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Teacher beliefs, teacher expectations and student achievement: What are the relations?

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Biographies
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ABSTRACT
Teacher expectations refer to the levels teachers expect their students to achieve in future examinations, which are normally formed based on information that they knew about their students. Previous literature has shown that the formation of teacher expectations is influenced by student factors, for example, student gender, ethnicity, and achievement. However, whether teacher-related factors contribute to the variance in class-level teacher expectations needs to be further examined. Additionally, the issue of relations among teacher beliefs, teacher expectations, and student future achievement is crucial in understanding the effect size of teacher expectations. However, currently empirical evidence related to this topic is rather limited, especially in non-western countries such as China.

Aims: The purpose of this study was to explore (a) the existence of teacher groups with high-, medium-, and low-expectations for all students in the Chinese context (b) how teacher-related factors including teacher background and beliefs contribute to the variance in those expectations, and (c) the relations among teacher beliefs, teacher expectations, and their students' subsequent achievement.

Methods: This cross-sectional study collected data from a sample of 2190 Y7 to Y9 students taught by 113 Chinese, Mathematics, and English teachers in seven non-urban junior high schools in L city, China. About one month after the 2019 Autumn Term started, each teacher participant was asked to complete a teacher expectation survey and a teacher beliefs questionnaire, which was comprised of their background information (e.g. gender, ethnicity, years of teaching) and three beliefs subscales (e.g., Work Engagement, Self-Efficacy, Commitment and Intention to Quit). Students' prior and subsequent end-of-term achievement in Chinese, mathematics, and English were also collected. Linear Regression models, multivariate general linear models, and structural equation models were employed to analyse the data.

Results:
1. The medium-expectation teacher group had the largest number of teacher participants (n = 47) and the low- and high-expectation teacher groups had roughly similar numbers of teachers (n = 32 for lows, and $n = 34$ for highs)
2. The LSD post-hoc test showed that whether a teacher was a homeroom teacher made a statistically significant difference in class-level teacher expectations, $p < .01$ for Highs and Lows, and $p < .05$ for Lows and Mediums.

3. There were statistically significant differences among level of expectation for the class and aspects of work engagement: teacher vigour ($F_{(2,112)} = 4.74$, $p < .05$, $\eta^2 = .08$), and dedication ($F_{(2,112)} = 3.29$, $p < .05$, $\eta^2 = .06$), although the effect sizes were small.

4. The SEM models suggested that class-level teacher expectations (CTEs) were a moderate predictor of student achievement ($\gamma = .30$) and partially mediated the relations between teacher work engagement (vigour) and student achievement. Teacher beliefs measured in this study contributed to 13% of the variance in CTEs. For the discrepancies in end-of-term student achievement, 9% could be explained by CTEs whereas only 3% could be explained by teacher beliefs, suggesting that CTEs explained more variance in student achievement than teacher beliefs.

Conclusion: This study provided new understanding about variance in teacher background and beliefs across the three teacher groups, and relations among teacher beliefs, CTEs and student achievement. More specifically, a homeroom teacher was less likely to be a low-expectation teacher. Teachers with high levels of expectations for their classes were more likely to be more energetic about, dedicate themselves to the teaching profession, and get students involved in their learning than their counterparts with low expectations.