Routledge
Taylor & Francis Group

Migrant teachers in the classroom: a key to reduce ethnic disadvantages in school?

Martin Neugebauer [a], Oliver Klein[b] and Marita Jacob [c]

aDepartment of Education and Psychology, Freie Universität Berlin, Germany; bformer employee of Mannheimer Zentrum für Europäische Sozialforschung (MZES), Mannheim, Germany; cInstitute of Sociology and Social Psychology, University of Cologne, Cologne, Germany

ABSTRACT

The educational disadvantages of migrant students are a persistent problem in many Western countries. Against this background, policymakers often call for more diversity in the teacher workforce, arguing that migrant students might benefit from being taught by migrant teachers. Despite the popularity of this claim, there is almost no research-based rationale for increasing the diversity of teachers in Europe. This paper is a step toward filling this research gap for Germany, aiming to assess whether migrant teachers reduce ethnic educational disadvantages. Our analyses are based on a nationally representative large-scale assessment of ninth graders that provides information on the migration status of both students and teachers, with achievement tests and teacher-assigned grades in German as dependent variables. The results run contrary to widely held expectations, indicating little evidence that migrant students benefit from being taught by migrant teachers.

Introduction[1]

The educational disadvantages of migrant students are a persistent problem in Germany, as in many other Western countries (OECD, 2015). A well-established body of literature agrees that socioeconomic circumstances, as well as language barriers, are vital to understanding the disadvantages of children with migration backgrounds (Heath & Brinbaum, 2014; Kristen & Granato, 2007). More recently, sociological interest has emerged regarding teachers (Neugebauer, 2019; Reimer, 2019) and their role in ameliorating or perpetuating ethnic inequalities (Costa et al., 2021; Petersen, 2017). Both researchers (e.g. Heckmann, 2008, pp. 35–37; Schofield, 2006) and policymakers (e.g. BAMF, 2010, p. 101–102; Merkel, 2015, p. 7) often call for more diversity in the teacher

workforce, assuming that migrant students, in particular, may benefit from being taught by migrant or ethnic-minority teachers. Over the past years, several initiatives have been launched to recruit migrants for teacher training in Germany (e.g. Netzwerk Lehrkräfte mit Zuwanderungsgeschichte [Network of Migrant Teachers], 2022). Similar calls and initiatives are being supported in other European countries (Donlevy et al., 2016). Migrant teachers are expected to be more knowledgeable about cultural differences and migrant-specific structural barriers, while being less biased in assessing migrant students and serving as potential role models (Kleen et al., 2019, p. 894; Villegas & Irvine, 2010).

However, empirical evidence for these assumed beneficial effects of migrant teachers on (migrant) students is scarce. While a growing body of research has investigated the effects of demographically similar teachers on student outcomes (Andersen & Reimer, 2019; Dee, 2004, 2007; Driessen, 2015; McGrady & Reynolds, 2013; Neugebauer et al., 2011; Ostermann & Neugebauer, 2021; for a review see: Coenen et al., 2018, p. 867ff), this literature has primarily focused on gender and race rather than migration background. This paper is a step towards filling this research gap and asks: *Do migrant students benefit from being taught by a migrant teacher?*

Given the meagre share of teachers with migration backgrounds in many European countries (cf., Donlevy et al., 2016, p. 29ff), few datasets allow researchers to examine such teacher-student matches with survey data. For our empirical analyses, we employ a large-scale dataset from Germany that provides information about the migration backgrounds of both students and teachers, the National Assessment Study on Languages (Köller et al., 2011). This dataset stands as the most extensive large-scale assessment of ninth graders and their teachers in Germany. We rely on the 2008/2009 round of the National Assessment Study as it was the only round to assess the migration background of teachers. First, we compare teachers along a range of characteristics to elaborate on possible systematic differences between teachers with and without migration backgrounds. Second, and more importantly, we look at migrant and non-migrant students taught by migrant or non-migrant teachers and analyse two central educational outcomes: students' achievement tests and their teacher-assigned grades in German.

Background

Migrant students in Germany

In Germany, about one-third of students have a migration background, the majority of whom were born in Germany (i.e. second-generation). Among ninth graders, which are the focus of this paper, the share of students with migration background was around 29% in 2008/2009, and it grew to 34% in

2018 (Henschel et al., 2019). The largest group are descendants of guest workers who migrated from Turkey and other South European countries to Germany between 1950 and 1973. The second largest group immigrated from Poland and, since the 1990s, the former Soviet Union. More recent groups moved to Germany from Eastern European countries following the European Union's eastward expansion in 2004. Not included in the cohort under investigation are war refugees who arrived in Germany from e.g. Syria after 2015 or most recently from Ukraine.

While there are essential differences, on average migrant students experience substantial educational disadvantages throughout their school careers (Diehl et al., 2016; Kristen et al., 2019). They tend to score lower on achievement tests, receive worse grades and attend lower school tracks. In the stratified German school system, after completing primary education, students enter one of several secondary tracks that differ in length and curriculum. Among students in the ninth grade, migrant students are over-represented in the lowest track ('*Hauptschule*'), while also underrepresented in the highest track ('*Gymnasium*') which prepares students for university education.

Teachers and educational disadvantages of migrant students

Ethnic differences in education have been widely examined, with a particular focus on socioeconomic background and knowledge of the lingua franca, and the relevance of these two factors for migrant students' educational disadvantages is largely undisputed (Becker, 2011; Heath & Brinbaum, 2014; Kristen & Granato, 2007). However, more controversial and far less researched is the extent to which teachers may contribute to ethnic disparities (Diehl & Fick, 2016). Rosenthal and Jacobson (1968) argued that teachers have lower performance expectations of ethnic minorities, which, in the style of self-fulfilling prophecies (Merton, 1948), negatively affects their competence development as measured by *achievement tests*. In addition, teachers may – consciously or unconsciously – disadvantage migrants *when grading their students*. In fact, national and international studies provide some empirical support for these arguments (Alvidrez & Weinstein, 1999; Bonefeld & Dickhäuser, 2018; Glock & Krolak-Schwerdt, 2013; Jussim et al., 2009; Lorenz, 2018; Sprietsma, 2013; Tenenbaum & Ruck, 2007; Triventi, 2020; Van Ewijk, 2011), though the effects are often small and not always significant (Kristen, 2006; Wenz & Hoenig, 2020).

Why migrant teachers may make a difference

Against this backdrop, teachers with migration backgrounds might be a key to reduce ethnic disadvantages. The following section will discuss some

theoretical considerations suggesting that migrant teachers may have a positive impact on (migrant) students. We distinguish between mechanisms that primarily influence student achievement as measured by achievement tests and mechanisms that influence teacher-assigned grades.

Achievement tests

First, the mere presence of migrant teachers may be beneficial to migrant students' learning progress due to a simple role-model effect (Dee, 2007), serving as examples of successful educational attainment in contrast to the average lower attainment of migrants in many European countries (OECD, 2015). Additionally, having a migrant teacher may reduce migrant students' stereotype threat, the phenomenon that students tend to perform worse when they fear being evaluated through the lens of a negative stereotype about the group to which they belong (Steele, 1997). Furthermore, migrant teachers may be less likely to hold performance expectations that differ depending on students' migration status, and thus less likely to contribute to the aforementioned self-fulfilling prophecy of migrant students' lower achievement. Migrant teachers may even have higher performance expectations for migrant students than native teachers, leading to relatively more positive cognitive development. Finally, teachers with migration backgrounds may apply different instructional or pedagogical strategies that are particularly beneficial for migrant students learning progress (see, Dee & Penner, 2017 for a 'culturally-relevant pedagogy' for minority students). Migrant teachers may be more sensitive to migrant students' difficulties in the host country and provide them with targeted support (Redding, 2019, p. 504; but see, Rosen & Jacob, 2022), which is particularly relevant in the case of language difficulties. If any of the above-mentioned arguments hold for migrant students in Germany, they should perform better on achievement tests if taught by a migrant teacher (*Achievement Test Hypothesis*).

Teacher-assigned grades

Migrant and non-migrant teachers may differ in their evaluations of (migrant) students, given a certain achievement level. This may be due to discriminatory behaviour or more subtle processes of biased evaluations. For instance, migrant teachers may be less prone to statistical discrimination than non-migrant teachers; in other words, when unsure about a student's actual achievement, they may be less affected by the perceived overall average ability of migrant students. Similarly, taste-based discrimination, or the devaluation of minority groups due to internalised prejudices, may occur less among teachers who themselves have a migration background (cf., Costa et al., 2021). Another explanation focuses on actual student misbehaviour. Students with migration backgrounds may be more inclined to misbehave when matched with a native teacher. Such arguments

have been put forward in the literature on black students actively construct-ing racial boundaries toward white teachers (Downey & Pribesh, 2004). Should similar processes occur among migrant students, they may influence teachers' grading decisions but not necessarily students' test scores. If any of these arguments apply to our setting, migrant students should receive better grades if graded by a migrant teacher, net of achievement test scores (*Teacher Evaluations Hypothesis*).

Previous research on migrant teachers

Despite the vivid debates surrounding migrant teachers and their potential role in the educational opportunities of migrant students, (quantitative) research devoted to this topic has been scarce. One important reason for this shortcoming is the paucity of data. In many European countries, the share of teachers with migration backgrounds is quite low, making it difficult to identify a meaningful number of migrant teachers in a representative dataset (Donlevy et al., 2016). In Germany, for instance, only around 8% of all teachers had a migration background in 2013; by 2021, this figure had risen to 13% (Mediendienst Integration (2022), based on a request at the Federal Statistical Office and Microcensus). This diffi-culty is compounded by the fact that most available large-scale data sets do not assess the migration background of teachers.

However, several qualitative and mixed-methods studies have provided descriptions of migrant teachers' self-perceptions and the perceptions of others, as well as their subjective (discrimination) experiences in educa-tional institutions (for an overview: Georgi, 2013; Rosen & Lengyel, 2022). In addition, a few quantitative studies have provided insights into teachers' attitudes and beliefs toward students with a migration background or migration-related diversity in general (Kleen et al., 2019; Rosen & Jacob, 2022). However, none of these studies have been able to elucidate the effects of migrant teachers on migrant students' achievement or whether their evaluations differ from native teachers.

In a vignette study conducted by Glock and Schuchart (2020), preservice teachers with and without migration backgrounds were asked to judge a Turkish student's academic competence. They found that preservice teachers of Turkish origin evaluated the Turkish student's performances more positively than native teachers. However, the results must be inter-preted with caution, as socially desirable response behaviour may have occurred (cf., Kleen et al., 2019). Moreover, the external validity of the findings may be limited due to the sample comprising only preservice teachers answering a questionnaire in a university setting. Another contri-bution focused on preschool children aged 3–6 (Neugebauer & Klein, 2016). Based on the kindergarten cohort of the German National Educational

Panel Study (NEPS), their analyses showed that migrant children's competencies are not enhanced when educated by migrant teachers. Similarly children's social behaviour was not rated higher by migrant teachers. However, these results may not generalise to school-age children, a gap that we aim to address in this paper.

Methods

Data and variables

Our analyses are based on the National Assessment Study on Languages 2008/2009 (Köller et al., 2011), the official national large-scale assessment study monitoring German language acquisition among ninth graders. Student achievement tests were supplemented by student and teacher questionnaires, with very high response rates (>88% for the student questionnaires). This data is unique in two respects. First, it is one of the very few studies that measure the migration background not only of students but also of teachers (in 10 of 16 federal states). Second, the large sample size makes it possible to analyse the relatively small group of migrant teachers.[2] For our analysis, we dropped students with special educational needs, those excluded from the testing, all students with teachers who worked with the class for only half a year or less and students from classrooms in which less than five students participated in the German language competence tests.[3] This resulted in a final sample of 9,262 students taught in 484 classrooms by 484 teachers.

Our first outcome of interest is students' achievement test in German language. Trained test administrators were responsible for the test implementation in the schools. The test lasted 60 minutes and included three domains: reading comprehension, listening comprehension and orthography. The dataset provides five plausible values for each student and domain, which we analysed jointly.[4] According to the researchers responsible for the tests, it is not advisable to interpret a combined score of the three distinct language domains. Therefore, we estimated three separate regression models.

Our second outcome variable is teacher-assigned grades in German. The dataset provides mid-term German school marks in the ninth grade, reported by students' German class teachers. The original German grading scale ranges from 1, 'very good', to 6, 'insufficient'. We recoded the scale so that higher scores imply better grades.

Our primary independent variables are the migration backgrounds of students and their teachers. Both student and teacher questionnaires included questions on whether the respondents or their parents were born abroad. If either were the case for any person, we considered the respondent

a migrant student resp. a migrant teacher. Unfortunately, teachers were not asked about their country of birth nor their parents' country of birth. Therefore, we had to rely on broad dummy indicators for migration backgrounds and could not test whether students may benefit if they share the same country of origin with the teacher (see discussion section).

In the multivariate analyses, we include a set of students' individual background and classroom characteristics as control variables. On the student level, we include their socioeconomic background by controlling for their parents' highest occupational status (HISEI) and parental education (ISCED). Furthermore, we control for students' cultural backgrounds by including the number of books in the household and a factor score of students' participation in cultural activities.[5] Moreover, we control for students' gender, age, and age squared. On the classroom level, we include gender and age of the teacher, the mean highest ISEI of students' parents in the classroom, the median ISCED and the share of children with migration backgrounds. Due to the multi-tier structure of secondary schooling in Germany, in all analyses we further control for the type of secondary school by differentiating between lower (*Hauptschule*), intermediate (*Realschule*) and upper secondary schools (*Gymnasium*), as well as middle schools (*Mittelschule, Sekundarschule*) and comprehensive schools (*Gesamtschule*). Finally, we control for the German federal state in all analyses (see, Table 1).

Data analysis

We begin our analysis by looking at potential differences between teachers with and without migration backgrounds. Thus, we provide descriptive statistics on various teacher variables and results from bivariate regression models of these characteristics on teachers' migration backgrounds. In our main analyses, we look at students' achievements and grades depending on their migration background and the migration background of their teachers. To account for the hierarchical structure of the data, with students nested in classrooms respectively in teachers, we estimate weighted two-level random intercept models.[6] All models are estimated using the provided weights. As an additional robustness check, we further estimate teacher fixed-effects regression models (see robustness checks section).

To deal with item missing values, we employ multiple imputation using chained equations to generate m = 25 complete datasets (Azur et al., 2011).[7] Subsequently, we drop cases with missing values on the given dependent variable; thus, the number of observations differs slightly between the models on achievement test scores and grades.

Table 1. Descriptive statistics.

	Native students		Migrant students	
	Mean	SD	Mean	SD
Dependent Variables				
Reading comprehension [a]	510.52	85.34	461.33	90.51
Listening comprehension [a]	513.64	93.78	450.97	101.12
Orthography [a]	510.98	94.18	474.52	101.35
Grades (1 = worst) [b]	4.04	0.84	3.85	0.83
Independent Variables				
Migration background (teacher)	0.11	-	0.14	-
Control Variables (Student Level)				
HISEI	49.27	15.35	43.57	15.61
ISCED (0/1/2)	0.22	-	0.33	-
ISCED (3/4)	0.42	-	0.39	-
ISCED (5b)	0.14	-	0.10	-
ISCED (5a/6)	0.22	-	0.18	-
Books at home (z-stand.)	0.09	0.97	−0.39	0.98
Cultural activities (z-stand)	0.04	0.99	−0.09	1.02
Age	15.15	0.62	15.35	0.77
Male	0.51	-	0.50	-
Control Variables (Teacher/Class Level)				
Age (25–29)	0.05	-	0.04	-
Age (30–39)	0.18	-	0.16	-
Age (40–49)	0.29	-	0.27	-
Age (50–59)	0.41	-	0.45	-
Age (60+)	0.07	-	0.09	-
Male	0.24	-	0.26	-
Mean HISEI classroom	48.39	7.51	45.66	7.76
Mean ISCED classroom	2.18	0.60	2.00	0.60
Share of migrant students	0.22	0.17	0.48	0.25
Lower secondary school	0.10	-	0.25	-
Middle school	0.26	-	0.17	-
Intermediate secondary school	0.13	-	0.20	-
Comprehensive school	0.15	-	0.16	-
Upper secondary school	0.36	-	0.22	-
N	6526		2736	

Note: All statistics weighted and averaged over m = 25 imputed datasets; a) number of observations reduced to 6508 native students and 2735 migrant students without missing values on test scores; b) number of observations reduced to 6451 native and 2683 migrant students without missing values on grades.

Results

Characteristics of migrant teachers

Since little is known about whether migrant teachers differ from non-migrant teachers, we begin with a brief description of some characteristics. Comparing teachers with and without a migration background in our sample, we mostly find relatively small and insignificant differences (Table 2). On average, teachers with a migration background are more often female, younger, show less job experience and participate less often in formal advanced training than teachers without migration backgrounds. We find no significant differences between teachers with and without migration backgrounds regarding the social background of their parents. Migrant teachers teach classrooms with a slightly higher share of migrant students and a slightly lower mean ISCED of students' parents.

Table 2. Means/proportions of teachers with/without migration background.

	Native teachers	Migrant teachers	t
Age			−1.30
Age (25–29)	0.05	0.09	
Age (30–39)	0.21	0.28	
Age (40–49)	0.24	0.25	
Age (50–59)	0.41	0.35	
Age (60+)	0.08	0.03	
Male	0.34	0.18	−1.77 [+]
HISEI (parents)	51.90	55.93	0.84
ISCED (parents)			0.02
ISCED (0/1/2)	0.50	0.50	
ISCED (3/4)	0.04	0.05	
ISCED (5b)	0.07	0.07	
ISCED (5a/6)	0.39	0.39	
Job experience			−1.87 [+]
Job experience (< 5 years)	0.16	0.26	
Job experience (6–20 years)	0.32	0.40	
Job experience (20+ years)	0.52	0.34	
Studied German as major	0.70	0.83	1.58
Final degree in subject German	0.76	0.81	0.66
Formal advanced trainings in last 18 months	23.46	15.52	−1.51
Informal training (reading specialised literature)	0.88	0.87	0.23
Share of migrant students in classroom	0.29	0.37	1.56
Mean ISEI in classroom	47.69	46.01	−0.83
Mean ISCED in classroom			−1.90 [+]
Mean ISCED in classroom (0/1/2)	0.13	0.38	
Mean ISCED in classroom (3/4)	0.64	0.46	
Mean ISCED in classroom (5b)	0.02	0.01	
Mean ISCED in classroom (5a/6)	0.21	0.15	
Secondary school type			1.19
Lower secondary school	0.22	0.19	
Middle school	0.18	0.29	
Intermediate secondary school	0.18	0.28	
Comprehensive school	0.09	0.05	
Upper secondary school	0.34	0.19	
N	422	62	

Note: All statistics weighted and averaged over m = 25 imputed datasets.
[+]$p < 0.1$.

Students' achievements and teachers' evaluations

Turning to our main analyses, we assess whether migrant students benefit from being taught by a migrant versus native teacher. Because ethnic disadvantages may likewise occur if native teachers privilege native students, we include them in the analysis as well. Thus, we investigate four groups: students with or without migration backgrounds (migrant/native student), taught either by a teacher with or without a migration background (migrant/native teacher). We estimate weighted multilevel regression models for each outcome variable with students' and teachers' migration status as main effects, as well as the interaction effect between them. The models also include a rich set of control variables to mitigate bias due to non-random teacher assignment to classrooms. For instance, the previous section showed that migrant teachers are more likely to teach classrooms with a slightly higher share of migrant students. As classroom composition can influence student learning, we include such compositional variables and

several other variables which may be related to student's school achievement (see 'Control variables' in Table 1).

To facilitate the interpretation of our results, we display our main estimates graphically in Figure 1 (the full regression table for the first outcome is shown in Appendix A2). The first bar in each graph is the reference category, native students taught by native teachers, and is therefore always fixed to zero. The additional bars show how the other groups compare to this reference category. The inscribed arrows indicate whether migrant (or native) students benefitted from being taught by a migrant teacher as opposed to a native teacher. We will first discuss the results for student achievement measured by German language test scores and then turn to teachers' evaluations, namely German grades, while controlling for test scores.

Findings for the three achievement tests (reading, listening, orthography) show a similar pattern across domains with two core findings. First, we can replicate the well-known finding that migrant students perform worse than students without migration backgrounds, independent of the migration status of the teacher. However, more interesting for our research question
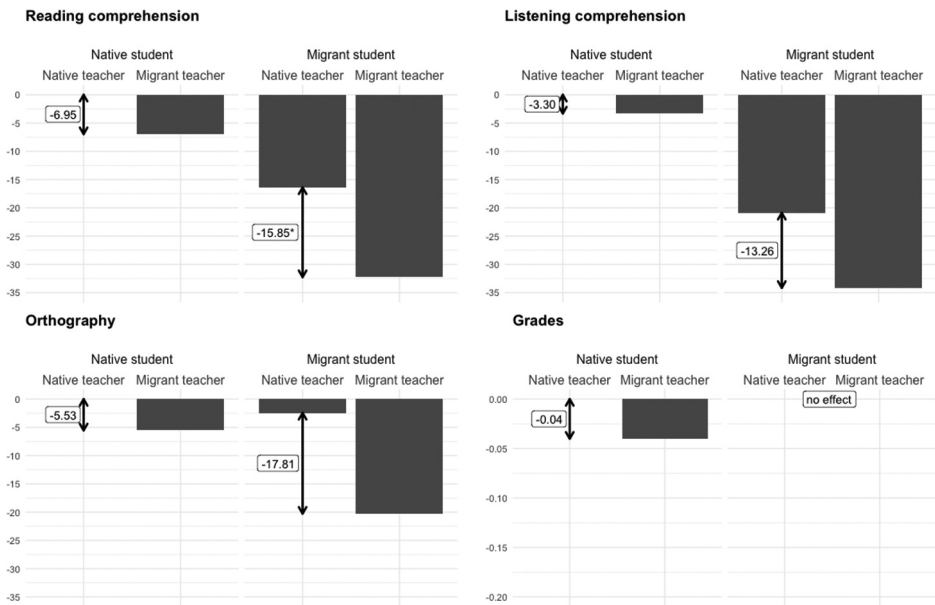
Figure 1. Achievement tests and teacher-assigned grades by migration status of teacher and student. Note: Estimates from multilevel mixed linear models with multiply imputed (m = 25), clustered and weighted data; all models control for type of school, federal state, highest ISEI of students' parents, highest ISCED of students' parents, number of books in students' home, cultural activities of students, age of students, age square of students, gender of students, age of teacher, gender of teacher, mean ISEI in classroom, median ISCED in classroom, and share of students with migration background in classroom. Grades model additionally controls for achievement test scores (reading comprehension, listening comprehension, and orthography).* $p < 0.05$

is the second finding, which contradicts the *Student Achievement Hypothesis*. Migrant and non-migrant students tend to achieve slightly lower test scores if taught by a migrant teacher. Non-migrant students score 6.95 points less on the reading comprehension test, 3.30 points less on the listening comprehension test and 5.53 points less on the orthographic test. These differences, however, are very small and not statistically significant. The disadvantage of having a migrant teacher is somewhat more pronounced for migrant students, who score 15.85 points less on the reading test, 13.26 less on the listening comprehension test and 17.81 points less on the orthographic test. Again, these differences are mostly insignificant. However, the 15.85-point difference for the reading test is significant at $p \leq 0.05$, meaning that in this data, migrant students read less well when being taught by a migrant teacher.

Looking at students' grades, we do not find support for the *Teacher Evaluation Hypothesis*. Grading differences with respect to the migration status of the teacher are essentially non-existent once achievement test scores and all background characteristics are controlled for.

Robustness checks

Our results could be misleading (1) due to selection effects or (2) because the expected effects only hold in subgroups of the population (i.e. effect heterogeneity). In this section, we report several checks to verify the robustness of our findings.

(1) In Table 3, we present estimates from teacher fixed-effects models. They yield the advantage that all teacher, classroom and school characteristics, even unobserved ones, are controlled. Thus, there is no possible bias due to any common factor among students taught by the same teacher (e.g. the social background of the teacher, classroom composition or school quality). Of course, this is also the case for teachers' migration backgrounds, which make it impossible to estimate the main effect of teachers' migration

Table 3. Teacher fixed effects regression models.

	Reading comprehension		Listening comprehension		Orthography		Grades [a]	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Migrant student	−16.52	3.57***	−21.09	3.45***	−2.64	3.22	0.01	0.04
Migrant student x migrant teacher	−9.76	11.49	−10.10	11.80	−13.35	11.29	0.04	0.09
N (teachers)	484		484		484		480	
N (students)	9243		9243		9243		9128	

Note: Estimates from teacher fixed effects models with multiply imputed (m=25), clustered and weighted data; all models control for highest ISEI of students' parents, highest ISCED of students' parents, number of books in students' home, cultural activities of students, age of students, age square of student, and gender of students.
a) Additional controls: reading comprehension, listening comprehension, orthography.
*** *p* 0.1.

background. However, it is possible to estimate the interaction term between teachers' and students' migration status. A positive interaction effect would support the notion that migrant students benefit from migrant teachers. Yet our results show that this is not the case, as all interaction effects are negative or close to zero and none are statistically significant.

(2) It may be the case that only certain subgroups of migrant students benefit from migrant teachers. First-generation migrant students may face greater challenges in learning German, and, for them, migrant teachers' capacities to support language learning may be constructive. Moreover, the aforementioned theoretical considerations suggest that migrant students from less-privileged backgrounds may particularly benefit from migrant teachers. We test both conjectures in separate subsample analyses. We ran regression models including only first-generation immigrant students (Table 4, Panel A) as well as regression models on low SES students, whom we defined as students belonging to the lowest quartile of the HISEI distribution (Table 4, Panel B). We find that first-generation migrant students and students from low SES families indeed perform worse on the achievement tests. However, results concerning the migration background

Table 4. Subgroup analyses.

Panel A: Sub-sample of first-generation migrant students

	Reading comprehension		Listening comprehension		Orthography		Grades [a]	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Migrant student	−25.69	5.44***	−35.02	5.27***	−15.06	6.16*	−0.00	0.06
Migrant teacher	−5.91	7.18	−2.70	6.65	−5.37	6.23	−0.04	0.07
Migrant student x migrant teacher	−7.99	11.97	−4.36	13.27	−10.20	18.90	0.20	0.18
L2-Variance	292.44	55.94***	437.03	85.30***	406.03	73.59***	0.07	0.01***
L1-Variance	3993.59	136.72***	4475.45	144.88***	4167.39	176.37***	0.43	0.01***
N (teachers)	484		484		484		480	
N (students)	7082		7082		7082		7015	

Panel B: Sub-sample of low SES students

	Reading comprehension		Listening comprehension		Orthography		Grades [a]	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Migrant student	−20.23	5.32***	−26.32	5.51***	−4.70	5.45	0.09	0.06
Migrant teacher	−6.40	7.22	−2.81	6.70	−6.30	6.03	−0.05	0.07
Migrant student x migrant teacher	−10.30	13.34	−14.55	12.23	−0.58	9.44	0.11	0.11
L2-Variance	276.50	50.84***	433.65	87.21***	383.72	66.82***	0.06	0.01***
L1-Variance	4010.47	137.12***	4490.73	140.76***	4186.13	180.62***	0.43	0.01***
N (teachers)	484		484		484		480	
N (students)	7226		7226		7226		7153	

Note: Estimates from multilevel mixed linear models with multiply imputed (m = 25), clustered and weighted data; all models control for type of school, federal state, highest ISEI of students' parents, highest ISCED of students' parents, number of books in students' home, cultural activities of students, age of students, age square of students, gender of students, age of teacher, gender of teacher, mean ISEI in classroom, median ISCED in classroom, and share of students with migration background in classroom.
a) Additional controls: reading comprehension, listening comprehension, orthography.
*** $p < 0.001$.

of the teacher are in line with our previous findings, not showing any (significant) positive association between teachers' migration background and (migrant) students' achievement tests or grades.

Summary and conclusion

The claim for increasing ethnic diversity among teachers implicitly assumes that a higher share of migrant teachers would be beneficial in several respects – for society as a whole, for teaching in schools, and, in particular, for migrant students' educational success. In Europe, empirical support for the expected benefits for (migrant) students taught by migrant teachers is scarce, and studies using large-scale quantitative data are particularly lacking. In this paper, we attempted to overcome this gap for Germany.

First, we compared migrant and non-migrant teachers according to several characteristics. Among other things, we found that migrant teachers have less job experience and participate less often in formal advanced training. However, these differences are small and mostly insignificant. Second, and more importantly, we analysed whether migrant students benefit from being taught by a migrant teacher in terms of test scores in reading, listening and orthography, as well as their grades in German. Our results suggest this is *not* the case for any of the observed outcomes. Contrary to expectations, reading comprehension is lower for migrant students when they have a migrant teacher. For listening comprehension and orthography, our analyses show no substantial differences regarding the presence of a migrant teacher, similarly for grades. The coefficients point in the opposite direction, but they are not statistically significant.[8]

Some important shortcomings of this study should not go unmentioned. First, we still work with a relatively low number of migrant teachers in our sample (n = 62). Because of this low case number, and because we do not know their countries of origin, we cannot test whether students may profit in particular if they share the same country of origin with their teacher. Most of the theoretical considerations of potential mechanisms do not explicitly require an origin-country-specific match. However, empirical results on racial/ethnicity matches in the U.S. (Redding, 2019), as well as recent studies on preservice teachers in Germany with Turkish versus other migration backgrounds evaluating Turkish (male) students (Glock & Schuchart, 2020; Kleen et al., 2019), suggest a closer look at such specific matches. Second, due to the cross-sectional nature of our study, we only observed a snapshot of students' performance, not knowing if and how long (non-) migrant teachers might have taught them in their school career up to that point. The timing of a student-teacher match from kindergarten to graduation and the concomitant development of disparities over time that have been studied in

the U.S. (e.g. Penney, 2017) remain open for further research. Third, our results are limited to the subject of German and two outcomes, namely language competence test scores and grades. Further research is required to extend these analyses to other domains, such as math and sciences or students' self-perception and self-confidence. Unfortunately, data limitations have so far precluded an analysis of most of these issues.

Despite these limitations, our results suggest that recruiting more migrant teachers will hardly reduce ethnic disadvantages in educational outcomes. This should be borne in mind regarding the often-heard assumption that increasing the presence of migrant teachers is an effective means to reduce ethnic disparities.

So, why may the popular claim not hold true? Two explanations seem plausible. First, migrant teachers are assumed to possess intercultural competencies *per se*; however, this might not be the case. Rather, such naturalisation of pedagogical competencies may contribute to 'othering' processes (cf., Rosen & Jacob, 2022). Students' success in school instead mainly depends on the quality of the teaching, not on the socio-demographic characteristics of the teaching workforce (for similar findings on the lack of teachers' social origin effects, see, Ostermann & Neugebauer, 2021). If having specific qualifications to deal with migrant students' needs is beneficial for migrant students, non-migrant teachers should be able to attain these skills as well. Second, migrant teachers and students are heterogeneous groups in terms of country of origin. Hence, the characteristics of migrant teachers that are assumed to enable better teaching of migrant students, such as shared languages or cultural understanding, might be limited, for example, to migrant students of the same country of origin. Due to the heterogeneity of teachers and students, these 'beneficial matches' would be rare cases.

Finally, let us assume that migrant students do, in fact, benefit from being taught by migrant teachers. Consequently, it would be optimal to segregate students into (mainly) migrant and non-migrant classrooms taught by (mainly) migrant and non-migrant teachers. This would run counter to attempts to increase diversity and de-segregate schools and society as a whole.

Notes

1. This paper uses the expressions 'migrant students/teachers' and 'students/teachers with a migration background' interchangeably. We use the terms 'native students/teachers' and 'non-migrant students/teachers' to refer to our reference group, persons born in Germany with both parents born in Germany.
2. An alternative data source is the National Educational Panel Study (NEPS), which has a fifth-grade starting cohort. However, the number of migrant student-teacher matches in NEPS is even smaller than in our data.
3. Including these classrooms does not change our findings substantively.

4. The plausible values are five estimates from multiple imputations based upon students' answers to a subset of test questions they were randomly assigned in a multi-matrix test design, similar to the well-known PISA test design. Hence, they should be analysed separately before averaging them according to Rubin's rules. Because we multiply imputed the other variables used in our study as well (25 times, see below), each competence model was estimated five times with each plausible value separately (5 x 5 = 25 times in total) and then combined according to Rubin's rules in the multiple imputation framework.

5. Cultural activities include e.g. going to a museum, concert, opera, ballet or theatre. Overall, the factor score consists of five items and has an eigenvalue of 2.09 (Cronbach alpha = 0.88).

6. We also estimated random coefficient models, including a random coefficient for students' migration backgrounds. However, the effect of students' migration backgrounds did not vary between teachers and the primary results remained unchanged (cf. Appendix A1). Thus, we chose to report the findings of the random intercept models.

7. Details on the imputation model can be obtained from the authors.

8. In light of these insignificant differences, one may wonder if we merely lack the statistical power to detect positive effects. To test this potential objection, we examined the upper bounds of the 95% confidence intervals. Looking at the results of the listening comprehension and orthography test scores, we would expect 95% of these intervals to contain the true population mean which should not be larger than 2.6, respectively 0.6 points. These upper bounds of the 95% confidence intervals are estimated as -13.26 (coefficient) $+ 1.96 \times 8.07$ (standard error) $= 2.56$ for the listening comprehension, and as $-17.81 + 1.96 \times 9.38 = 0.58$ for the orthography test. Thus, we can rule out any substantive positive association between migrant students' test scores and being taught by a migrant teacher. For grading, however, the upper bound is 0.18 ($0 + 1.96 \times 0.09$), which is a substantively important difference. Hence, we cannot rule out grading advantages (net of actual performance disadvantages) for migrant students.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Martin Neugebauer is Assistant Professor for Empirical Educational and Higher Education Research at the Freie Universität Berlin, Germany. He holds a PhD from the University of Mannheim. His research interests comprise social inequalities, returns to education, teacher recruitment, and experimental methods. Recent publications include "Higher education non-completion, employers, and labor market integration: Experimental evidence" (Social Science Research, 2022).

Oliver Klein holds a doctoral degree from the University of Mannheim, Germany. He is an independent researcher with research interests in social and ethnic educational inequality, early skill development and socialization in the early childhood. Recent publications include "The primary effect of ethnic origin - rooted in early childhood? An anaylsis of educational disadvantages of Turkish-origin children during the the transition to secondary education in Germany" (Research in Social Stratification and Mobility, 2021).

Marita Jacob is Professor of Sociology and Vice Dean of Academic Career at the Faculty of Management, Economics and Social Sciences, University of Cologne, Germany. Her main research interests are social inequality over the life course, focusing on inequalities in education, family and the labour market. She mainly works with cross-sectional and longitudinal survey data and also uses field experiments in her research.

ORCID

Martin Neugebauer 🔟 http://orcid.org/0000-0002-3496-3804
Marita Jacob 🔟 http://orcid.org/0000-0002-2674-568X

References

Alvidrez, J., & Weinstein, R. S. (1999). Early teacher perceptions and later student academic achievement. *Journal of Educational Psychology*, *91*(4), 731–746. https://doi.org/10.1037/0022-0663.91.4.731

Andersen, I. G., & Reimer, D. (2019). Same-gender teacher assignment, instructional strategies, and student achievement: New evidence on the mechanisms generating same-gender teacher effects. *Research in Social Stratification and Mobility*, *62*, 100406. https://doi.org/10.1016/j.rssm.2019.05.001

Azur, M. J., Stuart, E. A., Frangakis, C., & Leaf, P. J. (2011). Multiple imputation by chained equations: What is it and how does it work? *International Journal of Methods in Psychiatric Research*, *20*(1), 40–49. https://doi.org/10.1002/mpr.329

BAMF. (2010). *Bundeskongress – Lehrkräfte mit Migrationshintergrund: Potenziale gewinnen. Ausbildung begleiten. Personalentwicklung gestalten [Federal Congress - Teachers with a migration background: Gaining potential. accompany training. Shaping personnel development]*. Bundesamt für Migration und Flüchtlinge. http://docplayer.org/6882632-Bundeskongress-lehrkraefte-mit-migrationshintergrund.html

Becker, B. (2011). Cognitive and language skills of Turkish children in Germany: A comparison of the second and third generation and mixed generational groups. *International Migration Review*, *45*(2), 426–459. https://doi.org/10.1111/j.1747-7379.2011.00853.x

Bonefeld, M., & Dickhäuser, O. (2018). (Biased) grading of students' performance: Students' names, performance level, and implicit attitudes. *Frontiers in Psychology*, *9*, 481. https://doi.org/10.3389/fpsyg.2018.00481

Coenen, J., Cornelisz, I., Groot, W., Maassen van den Brink, H., & van Klaveren, C. (2018). Teacher characteristics and their effects on student test scores: A systematic review. *Journal of Economic Surveys*, *32*(3), 848–877. https://doi.org/10.1111/joes.12210

Costa, S., Langher, V., & Pirchio, S. (2021). Teachers' implicit attitudes toward ethnic minority students: A systematic review. *Frontiers in Psychology*, *12*, 712356. https://doi.org/10.3389/fpsyg.2021.712356

Dee, T. S. (2004). Teachers, race and student achievement in a randomized experiment. *Review of Economics and Statistics*, *86*(1), 195–210. https://doi.org/10.1162/003465304323023750

Dee, T. S. (2007). Teachers and the gender gaps in student achievement. *The Journal of Human Resources*, *42*(3), 528–554. https://doi.org/10.3368/jhr.XLII.3.528

Dee, T. S., & Penner, E. K. (2017). The causal effects of cultural relevance. *American Educational Research Journal*, *54*(1), 127–166. https://doi.org/10.3102/0002831216677002

Diehl, C., & Fick, P. (2016). Ethnische Diskriminierung im deutschen Bildungssystem [Ethnic discrimination in the German education system. In C. Diehl, C. Hunkler, & C. Kristen (Eds.), *Ethnische Ungleichheiten im Bildungsverlauf [Ethnic inequality in the educational career]* (pp. 243–286). Springer VS.

Diehl, C., Hunkler, C., & Kristen, C. (Eds.). (2016). *Ethnische Ungleichheiten im Bildungsverlauf [Ethnic inequality in the educational career]*. Springer VS.

Donlevy, V., Meierkord, A., & Rajania, A. (2016). In *Study on the diversity within the teaching profession with particular focus on migrant and/or minority background. Final report to DG Education and Culture of the European Commission*. EU Publications.

Downey, D. B., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. *Sociology of Education*, *77*(4), 267–282. https://doi.org/10.1177/003804070407700401

Driessen, G. (2015). Teacher ethnicity, student ethnicity, and student outcomes. *Intercultural Education*, *26*(3), 179–191. https://doi.org/10.1080/14675986.2015.1048049

Georgi, V. B. (2013). Empirische Forschung zu Lehrenden mit Migrationshintergrund [empirical research on teachers with migration backgrounds]. In K. Bräu, V. B. Georgi, Y. Karakasoglu, & C. Rotter (Eds.), *Lehrerinnen und Lehrer mit Migrationshintergrund [teachers with migration backgrounds]* (Beck) (pp. 85–103).

Glock, S., & Krolak-Schwerdt, S. (2013). Does nationality matter? The impact of stereotypical expectations on student teachers' judgments. *Social Psychology of Education*, *16*(1), 111–127. https://doi.org/10.1007/s11218-012-9197-z

Glock, S., & Schuchart, C. (2020). The ethnic match between students and teachers: Evidence from a vignette study. *Social Psychology of Education*, *23*(1), 27–50. https://doi.org/10.1007/s11218-019-09525-2

Heath, A., & Brinbaum, Y. (2014). The comparative study of ethnic inequalities in educational careers. In A. Heath & Y. Brinbaum (Eds.), *Unequal Attainments: Ethnic educational inequalities in ten Western countries* (pp. 1–24). Oxford University Press/British Academy.

Heckmann, F. (2008). *Education and the integration of migrants: Challenges for European education systems arising from immigration and strategies for the successful integration of migrant children in European schools and societies* (NESSE Analytical Report 1). http://www.ssoar.info/ssoar/handle/document/19250.

Henschel, S., Heppt, B., Weirich, S., Edele, A., Schipolowski, S., & Stanat, S. (2019). Zuwanderungsbezogene Disparitäten [Immigration-related disparities. In P. Stanat, S. Schipolowski, N. Mahler, S. Weirich, & S. Henschel (Eds.), *IQB-Bildungstrend 2018* (Waxmann) (pp. 295–331).

Jussim, L., Robustelli, S. L., & Cain, T. R. (2009). Teacher expectations and self-fulfilling prophecies. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 349–380). Routledge.

Kleen, H., Bonefeld, M., Glock, S., & Dickhäuser, O. (2019). Implicit and explicit attitudes toward Turkish students in Germany as a function of teachers' ethnicity. *Social Psychology of Education*, *22*(4), 883–899. https://doi.org/10.1007/s11218-019-09502-9

Köller, O., Knigge, M., & Tesch, B. (2011). *IQB-Ländervergleich Sprachen 2008/2009 (IQB-LV 2008-9) [Dataset]*. IQB – Institut zur Qualitätsentwicklung im Bildungswesen. https://doi.org/10.5159/IQB_LV_2008_v2

Kristen, C. (2006). Ethnische Diskriminierung in der Grundschule? [Ethnic discrimination in primary school?]. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *58*(1), 79–97. https://doi.org/10.1007/s11575-006-0004-y

Kristen, C., Edele, A., Kalter, F., Kogan, I., Schulz, B., Stanat, P., & Will, G. (2019). The education of migrants and their children across the life course. In H.-P. Blossfeld & H.-G. Roßbach (Eds.), *Education as a Lifelong Process: The German national educational panel study (NEPS)* (pp. 119–136). Springer (Edition ZfE.

Kristen, C., & Granato, N. (2007). The educational attainment of the second generation in Germany. *Ethnicities*, *7*(3), 343–366. https://doi.org/10.1177/1468796807080233

Lorenz, G. (2018). *Selbsterfüllende Prophezeiungen in der Schule: Leistungserwartungen von Lehrkräften und Kompetenzen von Kindern mit Zuwanderungshintergrund [Self-fulfilling prophecies in school: Performance expectations of teachers and competencies of children with an immigrant background]*. Springer VS.

McGrady, P. B., & Reynolds, J. R. (2013). Racial mismatch in the classroom. *Sociology of Education*, *86*(1), 3–17. https://doi.org/10.1177/0038040712444857

Mediendienst Integration. (2022). *Schule. Zahlen und Fakten: Integration [Schools. Facts and Figures: Integration]*. Mediendienst-Integration. https://mediendienst-integration.de/integration/schule.html

Merkel, A. (2015). Rede von Bundeskanzlerin Dr. Angela Merkel auf dem Deutschen Fürsorgetag am 17. Juni 2015 in Leipzig [Speech by Chancellor Dr. Angela Merkel at the German Welfare Day on June 17, 2015 in Leipzig]. *Bulletin der Bundesregierung*. Nr. 86-3 vom 20. Juni 2015. https://www.bundesregierung.de/breg-de/service/bulletin/rede-von-bundeskanzlerin-dr-angela-merkel-799476.

Merton, R. (1948). The self-fulfilling prophecy. *The Antioch Review*, *8*(2), 193–210. https://doi.org/10.2307/4609267

Netzwerk Lehrkräfte mit Zuwanderungsgeschichte [Network of Migrant Teachers]. (2022). Retrieved June 15, 2022, from: https://www.lmz-nrw.de

Neugebauer, M. (2019). Teachers: Their characteristics and their role in the education system. In R. Becker (Ed.), *Research handbook on the sociology of education* (pp. 365–382). Edward Elgar Publishing.

Neugebauer, M., Helbig, M., & Landmann, A. (2011). Unmasking the myth of the same-sex teacher advantage. *European Sociological Review*, *27*(5), 669–689. https://doi.org/10.1093/esr/jcq038

Neugebauer, M., & Klein, O. (2016). Profitieren Kinder mit Migrationshintergrund von pädagogischen Fachkräften mit Migrationshintergrund? [Do children with a migration background benefit from educational professionals with a migration background? *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *68*(2), 259–283. https://doi.org/10.1007/s11577-016-0359-4

OECD. (2015). *Immigrant students at school: Easing the journey towards integration*.

Ostermann, C., & Neugebauer, M. (2021). Macht Ähnlichkeit den Unterschied? Wenn sozioökonomisch benachteiligte Schülerinnen und Schüler von sozial ähnlichen Lehrkräften unterrichtet werden [Does similarity make the difference? When socio-economically disadvantaged students are taught by socially similar teachers]. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *73*, 259–283. https://doi.org/10.1007/s11577-021-00779-3

Penney, J. (2017). Racial interaction effects and student achievement. *Education Finance and Policy*, *12*(4), 447–467. https://doi.org/10.1162/edfp_a_00202

Petersen, K. B. (2017). Preparation of student teachers for multicultural classrooms: Reflections on the Danish teacher education curriculum. *Journal of the International Society for Teacher Education*, *21*(1), 45–54.

Redding, C. (2019). A teacher like me: A review of the effect of student–teacher racial/ethnic matching on teacher perceptions of students and student academic and behavioral outcomes. *Review of Educational Research*, *89*(4), 499–535. https://doi.org/10.3102/0034654319853545

Reimer, D. (2019). Teachers and teacher education. A call for a renewed sociological research agenda. *International Studies in Sociology of Education*, *28*(2), 90–109. https://doi.org/10.1080/09620214.2019.1601582

Rosen, L., & Jacob, M. (2022). Diversity in the teachers' lounge in Germany – Casting doubt on the statistical category of "migration background". *European Educational Research Journal*, *21*(2), 312–329. https://doi.org/10.1177/14749041211054949

Rosen, L., & Lengyel, D. (2022). Research on minority teachers in Germany: Developments, focal points and current trends from the perspective of intercultural education. In M. Gutman, W. Zayusi, M. Beck, & Z. Bekerman (Eds.), *To be a minority teacher in a foreign culture- empirical evidence from an international perspective*. Springer Nature (in press).

Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the classroom. *The Urban Review*, *3*(1), 16–20. https://doi.org/10.1007/BF02322211

Schofield, J. W. (2006). *Migration background, minority-group membership and academic achievement. Research evidence from social, educational, and developmental psychology*. AKI-Research Review 5. Wissenschaftszentrum Berlin für Sozialforschung.

Sprietsma, M. (2013). Discrimination in grading: Experimental evidence from primary school teachers. *Empirical Economics*, *45*(1), 523–538. https://doi.org/10.1007/s00181-012-0609-x

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, *52*(6), 613–629. https://doi.org/10.1037/0003-066X.52.6.613

Tenenbaum, H. R., & Ruck, M. D. (2007). Are teachers' expectations different for racial minority than for European American students? A meta-analysis. *Journal of Educational Psychology*, *99*(2), 253–273. https://doi.org/10.1037/0022-0663.99.2.253

Triventi, M. (2020). Are children of immigrants graded less generously by their teachers than natives, and why? Evidence from student population data in Italy. *International Migration Review*, *54*(3), 765–795. https://doi.org/10.1177/0197918319878104

van Ewijk, R. (2011). Same work, lower grade? Student ethnicity and teachers' subjective assessments. *Economics of Education Review*, *30*(5), 1045–1058. https://doi.org/10.1016/j.econedurev.2011.05.008

Villegas, A. M., & Irvine, J. J. (2010). Diversifying the teaching force: An examination of major arguments. *The Urban Review*, *42*(3), 175–192. https://doi.org/10.1007/s11256-010-0150-1

Wenz, S. E., & Hoenig, K. (2020). Ethnic and social class discrimination in education: Experimental evidence from Germany. *Research in Social Stratification and Mobility*, *65*, 100461. https://doi.org/10.1016/j.rssm.2019.100461