Teacher behavior as a mediator of the relationship between teacher judgment and students' motivation and emotion

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HIGHLIGHTS

- Teachers may under- or overestimate students' test performance.
- Students underestimated in test performance differ from overestimated students.
- Underestimated students show lower motivation and emotion.
- Underestimated students perceive less teacher accessibility.
- Teacher accessibility is the link of teacher judgment and student motivation.

ARTICLE INFO

ABSTRACT

The study examines whether teacher behavior is a mediator of the relationship between teacher judgment and students' motivation and emotion. Two hundred forty-six sixth grade students completed a standardized English test and answered a questionnaire on motivation, emotion, and perception of differential teacher behavior. Thirteen English teachers assessed students' test performance. Students underestimated in test performance showed lower motivation and emotion than students overestimated in test performance. The two student groups perceived differential teacher behavior. Teacher behavior mediated the relationship between performance judgments and students' motivation and emotion. A rethinking of teacher's behavior towards students might counter these undesirable tendencies.

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1. Introduction

Teacher judgments of student achievement have enormous significance because they convey a message to students about their assessed abilities (Alvidrez & Weinstein, 1999). Research on teacher judgments makes use of the paradigm that teachers are asked to indicate their expectations about student performance on a standardized achievement test. In a correlative comparison, it is then determined how well these expectations correspond to actual student performance (Hoge & Coladarci, 1989).

From research on teacher expectations, it is known that erroneous teacher expectations may lead students to develop consistently with these expectations (Rosenthal, 1991; Rosenthal & Rubin, 1978). The effect of self-fulfilling prophecy became prominent by the experimental study of Rosenthal and Jacobson (1968). The self-

fulfilling effect of teacher expectations was found in cases of intelligence and achievement as well as for student motivation (Jussim, 1989; Jussim & Harber, 2005). Students perceived as high performers showed greater improvement in their self-concept of ability during the school year than students perceived as low performers (Jussim, 1989). Studies on teacher judgments, in turn, revealed very similar results. Students whose achievement was overestimated showed a higher self-concept of ability than students whose achievement was underestimated even though both student groups performed on the same level (Urhahne et al., 2010; Urhahne, Chao, Florineth, Luttenberger, & Paechter, 2011). It might be speculated that some processes found in teacher expectancy studies can be transferred to the area of teacher judgment.

The present study relies on a model of self-fulfilling prophecy, originating from research on teacher expectancies, which will be applied to teacher judgments. At the heart is the question of how teacher judgments can affect students' motivation and emotion. Various theories about self-fulfilling prophecies (Brophy, 1983;

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Cooper, 1979; Darley & Fazio, 1980; Jussim, 1986; West & Anderson, 1976) assume that teacher behavior is the crucial mechanism for the transmission. Students are able to derive teacher expectations from teachers' differential behavior (Babad, 1993, 2009). They may initially respond to teachers' differential behavior by changes in motivation and emotion before intelligence or achievement may be affected (Brophy, 1983). Consequently, it should be determined whether teacher behavior works as a mediator in the relationship between teacher judgment and students' motivation and emotion. It would be the missing link in a chain of classroom interactions that helps to understand why teachers' judgments of students' achievement are reflected in students' motivational-affective outcomes.

Teacher expectations and teacher judgments are conceptions with some differences but also some commonalities. Traditionally, teacher expectations are regarded as inferences that teachers make about students' future academic achievement (Brophy, 1998). In contrast, teacher judgments are defined as estimates of students' current academic achievement (Hoge & Coladarci, 1989; Südkamp, Kaiser, & Möller, 2012). However, teacher expectations are often measured in the same way as teacher judgments. Teachers are asked to evaluate each student in their class on different dimensions (e.g., Jussim, 1989). Through this practice, the borderline between teacher expectations and teacher judgments has become vague and may justify the use of models of self-fulfilling prophecy to explain effects of teacher judgments.

1.1. Theoretical models of teacher expectations

Conceptual models of teacher expectations aim to explain the development of students according to teachers' false beliefs through a sequence of different, causally linked steps. Jussim (1986; Jussim, Smith, Madon, & Palumbo, 1998) differentiated between three processes that all models of self-fulfilling prophecies have in common (Brophy, 1983; Cooper, 1979; Darley & Fazio, 1980; Jussim, 1986; West & Anderson, 1976). In a first step, teachers develop different expectations. In a second step, teachers treat high-expectancy students differently than low-expectancy students. In a third step, students react in a way to the treatment that finally confirms teacher expectations. A self-fulfilling prophecy occurred when all model steps are present.

Brophy (1983; Brophy & Good, 1974) differentiated more strongly the processes of interaction between teachers and students by proposing a six-step model. The model assumes the development of a self-fulfilling prophecy through the following steps: (1) Teachers form different expectations about student performance. (2) Teachers behave differently towards the students in accordance with their expectations. (3) Teachers' differential behavior provides students with the information of how to behave in class and to do what is expected. (4) Consistently shown teacher behavior is likely to influence student self-concept, achievement motivation, and level of aspiration as well as interactions with the teacher. (5) These changes in student behavior confirm and reinforce teacher expectations. (6) Ultimately, student achievement and other outcomes are affected in terms of a self-fulfilling prophecy.

The model of Brophy (1983) helps to explain how teacher judgment may transform students' motivation and emotion. It supposes that teachers have different expectations about different kinds of students: some students' achievement might be underestimated, while others might be overestimated. These judgments are reflected in teachers' differential behavior by providing disparate emotional and learning support (Babad, 2009; Rosenthal, 1973). Students are able to decipher teachers' differential behavior and react to it by changing their motivation and emotions.

Differential teacher behavior may change classroom enjoyment and can impact students' learning goal orientation. Students who feel more encouraged and appreciated by the teacher should be more willing to improve their competence, master difficult tasks, and work hard to learn. If one particular group of students perceives more support than another, expectancy for success, level of aspiration, academic self-concept, and test anxiety might be affected as well.

1.2. The accuracy of teacher expectations and teacher judgments

Two parameters may be used to determine how well teachers can assess student achievement. First, a simple Pearson correlation between teacher ratings and student achievement can be computed. In this case, students are not perceived as members of different classes. Second, a so-called rank component can be determined. Correlation coefficients are calculated class-wise and averaged across classes by the aid of Fisher's z-transformation (Cronbach, 1955; Südkamp, Möller, & Pohlmann, 2008). The rank component better suits teachers' evaluation perspective. Teachers primarily consider the performance capability of their class and take it as a frame of reference for making performance judgments (Schrader & Helmke, 2001). In general, measures of accuracy determined by the rank component are slightly higher than total correlations across all classes (Hoge & Coladarci, 1989).

Teacher expectations reflect student achievement mainly because they are accurate and correlation coefficients found in self-fulfilling prophecy studies usually range between .40 and .80 (Jussim, Robustelli, & Cain, 2009). Research on teacher judgment has produced quite similar outcomes. Hoge and Coladarci (1989) found in a meta-analysis of 16 studies a median correlation of .66 between teacher judgment and student performance in a standardized achievement test. A newer meta-analysis of Südkamp et al. (2012) on the basis of 77 studies revealed a comparable result with a mean overall effect size of .63.

Other investigations focused on accuracy of teacher judgments for students' motivation and emotion. Teachers typically show a high accuracy when asked about students' expectancy of success, i.e., how students expect to perform in the next exam. The class-wise calculated correlations between teacher judgments and student self-reports are usually higher than .60 (Urhahne et al., 2010, 2011). Teachers can predict students' academic self-concept with medium accuracy and correlation coefficients usually range between .30 and .60 (Marsh & Craven, 1991; Praetorius, Berner, Zeinz, Scheunpflug, & Dresel, 2013; Praetorius, Greb, Dickhäuser, & Lipowsky, 2011; Spinath, 2005). Correlations of around .30 are the rule for such constructs as achievement goal orientation, level of aspiration, or interest and enjoyment (Dicke, Lüdtke, Trautwein, Nagy, & Nagy, 2012; Givvin, Stipek, Salmon, & MacGyvers, 2001; Karing, 2009; Spinath, 2005; Urhahne et al., 2010, 2011). However, only small correlations below .30 can be expected when teachers are asked to judge students' test anxiety (Boehnke, Silbereisen, Reynolds, & Richmond, 1986; Spinath, 2005; Urhahne et al., 2011). In general, correlations tend to be higher when predicted student characteristics closely correspond to student performance.

1.3. Teacher judgments and student motivation

Teachers tend to overestimate student performance (Bates & Nettelbeck, 2001; Begeny, Eckert, Montarello, & Storie, 2008; Demaray & Elliott, 1998; Feinberg & Shapiro, 2003, 2009; Hamilton & Shinn, 2003), which usually results in a larger group of favorably judged students and a smaller group of unfavorably judged students. Student groups whose achievement is overestimated show different characteristics than student groups