



Socioeconomic and language minority classroom composition and individual reading achievement: The mediating role of instructional quality



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ABSTRACT

In this study, we investigated effects of socioeconomic and language minority classroom composition on students' reading achievement and explored the mediating role of central features of instructional quality, namely focus on language, student-oriented climate, and structured classroom management. Analyses were based on data collected from 352 German ninth-grade classrooms across two measurement points (t_1 , t_2) in a multilevel framework. We found socioeconomic composition to be related to individual reading achievement at t_2 after accounting for the corresponding baseline assessment at t_1 . However, the proportion of German language learners had no additional effect on reading achievement. Our results also suggest that the effect of the socioeconomic composition on achievement may be mediated partially by the teacher's focus on language during instruction. We conclude that more attention has to be paid to providing equal opportunities to all students in language classes.

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1. Introduction

Being able to read and understand texts is paramount to academic achievement and essential for preparing children and adolescents for their educational and occupational future. Findings from various international large-scale assessment studies indicate, however, that students from families with low socioeconomic status (SES) and students with a language minority background reach lower levels of reading achievement (e.g., OECD, 2010). Currently, many education systems around the world are attempting to find the best way to serve their heterogeneous bodies of students, as schools and classrooms face high concentrations of low SES and language minority students. Although the classroom composition can affect learning (e.g., Van Ewijk & Sleegers, 2010a, 2010b), little is known about the factors underlying such compositional effects.

A crucial factor might be instructional quality. Although the acquisition of reading comprehension skills also occurs outside the

school, it is a major focus of classroom instruction. Instruction is influenced by the curriculum prescribed by a state or school district, by programs at individual schools, by the characteristics of the individual teachers as well as by the characteristics of the students in the class. Literature suggests that instruction depends on classroom characteristics (Helmke, 2010) and disadvantaged students attend classes where instructional quality is lower, yet this discussion is mostly based on theoretical arguments and qualitative research (see Hattie, 2002). Little is known about the effects of instructional quality on the development of reading comprehension in classrooms with varying compositions of SES and language minority students. Such knowledge, however, is important to understanding possible mechanisms causing classroom composition to affect learning.

In the present study, we aim to shed light on the relationship among classroom composition, instructional quality, and reading achievement in the course of one school year. We present a first attempt to systematically investigate the assumption of the mediating role of instructional quality for classroom composition effects in a large sample controlling for relevant background characteristics. In the literature review, we first describe the theories and present findings suggesting that characteristics of students in a class may be relevant to learning (Section 1.1). These aspects lead to

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our research question on the relationship between classroom composition characteristics and reading achievement. Second, we explore the role of instructional quality for achievement development in classrooms that differ in terms of their average SES and proportion of language minority students (Section 1.2), referring to our research questions on the mediating role of instructional quality for classroom composition effects.

1.1. Classroom composition and achievement

Empirical findings indicate that students' learning outcomes are related to the composition of their learning environment. They show that students tend to reach higher levels of achievement when they are learning in schools or classrooms with a high average SES even after the average prior achievement level of the school or classroom is controlled (see meta-analysis by Van Ewijk & Slegers, 2010a).

Research on how achievement is affected by the proportion of language minority students in a class has provided less conclusive results. A number of studies found that the proportion of language minority students has no additional relevance for achievement after controlling for the average SES of students in a class and prior achievement level (e.g., Stanat, Schwippert, & Gröhlich, 2010). In contrast, some studies report that a higher proportion of language minority students in a school or class may even lead to higher achievement controlling for SES (e.g., Benner & Crosnoe, 2011) or controlling for SES and prior achievement (e.g., Peetsma, Van der Veen, Koopman, & Van Schooten, 2006), as students in such learning environments encounter and have to work through contradictions and discrepancies in everyday life, which helps them to expand their intellectual capacities (Benner & Crosnoe, 2011).

Although effects of school and classroom composition on achievement are—at least for SES and mean prior achievement—quite well documented in different countries, few studies have investigated empirically *why* students perform differently in classrooms with varying compositions of SES and language minority students (Van Ewijk & Slegers, 2010a). Several interrelated factors have been suggested to make the SES or language minority composition of the learning environment relevant to learning: (1) peer processes, (2) school resources, and (3) instructional quality (see Thrupp, 1999; Thrupp, Lauder, & Robinson, 2002; for a methodological perspective by Harker & Tymms, 2004, and Hauser, 1970, see Section 5.1).

First, peers with a high SES may positively affect a student's individual achievement because these students may share values, beliefs, and behaviors associated with learning and achievement (e.g., positive attitudes towards school, optimism, and regular school attendance). In classes with a large number of such students, a positive learning culture fostering motivation to learn as well as achievement may be likely to emerge (see Agirdag, Van Houtte, & Van Avermaet, 2012; Goldsmith, 2011; Palardy, 2013). Likewise, students may be better able to support each other by explaining learning materials. In contrast, a high concentration of language minority peers is assumed to have negative effects on a student's language-related achievement because there are fewer opportunities to learn the language of instruction from interacting with classmates (see Peetsma et al., 2006; Van Ewijk & Slegers, 2010b).

Second, students with a high SES whose native language is the language of instruction often attend schools with better resources and favorable organizational and structural features such as, class size, teacher qualifications, and programs that encourage learning (Hattie, 2002; Rumberger & Palardy, 2005; Wilkinson, Hattie, Parr, & Townsend, 2000). Parents with a high SES whose native language is the language of instruction may deliberately choose schools which are thought to offer better learning conditions due to the resources they offer.

Third, classes with many high SES students whose native language is the language of instruction are often provided with better learning opportunities, for example, more challenging tasks and a more student-oriented climate (see Section 1.2.2). This hypothesis, suggesting that instructional quality serves as a possible mediator for the relationship between classroom composition and student achievement, is explored in the present paper. After describing the construct of instructional quality in the next section, we explain this argument in more detail.

1.2. The role of instruction for student achievement in classrooms with varying compositions of SES and language minority students

1.2.1. Instructional quality and its relationship with student achievement

It has been suggested that three basic dimensions of instructional quality (as opposed to instructional quantity) related to student learning are student-oriented climate, efficient classroom management, and cognitively challenging learning opportunities (Baumert et al., 2010; Klieme, Lipowsky, Rakoczy, & Ratzka, 2006; Pianta & Hamre, 2009). These dimensions have been investigated mostly in mathematics lessons but are assumed to be relevant in other school subjects as well. This is most obviously the case for student-oriented climate and structured classroom management. Cognitively challenging learning opportunities should be more domain-specific in nature but also play an important role in most subjects. For language instruction, such as reading instruction, an indicator of cognitively challenging learning opportunities is teachers' focus on students' language learning (see Klieme et al., 2008).

A *focus on language* during instruction refers to the targeted attention a teacher pays to language-related aspects like writing or speaking grammatically correct. A teacher who places a special focus on language during instruction is believed to set clear and high demands and to offer challenging learning opportunities (Klieme et al., 2008). Klieme et al. (2008) showed that a focus on language was associated with higher gains in reading comprehension from the beginning to the end of ninth grade. Following Seidel and Shavelson's meta-analysis (2007), focus on language can be classified as an indicator of domain-specific components of instruction as it specially refers to the content domain of language instruction. In classes with a *student-oriented climate*, teachers offer support for individual learners and focus on making assignments comprehensible to students. These characteristics are thought to influence students' interest and involvement during lessons and to promote learning (Weinert, Schrader, & Helmke, 1989; see "goal-setting and orientation" in Seidel & Shavelson, 2007). *Structured classroom management* refers to teacher behaviors such as pointing out important aspects of a lesson or making sure that students pay attention throughout the entire lesson. Well-structured classroom management allows students to spend more time on a task and on working with the learning material (Kunter & Baumert, 2006a; Weinert et al., 1989; see "organization of learning" in Seidel & Shavelson, 2007).

There is some inconsistency in the relative importance of these dimensions of instructional quality across studies investigating the effects on student outcomes. For instance, Seidel and Shavelson's (2007) meta-analysis found the largest effects on learning outcomes for domain-specific components of teaching (that we deem represented by focus on language in the present study) and only very small effects for more distal components, such as the organization of learning. In contrast, in Wang, Haertel, and Walberg's (1993) review, classroom management as well as student and teacher social interactions—which are part of a student-oriented climate—were among the five most influential categories. Despite this inconsistency, it can be assumed that focus on language, student-oriented climate, and structured classroom management

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