT

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Abstract

This study examined the relationship between teacher-student relationship, self-confidence in learning, and academic achievement of high school students in China. In this study, 14,021 11th graders in China took part in the National Standardized Tests in three subject areas: Chinese language, mathematics, and English language. Teacher-student relationship and self-confidence in learning were measured with the questionnaires adapted from PISA2012, the psychometric properties of which have been examined in large-scale assessments. Results showed that teacher-student relationship in each subject area, self-confidence in learning, and their corresponding academic achievement were all statistically significantly related to each other. Structural equation models were used to verify the mediating effect of self-confidence in learning between teacher-student relationship and students' academic achievement in each subject area. Results indicated that self-confidence in learning mediated the significant associations between teacher-student relationship and students' academic achievement. This mediating effect was the largest in the subject area of Chinese language, which was 8.1% greater than that in the subject area of English language, and 3.9% greater than that in the subject area of mathematics. This study suggests that good teacher-student relationship is conducive to enhancing students' self-confidence in learning, which had positive relationships to academic achievement.

Keywords: *Teacher-student relation, self-confidence in learning, academic achievement, Chinese high school.*

1. Introduction

There has been a rapid growth in research on the importance of teacher-student relationship for students' school success during recent years (Fan, 2012). Teacher-student relationship is an important, although complicated, interpersonal relationship in education (Hughes, 2012). The interactions between teachers and students exert a profound impact on students' physical and mental development (Liao, 2001). Empirical studies suggested that teacher-student relationship was significantly related to students' academic achievement (Fan, 2012; Pianta, & Stuhlman, 2004), school adjustment (Hughes, 2012), problem behaviors (Graziano, Reavis, Keane, & Calkins, 2007), dropout rate (Barile, Donohue, Anthony, Baker, Weaver, & Henrich, 2012), and personality traits (Li, Zou, Wang, & Dou, 2008) in the process of learning.

Teacher-student relationship refers to “the basic interpersonal relationship between teachers and students in schools, which is also one of the important social relationships in the process of children's socialization through the whole educational development” (Zou, Qu, & Ye, 2007, p.77). During the process of teacher-student interaction, teachers' responses, either emotional, verbal, or behavioral, towards students' behaviors affect students' experience and play an important role in the development of students' psychological traits, such as self-concept, self-confidence, motivation and self-esteem (e.g., Maulana, Opdenakker, den Brok, & Bosker, 2011). Maulana et al. (2011) posited that the equality, respect, mutual understanding and trust in teacher-student relationship is conducive to stimulating students' motivation for independent learning (Maulana, Opdenakker, den Brok, & Bosker, 2011), improving students' confidence in learning (Wang, 2015), and reduce learning anxiety (He, & Qi, 2018). On the contrary, a poor teacher-student relationship may make students feel lonely, withdraw from courses (Baker, Grant, & Morlock, 2008), and prone to aggressive behaviors (Meehan, Hughes, & Cavell, 2003), which may negatively impact students' academic achievements, and lead to dropouts and

psychological disorders (Birch, 1997). Maslow (1943) defined self-confidence as a kind of positive emotional experience generated by certain satisfaction of “self-esteem needs”. Xiu (2009) proposed that self-confidence in learning referred to students’ positive reaction towards their completion of learning tasks and achievement of learning goals. Some scholars believe that self-confidence in learning is basic qualities closely related to educational development and have a significant impact on learning outcomes (e.g., Al-Hebaish, 2012; Chang, & Cheng, 2008; Tavani, & Losh, 2003).

Despite lots of studies on teacher-student relationship and students' learning outcomes, most of them focused on the impact of teacher-student relationship on students' academic achievement (e.g. Fowler, Banks, Anhalt, Der, & Kalis, 2008; He, & Qi, 2018; Zeng, Zhao, Luo, & Xin, 2012) or the association between students’ self-confidence in learning and their academic achievement (e.g. Kukulu, Korukcu, Ozdemir, Bezci, & Calik, 2013; Zhu, 2014). Very few had examined the mediating effect of self-confidence in learning for the associations between teacher-student relationship and students’ academic achievement. In addition, most previous studies treated teachers in various disciplines as a single group and used grade-point average (GPA) as an indicator for students’ academic performance with no refinement to a specific subject area (Corbin, Alamos, Lowenstein, Downer, & Brown, 2019; Li, Zou, Wang, & Dou, 2008). This study attempts to fill the gap by examining (a) the associations between students’ perceptions of teacher-student relationship, self-confidence in learning and academic achievement in three subject areas: Chinese language, mathematics, and English language; and (b) how does self-confidence in learning impact the association between teacher-student relationship and students’ academic achievement in each subject area.

2. Methods

2.1. Participants

A total of 14,021 11th graders participated in the current study from an eastern province in Mainland China. A stratified cluster random sampling was employed, through which, 100 schools from the 17 cities in the province were randomly selected to represent the student population in the province. Of the participants, 6794 (46.3%) were boys and 7527 (53.7%) were girls.

2.2. Instruments

The Teacher-Student Relationship Scale (TSRS) was developed by the Program for International Student Assessment (PISA) in 2012 (OECD, 2013). The internal consistency of responses to this scale measured by Cronbach’s alpha was .96, .98, and .97 for Chinese language, mathematics and English language, respectively. The Self-Confidence in Learning scale was also adopted from PISA (2012) (OECD, 2013), which aimed to measure students’ self-confidence in learning with three items. The Cronbach’s alpha of responses to this scale was .54. Students’ academic achievement was assessed by means of national standardized achievement tests which were deployed by the Collaborative Innovation Center of Assessment towards Basic Education Quality (CICA-BEQ) at Beijing Normal University. It was mandated and directed by the Chinese Ministry of Education. The norm for academic achievements in each subject was a mean of 84.28 and a standard deviation of 12.73 in Chinese language, a mean of 84.26 and a standard deviation of 12.73 in Mathematics, and a mean of 83.77 and a standard deviation of 10.23 in English language.

2.3. Data collection and data analytic procedures

Preliminary analyses included the testing of reliability and validity of responses to the instruments. Pearson correlation coefficients were used to represent the associations among the self-confidence in learning, teacher-student relationship, and academic achievement. Stepwise linear regression models and structural equation models were applied to examine the mediating effect of self-confidence in learning in the relationship between teacher-student relationship and academic achievement in each subject area.

Text

3. Results

Students’ perceptions of teacher-student relationship were consistent across all three subject areas, which were reflected by the statistically significant and positive correlations between the relationship reported in Chinese language and that in mathematics ($r = .57, p < .001$); between the relationship reported in Chinese language and that in English language ($r = .58, p < .001$), and between the relationship reported in mathematics and that in English language ($r = .68, p < .001$). Teacher-student

relationship was statistically significantly related to the self-confidence in learning and academic performance in the tests in each subject area. Specifically, $r = .40$ and $r = .11$ in the Chinese language discipline; $r = .49$ and $r = .14$ in the mathematics discipline; and $r = .50$ and $r = .16$ in the English language discipline. Self-confidence in learning was also statistically significantly related to academic performance in the tests in each subject area and students' academic performance in each subject area was also statistically significantly related to each other.

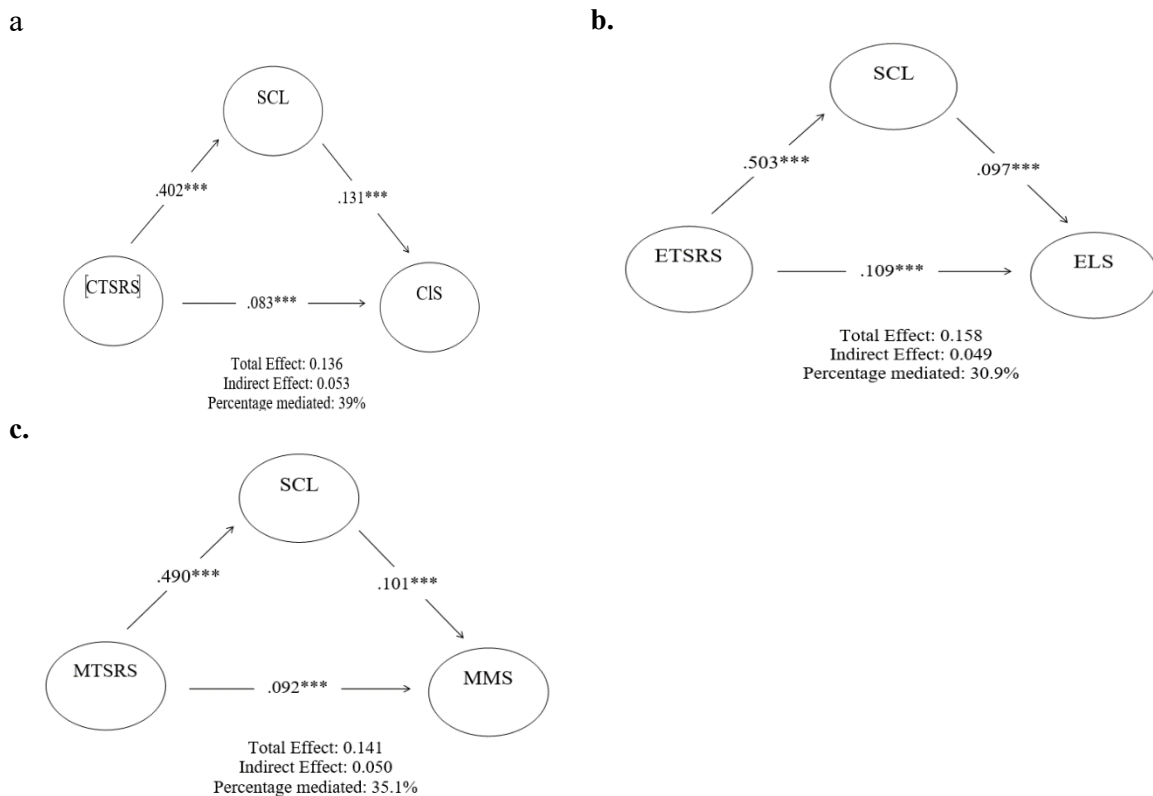
Results of stepwise linear regression models to test the mediating effect of self-confidence in learning for the associations between teacher-student relationship and academic achievement in each subject area were presented in Table 1 and the structural equation models were illustrated in Figure 1. Self-confidence in learning mediated 39% of the relationship between teacher-student relationship and academic achievement in the Chinese language test score (Figure 1a), which was 3.9% greater than in the mathematics test score (figure 1c). Furthermore, 30.9% of mediating effect existed in the relationship between teacher-student relationship and their academic achievement in the English language test score (figure 1b), which was the lowest among the three subject areas.

Table 1. Self-Confidence in Learning as Moderator of the Association between Teacher-Student Relationship and Academic Achievement.

	Chinese Language			Mathematics			English Language	
	Step 1 β (SE)	Step 2 β (SE)		Step 1 β (SE)	Step 2 β (SE)		Step 1 β (SE)	Step 2 β (SE)
CTSRS	.14(.02)*	.08(.02)*	MTSRS	.14(.03)*	.09(.03)*	ETSRS	.16(.02)*	.11(.03)*
SCL		.13(.05)*	SCL		.10(.04)*	SCL		.10(.03)*
R^2	.018	.033	R^2	.02	.028	R^2	.025	.032
ΔR^2		.014*	ΔR^2		.008*	ΔR^2		.007*

Note. * $p < .001$.

Figure 1. Mediating effect of self-confidence in learning.



4. Conclusions and discussions

The purpose of this study was to explore the associations between teacher-student relationship, self-confidence in learning, and students' academic achievements in Chinese high schools. Results showed that the teacher-student relationship was significantly related to students' academic achievements. Good communication between teachers and students may help students pay more attention during the class, receive more teacher support as well as more positive feedback in learning, and achieve better academic performance. The results of the present study support findings of previous studies (e.g., He & Qi, 2018; Wang et al., 2015) and confirmed the positive role of teacher-student relationship in the school setting. Moreover, self-confidence in learning plays a mediating role in the association between teacher-student relationship and students' corresponding academic achievements in Chinese language, mathematics, and English language disciplines, respectively. The strong positive associations between teacher-student relationship and self-confidence in learning suggest that the relationship between teachers and students is associated with the students' self-confidence in learning. Furthermore, this study also showed positive relationship between self-confidence in learning and academic achievement. Students who are confident in their learning ability are more likely to adopt a positive attitude to overcome the difficulties in learning, and thus tend to achieve higher academic achievement (Al-Hebaish, 2012).

Teacher-student relationship is one of the most important factors that directly affects the quality of education, the healthy development of students' personal traits and their academic performance. In the process of education, teachers are recommended to create harmonious and positive teacher-student relationship and learning environment. Academic achievement is part of the quality of education, but increasing study time is not the only way to improve academic achievement (Wang, 2015). On the contrary, educators should explore efficient methods for students to improve their academic achievements. Examples of these methods include (a) integration of students' physical and mental health; (b) enhancement of learning quality, such as the motivation to learn (Maulana, Opdenakker, den Brok, & Bosker, 2011), interest in the subject areas (Chang, & Cheng, 2008), and self-confidence in learning. To stimulate one's potential to learn, to help students find topics of their interest, and to help students improve their academic performance in a healthy learning environment should be goal of education.

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