



Empirical study

The link between teacher-assigned grades and classroom socioeconomic composition: The role of classroom behavior, motivation, and teacher characteristics



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ABSTRACT

Teacher judgments in terms of grades, proficiency assessments, and recommending placement in ability groups can have important consequences for a child's future educational path. Whether or not students' sociodemographic background characteristics are systematically related to teacher judgments has been a controversial topic of discussion. Using data from the TIMSS-Transition Study ($N = 3285$ fourth graders) administered across 13 German federal states in the 2006–2007 school year and survey data from parents and teachers, we investigated whether or not the average classroom socioeconomic status is reflected in teacher judgments and also examined possible underlying processes. We also probed the role of teachers' own socioeconomic backgrounds (at the age of 16) in their later susceptibility to differentially judge students from different socioeconomic backgrounds and in differentially composed classrooms. Multilevel regression analyses revealed that, after controlling for differences in achievement (as indicated by standardized tests), teachers' judgments were associated with the classrooms' socioeconomic composition, and this finding could not be attributed to the average levels of motivation or behavior in the classroom. Teachers were similarly likely to exhibit such differential judgments regardless of their own socioeconomic background. These findings are discussed in the context of their implications for educational policy.

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1. Introduction

Socioeconomic background has been found to play an important and lifelong role in individual educational trajectories. Students from low-income families may have more difficult starting conditions at school than their peers, their achievement growth may proceed at a slower rate (Caro, McDonald, & Willms, 2009), and they may be less likely to continue on to college (Cabrera & La Nasa, 2001). Additionally, these students may be faced with teachers who are less confident about students' skills and perspectives, which may not do justice to these students' actual achievement (Ready & Wright, 2011).

The literature has also discussed whether socioeconomic segregation may be detrimental to equal educational opportunities. Not

only are there indications that students' average achievement levels may be lower in classes or schools with a lower average socioeconomic status (SES)—beyond what would be expected in terms of disadvantages at an individual level (van Ewijk & Sleegers, 2010)—but researchers have also found that the SES of peer groups is associated with later educational decisions, such as college enrollment (Palardy, 2013). Even on the level of classes or schools, there may be “microlevel manifestations of stereotype bias” (Ready & Wright, 2011, p. 336) that result in less favorable teacher judgments in classrooms with a lower average SES or more favorable judgments in classrooms with higher SES but similar achievement in standardized tests (Ready & Wright, 2011).

Specifically, discrepancies in teacher judgments based on social characteristics run counter to the distributive justice that is the aspiration of those educational systems underpinned by democratic and egalitarian educational ideals. To date, research on the role of classrooms' socioeconomic composition in teacher judgments has been scarce. Therefore, our study was designed to examine whether the average SES of school classes would have a

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systematic relationship to teacher-assigned grades in mathematics. We further investigated whether this relationship could be explained by the average levels of behavior and motivation in the class, which might vary by a classroom's average SES. In addition, because very few studies have explored the relevance of teachers' own socioeconomic background to their judgments, we examined whether their background was relevant to their judgments and moderated the effect of individual students' SES and socioeconomic classroom composition on teacher-assigned mathematics grades specifically.

1.1. Teachers' grading practices and the role of non-achievement factors

In what way "student grades represent actual student achievement" (Randall & Engelhard, 2010, p. 1372) is a question that has occupied researchers for many decades. Textbooks on assessment and grading advise teachers to base their final report card grades on students' achievement of the main educational goals in class (e.g., Brookhart, 2004; Linn & Miller, 2005). Brookhart (2004) highlights that teacher-assigned grades should primarily function as information for students and parents about students' course achievements. However, when assigning grades, teachers in fact seem to take student characteristics other than achievement into account, such as the student's effort and classroom behavior (McMillan & Nash, 2000; Randall & Engelhard, 2010). For instance, teachers assign less favorable grades for similar achievement when they perceive a student's behavior to be inappropriate (Zimmermann, Schütte, Taskinen, & Köller, 2013) or when a student displays little interest or effort (Hochweber, Hosenfeld, & Klieme, 2014; Neumann, Maaz, & Trautwein, 2012).

A further aspect in this controversy is the extent to which teacher-assigned grades and other forms of teacher judgments (e.g., proficiency assessments or recommendations for ability groups) systematically vary for students of different gender, SES, and ethnicity (for reviews, see Jussim, Cain, Crawford, Harber, & Cohen, 2009; Südkamp, Kaiser, & Möller, 2014). In light of government efforts to reduce social disparities in the educational system, different teacher judgments for students from varying socioeconomic backgrounds are a particularly delicate matter. In fact, whether or not teacher judgments systematically vary along with students' SES is a longstanding and controversial topic of debate. Studies employing experimental designs have found teachers' judgments differ systematically for low-SES students and high-SES students (Auwarter & Aruguete, 2008). However, standardized achievement tests also indicate that students from different backgrounds might actually exhibit different levels of achievement in school (Jussim, Eccles, & Madon, 1996; for a different stance, see e.g., Santelices & Wilson, 2010). Although, standardized achievement scores may also contain measurement errors (which can be rooted, for instance, in test-taking strategies or test anxiety), they constitute a "teacher-free" measure that can provide a point of comparison for teachers' judgments. Thus, later studies have estimated the extent to which teachers' judgments systematically vary for students with different SES, but similar results in standardized achievement tests (e.g., Ready & Wright, 2011).

Some of these studies found substantial evidence suggesting that differences in teacher judgments based on students' socioeconomic status—which are often operationalized by indicators of students' families' economic or cultural capital—reflect empirical differences in students' standardized achievement test scores (Jussim et al., 1996; Meisels, Bickel, Nicholson, Xue, & Atkins-Burnett, 2001). However, other research has indicated that not all differences in teachers' judgments by students' socioeconomic status can be explained by differences in standardized achievement test scores. Teachers might judge students from low-SES families

less favorably or students from high-SES families more favorably than the other students in the classroom, even when the students' achievement in standardized tests are similar (Alvidrez & Weinstein, 1999; Boone & van Houtte, 2012; Dauber, Alexander, & Entwisle, 1996; de Boer, Bosker, & van der Werf, 2010; Hochweber et al., 2014; Kelly, 2008; Ready & Wright, 2011; Tach & Farkas, 2006).

These differences in teachers' judgments for low-SES and high-SES students may be partially attributable to the way in which teachers perceive their students' effort and classroom behavior (for a similar proposal see Entwisle, Alexander, & Olson, 2007): Teachers have judged low-SES students to be less motivated in school and to behave less appropriately in class (Dodge, Pettit, & Bates, 1994; Entwisle et al., 2007; Maaz, Neumann, Trautwein, Fiege, & Baeriswyl, 2013) and there is an indication that teachers assign lower grades to students whom they perceive as less interested or dedicated (Boone & van Houtte, 2012; Hochweber et al., 2014; Kelly, 2008; for similar results, see Condrón, 2007).

1.2. Differential grading in differentially composed classrooms

Another hypothesis suggests that the socioeconomic composition of the classroom may also play a role in teachers' judgments. This would mean less favorable judgments in school classes or schools with a lower average SES or more favorable judgments in school classes or schools with a higher average SES than would be expected based on standardized assessment. However, the evidence for this has been scarce and inconsistent. So far, research on the associations between peer group and teachers' judgments has mainly produced evidence on the role of the peer group's average level of achievement (not SES). In virtually all of these studies, a so-called "Big-Fish-Little-Pond Effect" has been evident: Teachers judge students with similar scores in standardized achievement tests more favorably in school classes with lower average achievement than in classes with higher average achievement (e.g., Dompnier, Pansu, & Bressoux, 2006; Marsh, 1987). Some researchers could not confirm that the classroom's average SES was additionally reflected in teachers' judgments. For example, teachers' judgments of elementary school students' overall achievement were similar in low-SES and high-SES classrooms with similar average achievement in standardized tests (Maaz et al., 2008; for similar results, see Hibel, Farkas, & Morgan, 2010; Kelly, 2008). However, there is some evidence that teacher judgments might be associated with classroom SES. In a large and diverse sample of fourth graders in the US, Ready and Wright (2011) found that, even when standardized assessments were comparable, teachers underestimated the literacy and language abilities of students in low-SES classrooms compared with high-SES classrooms. The authors emphasized the significance of this finding in indicating that a low-SES student (1 SD below the mean) who most likely belonged to a low-SES classroom (1 SD below the mean) would be less favorably rated by more than 0.5 SD compared with a high-SES student in a high-SES classroom with similar scores in standardized achievement tests (1 SD above the mean, respectively). Other studies have reported similar associations between classroom SES and teacher-assigned grades (Hochweber et al., 2014; Neumann, Milek, Maaz, & Gresch, 2010; for teacher recommendations, see also Gröhlich & Guill, 2009; Schulze, Wolter, & Unger, 2009).

Such differences in teachers' judgments might arise as a consequence of learning behavior that diverges between lower SES and higher SES classrooms or schools (Dreeben & Barr, 1988; Hanushek, Kain, Markman, & Rivkin, 2003; Palardy, 2013). Students' peers seem to influence not only students' academic development but also their school enjoyment, academic aspirations, and behavioral norms (Jencks & Mayer, 1990; Palardy, 2013; Ryan,

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