



Review

Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis

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ABSTRACT

Considerable research has been conducted based on the assumption that teachers' psychological characteristics are associated with teaching effectiveness. However, the evidence for this assumption is limited: most research on the topic has been limited to investigations of the links between teachers' self-reported characteristics and other within-teacher, self-reported outcomes. The purpose of this study was to systematically analyze the research exploring two psychological characteristics (self-efficacy and personality) and measures of teaching effectiveness (evaluated teaching performance and student achievement). Analysis of 43 studies representing 9216 participants reveals a significant but small effect size of $\bar{r} = .10$ between overall psychological characteristics and teaching effectiveness. The strongest effect found was for self-efficacy on evaluated teaching performance ($\bar{r} = .28$). Implications for practice and future research are discussed.

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1. Introduction

Convincing evidence reveals that in any education system, teacher effectiveness is a critical factor driving variation in student achievement, and is more influential than class size, classroom composition, SES, or previous student achievement (e.g., Darling-Hammond & Youngs, 2002; Hindman & Stronge, 2009; Staiger & Rockoff, 2010). We define teacher effectiveness as the aggregated effects of a complex set of in-classroom teacher behaviours on student learning (Seidel & Shavelson, 2007), typically operationalized as measured student achievement or evaluations of observed teaching performance. Teacher effects on student learning are additive and cumulative over grade levels, with the result that a sequence of ineffective teachers is difficult for a student to overcome, even with exposure to subsequent effective teachers (Wright, Horn, & Sanders, 1997). Understanding the factors contributing to teacher effectiveness is a global research and policy priority with the potential to influence teacher selection processes, enhance training and professional development of pre-service and practicing teachers, and improve educational outcomes.

Attempts to build an understanding of teacher characteristics that lead to teaching effectiveness have produced equivocal results. Teacher characteristics such as educational background (college preparation programs), content of undergraduate and graduate degree programs, and teacher credentialing test scores may be related to teaching outcomes, but the relationships may only apply for teachers in specific content areas (Wayne & Youngs, 2003). Possessing a graduate degree is not related to teaching effectiveness as measured by student outcomes (Hanushek & Rivkin, 2006). Teachers' collegiate GPA was a stronger predictor of teaching evaluation scores (Fisher's $z = .25$, with the effect size z approximating r at lower values) than were teaching credential test scores (Fisher's $z = .17$), or scores from basic skills tests (Fisher's $z = .09$; D'Agostino and Powers, 2009). Teachers' verbal ability—posited as an important predictor of teaching effectiveness—shows only a weak relationship with teaching outcomes (median $r = .03$; Aloe & Becker, 2009). Compiling a wide variety of non-classroom teacher factors (gender, race, teaching experience, university attended, advanced degrees, certification, current tenure) explains less than 8% of teaching effectiveness (Aaronson, Barrow, & Sander, 2007). Clearly, additional information is needed to explain why some teachers are more effective than others.

1.1. Teachers' psychological characteristics and their links to teacher effectiveness

Teachers' psychological characteristics have long been hypothesized to contribute to teaching effectiveness (e.g., Barr, 1952). Two overarching psychological frameworks—personality and motivation—have been linked with job performance inside and outside of education domains. Personality is considered to be an enduring, relatively stable trait or set of traits, with a possible neuropsychological basis (e.g., Judge, Klinger, Simon, & Yang, 2008). Barr's (1952) review of teacher characteristics and teaching quality noted a general consensus that teachers' personality was connected with teaching success, but found little evidence of a predictive relationship between teachers' attitudes, personality traits, and teaching success. Although the investigation of personality as a predictor of job performance waned in the mid 20th-century, the establishment of new personality frameworks such as the Big Five (e.g., McCrae & Costa, 1987) and Myers-Briggs Type Inventory (e.g., Rojewski & Holder, 1990) has seen a resurgence of research investigating personality and job performance (Murphy & Dziewieczynski, 2005). Research centering on the role of personality traits in business settings shows promise (e.g., Judge et al., 2008); however, in education, the evidence for links between personality traits and teaching has been modest, with research hampered by weak conceptual frameworks linking personality traits and teaching effectiveness.

Stronger links have been provided for the relationship of motivation and teaching effectiveness. Motivation is usually defined as a set of beliefs that influence people's *movement* towards attainment of valued goals (Pintrich & Schunk, 2002), and is inferred through choice, effort, and persistence behaviours. Examples of motivation frameworks applied to teaching include self-efficacy (e.g., Tschannen-Moran & Woolfolk Hoy, 2001), engagement (Klassen, Yerdelen, & Durksen, 2013), and achievement goals (Retelsdorf & Günther, 2011). Researchers have recommended investigation of the links between motivation beliefs and job performance. Borman et al. (2003) recommended that motivation variables rather than personality variables be used for personnel selection research. Barrick, Mount, and Judge (2007) conducted a large-scale meta-analysis on the links between personality and job performance, and concluded that future research should be directed at building an understanding of how motivation variables act as predictors of job performance.

A growing body of research has shown links between teachers' motivation beliefs and measured teaching effectiveness (e.g., Bakker & Bal, 2010), student motivation (Guay, Ratelle, & Chanal, 2008), and student achievement (Caprara, Barbaranelli, Steca, & Malone, 2006). Rimm-Kaufman and Hamre (2010) recommended investigating how teachers' motivation predicts day-to-day engagement and teaching quality. Rockoff, Jacob, Kane, and Staiger (2008), echoing the findings of

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