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### Angaben zur Veröffentlichung / Publication details:

Schwarzenthal, Miriam, Martin Daumiller, and Sauro Civitillo. 2023. "Investigating the sources of teacher intercultural self-efficacy: a three-level study using TALIS 2018." *Teaching and Teacher Education* 126: 104070. <https://doi.org/10.1016/j.tate.2023.104070>.

# Investigating the sources of teacher intercultural self-efficacy: A three-level study using TALIS 2018

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## 1. Introduction

In times of rising international migration and globalization, teachers face the challenge of having to address the needs of an increasingly diverse student body and to reap the benefits that this diversity brings to education (Juang & Schachner, 2020; OECD, 2019a). Yet in many countries, most teachers belong to the cultural or ethnic majority (i.e., Civitillo & Juang, 2020; Taie & Goldring, 2020) and feel less confident teaching cultural or ethnic minority students compared to cultural or ethnic majority

students<sup>1</sup> (Castro, 2010; Geerlings et al., 2018; Kumar & Lauermann, 2018). Across OECD countries, teaching in multicultural and multilingual settings is now the third highest area in need of professional development reported by teachers (OECD, 2019a). Thus, teachers need to feel well-equipped to teach an increasingly diverse student body.

A central belief to this end is intercultural self-efficacy. Teacher intercultural self-efficacy describes their degree of confidence about teaching classes with a high heterogeneity of students regarding their cultural or ethnic backgrounds (Guyton & Wesche, 2005). These beliefs are considered to be crucial for their choices, effort, and persistence regarding teaching in culturally or ethnically diverse schools and classrooms (Bandura, 1977; Woolfolk-Hoy et al., 2009). However, to date, many teachers report low self-efficacy in adapting their teaching to the cultural or ethnic diversity of students (OECD, 2019a), and teacher intercultural self-efficacy varies between individuals and contexts (Romijn et al., 2020). Elucidating the sources of these variations is important for a better understanding of how teacher intercultural self-efficacy can be promoted. Therefore, the overarching aim of the present study was to investigate the sources of teacher intercultural self-efficacy drawing on

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<sup>1</sup> While the term “racial minority” is commonly used in US-American research, its use is problematic in other societies, for example in continental Europe (Juang et al., 2021; Jugert et al., 2021). Moreover, the TALIS study employed terminology such as “cultural and ethnic minority” as well as “students of immigrant descent”, but not “racial minority”. Therefore, we use the terms “cultural and ethnic minority” and “students of immigrant descent” throughout the manuscript.

TALIS 2018 data from 46 countries (OECD, 2019b).

As theoretical basis of our research, we draw on socio-cognitive theory (Bandura, 1997) and ecological frameworks (Bronfenbrenner, 1979, 2005). Socio-cognitive theory suggests that engaging in vicarious experiences (i.e., observation) and mastery experiences (i.e., practice) are two potential sources for self-efficacy beliefs. Thus, we investigate how intercultural professional development (i.e., vicarious experiences) and teacher mobility (i.e., mastery experiences) are related to teacher intercultural self-efficacy. From an ecological systems theory perspective, teacher mobility and professional development constitute so-called proximal processes (i.e. enduring forms of interaction in the immediate environment) that are crucial for development, and whose effects vary depending on the context, for example on factors in micro- (i.e., schools) and macrosystems (i.e., societies, law, etc.). Thus, we further investigate if contextual aspects such as the multicultural climate/policy in a school (microsystem) or country (macrosystem) are related to teacher intercultural self-efficacy, and whether these aspects moderate relations between proximal processes (i.e., intercultural professional development, teacher mobility) and teacher intercultural self-efficacy.

### 1.1. Teacher intercultural self-efficacy

Teacher motivations are key for effective teaching (Baumert & Kunter, 2011; Firestone & Pennell, 1993; Richardson & Watt, 2010; Shulman & Shulman, 2004). Self-efficacy beliefs (Bandura, 1977, 1997) in turn are a central value-related aspect of teachers' motivations (see Daumiller, Stupnisky, & Janke, 2020 for an overview) and have been extensively studied to explain why some teach more effectively and successfully than others (Klassen & Tze, 2014). This concept focuses on the subjective beliefs of a person regarding whether one believes to be able to successfully conduct tasks related to the professional role (e.g., didactical tasks, classroom management; Caprara et al., 2006; Klassen et al., 2009; Klassen & Tze, 2014; Zee & Koomen, 2016).

Theoretically, teachers' self-efficacy beliefs are presumed to be strongly tied to the decisions they make about choosing, investing effort in, and persisting with regard to their teaching activities (Woolfolk-Hoy et al., 2009), which can be expected to lead to a more favorable instructional environment and more beneficial student outcomes. Indeed, teachers' self-efficacy beliefs are related to their teaching performance as evaluated by students (Klassen & Tze, 2014). Prior research primarily construed teacher self-efficacy beliefs with regard to classroom management, motivation, and instruction (Woolfolk-Hoy et al., 2009). However, teachers can experience different levels of self-efficacy depending on the teaching domain and on the types of students taught (Geerlings et al., 2018; Ross et al., 1996; Tschannen-Moran & Hoy, 2001). To teach an increasingly culturally and ethnically diverse student population, teachers face new demands such as developing an understanding of the contributions of different cultural or ethnic groups (Gay, 2002) as well as reducing prejudice and promoting respect among different student groups (Banks, 2015). Therefore, a previously largely neglected aspect of teacher self-efficacy beliefs, their intercultural self-efficacy (Guyton & Wesche, 2005; Siwatu, 2007), is becoming increasingly important.

Teacher intercultural self-efficacy has been conceptualized based on different theoretical concepts such as multicultural teacher education (Guyton & Wesche, 2005) or culturally responsive teaching (Siwatu, 2007; Siwatu et al., 2017). Accordingly, teacher intercultural self-efficacy comprises teachers' confidence to execute a range of tasks, such as reducing prejudice towards people from different cultural or ethnic groups (Guyton & Wesche, 2005), using examples that are familiar to students from diverse cultural

or ethnic backgrounds (Siwatu, 2007), and creating a warm and safe classroom environment that respects all cultures (Siwatu et al., 2017). While most research on intercultural self-efficacy was conducted in the US, recently, teacher intercultural self-efficacy has also been examined in other national contexts like South Korea (Roh, 2015), Germany (Civitillo et al., 2016), Taiwan (Chu, 2011), and Turkey (Kotluk & Kocakaya, 2020).

### 1.2. Sources of intercultural self-efficacy at the individual level

Despite recent advancements in research on teacher intercultural self-efficacy, little is still known about the sources of their intercultural self-efficacy. From a social-cognitive theory perspective, individuals develop self-efficacy by engaging in vicarious experiences (i.e., observation) and mastery experiences (i.e., practice), as well as through verbal persuasion (i.e., verbal input from others, such as colleagues and mentors) and physiological and affective states (i.e., level of arousal attached to performing a certain task) (Bandura, 1997). Drawing on this framework, we investigate two sources of teacher intercultural self-efficacy at the individual level that capture vicarious experiences and mastery experiences, respectively: professional development and teacher mobility.

#### 1.2.1. Professional development

Professional development entails opportunities to closely observe role models and experts on a particular topic (i.e., vicarious experiences). Professional development aims to expand teacher knowledge and challenge teachers' beliefs which might result in changes in teachers' practices and improvements in student learning outcomes (Darling-Hammond et al., 2017). Morris et al. (2017) systematically reviewed the literature on the sources of teaching self-efficacy and found that professional development participation enhances self-efficacy. Many countries worldwide, by recognizing its importance, have made significant investments in their teachers' professional development (Bayar, 2014; Czerniawski, 2013; Fischer et al., 2018; Starkey et al., 2009). Professional development efforts to boost intercultural self-efficacy are generally effective (Parkhouse et al., 2019), though several studies indicate teachers did not grow as much as initially desired (Romijn et al., 2021). Furthermore, existing evidence of the benefits of professional development for intercultural self-efficacy frequently includes small-scale studies, drawing on programs implemented at one single university or with a limited number of in-service teachers (Civitillo et al., 2018; Parkhouse et al., 2019). Although valuable, such evidence makes it hard to inform policy-making in teacher professional development cross-nationally.

A variety of features contribute to the effectiveness of professional development (Avalos, 2011; Kennedy, 2016). Garet et al. (2001) distinguished three characteristics of professional development: the format of the activities (i.e., whether it is a course or a seminar, mentoring, or observation visits to other schools); the duration (i.e., the number of hours that participants spend in the activity); and the content (i.e., the degree to which the activity allows teachers to gain content and pedagogical tools around a certain topic). The content of professional development is considered the most influential feature (Desimone, 2009). Using data from TALIS 2013, Liu and Liao (2019) showed that content of professional development for curriculum and instructional skills had a greater impact on teacher general self-efficacy compared to other features as duration and format. Therefore, in our study we explore the associations between content-focused professional development with an emphasis on teaching in multicultural settings and communicating with people from different cultures (i.e., intercultural professional development) and intercultural self-efficacy.

### 1.2.2. Teacher mobility

International mobility, such as studying or teaching abroad, is assumed to provide pre- and in-service teachers with experiences that enable them to interact more effectively with a diverse student population (Cushner & Mahon, 2002; Walters et al., 2009). Research suggests that international and cross-cultural experiences are indeed related to a range of positive intercultural learning outcomes among pre- and in-service teachers, such as cultural and societal self-awareness and awareness of the role of culture in education (for reviews, see Smolcic & Katunich, 2017; Walters et al., 2009). Besides promoting intercultural awareness, international mobility may also foster teacher intercultural self-efficacy through providing mastery experiences (Bandura, 1997). Studying and teaching abroad entails having to handle new and different situations. For many participants in these programs, it may be the first time that they must rely solely on themselves, find their own housing, travel alone, and navigate their way in a different cultural setting. The experience of successfully facing and overcoming challenges during a stay abroad may increase pre- and in-service teachers' confidence to be able to handle new and unfamiliar situations in the future. Indeed, teachers who taught abroad or were involved in cultural immersion programs (e.g., homestays) reported higher self-efficacy and confidence (Cushner & Mahon, 2002; Trilokekar & Kukar, 2011).

Moreover, teachers who study or teach abroad personally experience cultural variations over an extended time, such as at school, university, in intercultural friendships, or during homestay experiences. Through the experience of successfully acting in situations marked by cultural diversity, teachers may develop confidence to be able to successfully consider the cultural and ethnic diversity of their own student population at home. Teachers who participated in an overseas student teaching experience reported that they could now work with different types of people, introduce their own students to cultural variations, and be sensitive to the needs of children with different backgrounds (Cushner & Mahon, 2002; Mahon & Cushner, 2002). In-service teachers who participated in a short-term study abroad program reported that they could now integrate students' home language and cultural knowledge into classroom instruction and engage with cultural variations to better work with students and families from different cultural or ethnic backgrounds (He, Lundgren, & Pynes, 2017). Whereas a large proportion of studies investigating effects of teacher mobility is qualitative and uses small samples (Smolcic & Katunich, 2017; but see Mo et al., 2021, for an exception), we will investigate whether teacher mobility is positively related to their intercultural self-efficacy drawing on the large scale, cross-national TALIS study.

The specific effects of teacher mobility may depend on the length of a particular stay. Teachers in longer-term programs may have greater opportunities for cultural immersion, and more opportunities to gain mastery experiences. However, research on the effects of length of stay on pre- and in-service teachers' intercultural development is lacking (Smolcic & Katunich, 2017). Research examining effects of the length of studying abroad among broader student populations suggests that students who studied abroad for a longer time are more likely to cultivate lifelong friendships with host-country nationals, to have acquired skill sets that influenced their career paths (Dwyer, 2004), and to feel like they can include diverse perspectives in discussions and assignments and work effectively with others (Coker et al., 2018). Based on these findings, we expect that teachers who spent a longer time abroad (i.e., more than a few months) also show higher intercultural self-efficacy.

### 1.3. Sources of intercultural self-efficacy at the school and country level

Besides these individual experiences, the context that teachers are situated in may be crucial for their intercultural self-efficacy (Knoblauch & Woolfolk Hoy, 2008). Ecological systems theory suggests that human development is affected by factors in different contextual levels, such as microsystems (e.g., schools) and macrosystems (e.g., societal factors) (Bronfenbrenner, 1979, 2005). Along these lines, teacher self-efficacy varies between schools and countries, with the variance across countries typically being even larger than the variance across schools (Fackler & Malmberg, 2016; Gümüş & Bellibaş, 2021; Scherer et al., 2016; Vieluf et al., 2013). Similarly, in a study with 269 early childhood and primary school teachers in England, Italy, the Netherlands, and Poland, teacher intercultural self-efficacy varied across countries (Romijn et al., 2020). We assume that part of this variation across schools and countries may be explained by differences in the multicultural climate or multicultural policies at the school or country level, respectively.

#### 1.3.1. School multicultural climate

Previous research has related the composition of a school to teacher intercultural self-efficacy. Teachers who teach classrooms with a higher proportion of cultural or ethnic minority students feel more efficacious in teaching cultural or ethnic minority students (Geerlings et al., 2018), and show higher intercultural self-efficacy (Romijn et al., 2020). In previous analyses with the TALIS 2018 data, teachers across OECD countries tended to feel more confident in their ability to teach a classroom with students from different cultures when their class included higher shares of students of immigrant descent (OECD, 2019a).

These findings may reflect that teaching diverse classrooms provides opportunities for mastery experiences, but they may also reflect that schools with culturally or ethnically diverse student populations on average have a stronger multicultural climate, and thus a more supportive institutional environment (Schachner, Schwarzenthal, Moffitt, Civitillo, & Juang, 2021). Since a large proportion of outgroup members in and of itself may also induce feelings of threat among ethnic majority members (Blau, 1977; Schmid et al., 2014), it is important to not only consider the composition of a school, but also how this school approaches the cultural and ethnic diversity of its students (Thijs & Verkuyten, 2014).

Through policies and practices, schools may engage with the cultural and ethnic diversity of their student body in different ways, which may have important implications for teacher intercultural self-efficacy. For example, schools may strive to actively acknowledge students' heritage cultures and to encourage students to learn something about their own and others' heritage cultures (multicultural climate), or choose to largely ignore cultural variations (Schachner, 2017). When they teach at a school with a strong multicultural climate, they may have more existing practices and role models to learn from and may thus acquire intercultural self-efficacy through vicarious experiences (i.e., by observing others). Along those lines, teachers in diverse urban schools who perceived that teachers at their schools taught very successfully had higher self-efficacy themselves (Goddard & Goddard, 2001). Thus, we assume that teachers who teach in schools with a stronger multicultural climate have higher intercultural self-efficacy. Since the TALIS dataset only contains a broad measure of school composition (i.e., the share of 1st/2nd generation immigrant students) that does not allow conclusions regarding the actual cultural and ethnic

diversity of the student body, our main research questions do not focus on ethnic composition. However, as previous research found relations between the share of 1st/2nd generation immigrant students and teacher intercultural self-efficacy (OECD, 2019a), we included the share of 1st/2nd generation immigrant students as a control variable in our main analyses.

### 1.3.2. Country multicultural education policies

Analogously to processes taking place at the school level, teachers in countries with a high share of cultural or ethnic minority students or students of immigrant descent may have had more personal experiences in interacting with people with different cultural affiliations. For example, on average, they should be more likely to have friends or neighbors with different cultural or ethnic affiliations, which may provide opportunities for mastery experiences regarding intercultural interactions and increase their intercultural self-efficacy. At the same time, a high perceived proportion of outgroup members, which can be manipulated by politicians and the media, may also invoke feelings of threat (Pettigrew et al., 2010).

Thus, the approach that a country takes to engage with the diversity of its population may be important for whether this diversity is viewed as an opportunity for personal growth or as a threat. Like policies at the school level, policies at the national level may differ with regards to whether they reject, ignore, or value cultural diversity (Guimond et al., 2014). For example, in the educational domain, multicultural education policies may be responsive to the needs of cultural or ethnic minority students and students of immigrant descent, e.g., by supporting teaching about immigrant cultures, or by integrating intercultural education into school curricula (Solano & Huddleston, 2020). If a country promotes multicultural education policies that are highly supportive of the needs of cultural or ethnic minority students and students of immigrant descent, teachers may be more likely to perceive that cultural diversity can be a resource and can be dealt with constructively, which may increase their own intercultural self-efficacy. Therefore, we expect that teachers in countries with strong multicultural educational policies have higher intercultural self-efficacy, controlling for the share of 1st/2nd generation immigrant students at the country level.

### 1.3.3. Contextual aspects as moderators

According to ecological systems theory, contextual factors moderate the relation between proximal processes (e.g., teacher professional development, teacher mobility), and developmental outcomes (Bronfenbrenner, 1979, 2005). Teachers who have undergone intercultural professional development or have studied and taught abroad, and return to their home country and school to see that the institutional environment only provides little structures, resources, or support to teach culturally or ethnically diverse classrooms, may be less likely to develop high intercultural self-efficacy. Along these lines, lack of institutional support is among the most well-documented challenges faced by multicultural educators (Civitillo & Juang, 2020; Gorski & Parekh, 2020). Thus, we expect that intercultural professional development/teacher mobility will be more strongly related to teacher intercultural self-efficacy when multicultural climate/policies are endorsed in the school or national context.

## 2. The present study

In the present work, we seek to illuminate variations in teacher intercultural self-efficacy beliefs by investigating predictor

variables on the individual, school, and country level as well as potential moderators. Whereas research on teachers' general self-efficacy has already examined professional development as a predictor, we focus on one specific dimension of self-efficacy (i.e., intercultural self-efficacy) and a specific type of professional development (i.e., intercultural professional development). Moreover, we include additional predictors that may specifically be relevant for teacher intercultural self-efficacy, such as teacher mobility and the multicultural school climate. Whereas prior research on teacher intercultural professional development, teacher mobility, and intercultural self-efficacy was based on small samples, we drew on a large, cross-national dataset, which allows us to not only examine individual, but also contextual aspects in relation to teacher intercultural self-efficacy. Based on our review of the literature, we formulated the following preregistered hypotheses:

**Fundamental Assumption.** Interindividual differences in teacher intercultural self-efficacy can be attributed partially to differences between schools and countries.

**Hypothesis 1. (H1):** Teachers who participated in professional development regarding cultural diversity, as well as those who stayed abroad, have higher intercultural self-efficacy. Specifically,  
(H1a) teachers who participated in professional development activities related to cultural diversity have higher intercultural self-efficacy than those who did not participate in any professional development activities related to cultural diversity,  
(H1b) teachers who stayed abroad have higher intercultural self-efficacy than those who did not stay abroad, and  
(H1c) teachers who stayed abroad for a longer time (i.e., three or more months vs. less than three months, as it was captured in the TALIS 2018 study) have higher intercultural self-efficacy.

**Hypothesis 2. (H2):** In contexts with a stronger multicultural climate/policy, teachers have higher intercultural self-efficacy. Specifically,  
(H2a) teachers in schools with a stronger multicultural climate have higher intercultural self-efficacy, and  
(H2b) teachers in countries with a stronger multicultural education policy have higher intercultural self-efficacy.

**Hypothesis 3. (H3):** Teachers in contexts with higher support for multiculturalism profit more from intercultural professional development/study abroad. Specifically,  
(H3a) the relations between intercultural professional development/staying abroad and intercultural self-efficacy are stronger among teachers in schools with stronger multicultural climate, and  
(H3b) the relations between intercultural professional development/staying abroad and intercultural self-efficacy are stronger among teachers in countries with a stronger multicultural education policy.<sup>2</sup>

<sup>2</sup> As additional exploratory research questions, we investigated 1) whether the share of first- and second-generation immigrant students at the school and country level moderated the link between professional development/teacher mobility and intercultural self-efficacy, 2) how the purposes of staying abroad (e.g., studying, language learning, teaching, etc.) are differentially related to teacher intercultural self-efficacy, and 3) how the teacher-reported need for training about cultural diversity relates to intercultural self-efficacy. Due to space constraints, results of these exploratory analyses can be found in the supplementary materials S3.

### 3. Method

We answered our research question using the TALIS 2018 dataset (OECD, 2019b) as well as MIPEx 2012 and 2020 indicators (Solano & Huddlestone, 2020). We preregistered our hypotheses and methods prior to investigating the data following the secondary data preregistration template developed by Van den Akker et al. (2021). Preregistration of our hypotheses, as well as the data and code underlying the presented analyses can be found in an open repository (<https://doi.org/10.17605/OSF.IO/5RDMJ>).

#### 3.1. Sample

Following our preregistered procedure, we included all participants who responded YES both to the question related to previous experience with students from different cultures (i.e., “Have you ever taught a classroom with students from different cultures?”), and to the question related to the current school’s student body (i.e., “Does this school include students of more than one cultural or ethnic background?”). Also, we only used cases who made assessments regarding any of the intercultural self-efficacy items. We only considered teachers who worked in lower and upper secondary schools, regardless of the country they worked in. This resulted in a total sample of 91,768 teachers from 11,523 schools and 46 countries (as compared to approx. 260,000 teachers from 15,000 schools and 47 countries in the full TALIS sample).<sup>3</sup> Of these teachers, 60% were male and 40% female, their average age was 42.7 years ( $SD = 3.8$ ).

#### 3.2. Measures

For a full list of items, please see Supplementary Materials S1.

##### 3.2.1. Individual level

**Teacher intercultural self-efficacy beliefs.** To measure intercultural self-efficacy beliefs, we used the respective TALIS scale (OECD, 2019b) that uses the item stem “In teaching a culturally diverse class, to what extent can you do the following?” and then presents five items regarding coping with challenges of a multicultural classroom, adapting teaching to the cultural diversity of students, ensuring that students with and without migration background work together, raising awareness for cultural differences amongst students, and reducing stereotyping amongst students. All items were answered to on a Likert-scale ranging from *not at all* (1) to *a lot* (4); their internal consistency ranged from  $\alpha = 0.74$  to 0.90 across countries. The metric invariance of the intercultural self-efficacy measure across countries was confirmed by the TALIS team for both lower and upper secondary schools (OECD, 2019b, p. 364).

**Teacher intercultural professional development.** To measure teachers’ intercultural professional development, participants read the item stem “Were any of the topics listed below included in your professional development activities during the last 12 months?”, and answered either *no* (0) or *yes* (1) to two items that reflected

<sup>3</sup> We included the following 46 countries for which TALIS data on intercultural self-efficacy was available: Argentina (Buenos Aires), Australia, Austria, Belgium, Brazil, Bulgaria, Canada (Alberta), Chile, China (Shanghai), Chinese Taipei, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Hungary, Israel, Italy, Japan, Kazakhstan, Korea, Latvia, Lithuania, Malta, Mexico, Netherlands, New Zealand, Norway, Portugal, Romania, Saudi Arabia, Singapore, Slovak Republic/Slovakia, Slovenia, South Africa, Spain, Sweden, Turkey, United Arab Emirates, England (United Kingdom), United States, Vietnam. As teacher intercultural self-efficacy was not included in the TALIS questionnaire in Russia, Russia was not included in our analyses.

intercultural competencies, namely “Teaching in a multicultural or multilingual setting” and “Communicating with people from different cultures or countries” (OECD, 2019b). We used the sum score of both items (ranging from 0 to 2) to reflect differences in teachers’ intercultural professional development.

**Teacher mobility.** To measure teacher mobility, teachers were presented with the item stem “Have you ever been abroad for professional purposes in your career as a teacher or during your teacher < education or training->?”, and answered either *no* (0) or *yes* (1) regarding five different possible purposes for staying abroad (e.g., as part of an EU program, by own initiative). Based on that, we created a dichotomous variable representing if a teacher has ever been abroad as part of their teaching education (1) or not (0). Additionally, participants were asked how long they stayed abroad, with answer options being less than three months, three to twelve months, and more than a year. Following our preregistration, we recoded this variable to reflect whether participants stayed abroad for less than three months (0) vs. for three or more months (1).

**Control variables.** At the individual level, we controlled for teachers’ gender (0 = *female*, 1 = *male*), age, and years of teaching experience.

##### 3.2.2. School level

**Multicultural climate.** To assess the school multicultural climate, we used four items (OECD, 2019b). Following the item stem “In this school, are the following practices in relation to diversity implemented?”, participants assessed whether (1) or not (0) the following practices were implemented: supporting activities or organizations that encourage students’ expression of diverse ethnic and cultural identities (e.g. artistic groups), organizing multicultural events (e.g. cultural diversity day), teaching students how to deal with ethnic and cultural discrimination, and adopting teaching and learning practices that integrate global issues throughout the curriculum. We combined these items by creating a sum score (ranging from 0 to 4) to reflect the amount of multicultural activities present in a certain school.

**Control variable.** We controlled for the average proportion of first- or second-generation immigrant students per school. In the TALIS survey, teachers assessed the percentage of students who are first- or second-generation immigrants in their classroom (none; 1%–10%; 11%–30%; 31%–60%; more than 60%). We averaged these teacher assessments on the school level by taking the theoretical mean values for each category (e.g., 5.5% for the 1%–10% category).

##### 3.2.3. Country level

**Multicultural education policy.** To obtain country-level indices on multicultural education policy, we used the education sub-dimension of the Migrant Integration Policy Index (MIPEX) from 2020 (Solano & Huddlestone, 2020). The MIPEX benchmarks current laws and policies on migrant integration in a range of countries. The education subdimension captures to what degree the education system is responsive to the needs of children of immigrants. This subdimension is based on scores capturing access (e.g., access to pre-primary education), targeting needs (e.g., provision of support to learn language of instruction), new opportunities (e.g., support for teaching immigrant languages and cultures), and intercultural education for all (e.g., school curriculum reflecting diversity). For each of these topics a maximum of 3 points is awarded when policies reflect the highest standards of equal treatment. These points are then averaged and converted into a 0, 50, 100 scale (with 100% being the top score) to create the index that we used for our analyses. MIPEX data on multicultural education policy was available for 39 of the countries that we included from the TALIS 2018 study.

**Control Variable.** We controlled for the share of first- and second-generation immigrant students at the country level. We drew on the Migrant Integration Policy Index (MIPEX) dataset to obtain data on the share of first- and second-generation immigrant students and merged this data with the TALIS data on the country level. We used the latest data on the share of first- and second-generation immigrant students that were published in 2012. MIPEX 2012 data on the share of first- and second-generation immigrant students was available for 26 of the countries that we included from the TALIS study.

### 3.3. Data analysis

To account for the nested data structure — Level 1 teachers nested in Level 2 schools, and schools nested in Level 3 countries — we ran multilevel models in Mplus 8.1 (Muthén & Muthen, 2018). As TALIS 2018 used a stratified sampling approach, we accounted for the unequal selection probability and response rate (Asparouhov, 2005) by including the teacher-level weight into our analyses, which is the final weight after adjusting teacher base weight, response rate, and school-level weight (OECD, 2019b). Given the complexity of our models on the country level which threatens to increase the non-convergence rate (Gagne & Hancock, 2006; Valluzzi et al., 2003), we broke model estimation into subparts of sequential estimation (as recommended by Croon, 2002), first estimating the factor score of intercultural self-efficacy (measurement part), and next the multi-level models to answer our hypotheses.

To analyze the amount of variance of self-efficacy that can be attributed to the teacher, school, and country level, we first estimated an unconditional means model that did not include any predictors. Second, we included age, gender, teaching experience, and the share of first- and second-generation immigrant students as controls and, in a third step, professional development and teacher mobility as predictors on the teacher level (H1a, H1b), and multicultural climate/policy as predictors on the school and country level (H2a, H2b). We explicitly specified the variance of all predictors to make distributional assumptions about them in order to be able to use cases with partially missing data. As a robustness check, we conducted the same analyses again without specifying the variances of the predictors, resulting in listwise deletion and thus a much smaller dataset ( $N$  (teachers) = 23,003,  $N$  (schools) = 2,567,  $N$  (countries) = 15). These results are reported in [Supplementary Materials S4](#). Finally, we allowed the effects of intercultural professional development and mobility in the aforementioned model to vary between the different teachers. We then regressed these random slopes on the school- and country-level predictors to investigate H3.

### 3.4. Deviations from preregistration

In our initial preregistration, investigating relations between the share of first- and second-generation immigrant students at the school and country level and teachers' intercultural self-efficacy was included as an exploratory research question. Due to conceptual limitations of this variable (e.g., not being indicative of actual cultural or ethnic diversity), we turned this variable merely into a control variable. Whereas we had initially included a hypothesis regarding variations of teacher intercultural self-efficacy across individuals, schools, and countries, we now term this expectation merely a “fundamental assumption.”

### 3.5. Missing data

There was between 0.1% and 25.4% missing data for the variables measured on the teacher level, 3.2% and 8.0% missing data for the

variables measured on the school level, and 15.2% and 43.5% missing data for the variables measured on the country level. These fairly high missing data proportions are typical for the TALIS study as certain scales were not administered in all national questionnaires, and some participating schools or teachers could not be reached. Furthermore, the amount of missing data on the country level is not systematic either, as this was due to the MIPEX index not being available for all countries included in the TALIS study. All missing data were handled using the Full information maximum likelihood (FIML) procedure in Mplus (Olinsky et al., 2003).

## 4. Results

### 4.1. Results of preliminary analyses

On average, teacher-reported intercultural self-efficacy was above the meanpoint of the respective scale ( $M = 2.80$ ). However, individuals differed considerably in their intercultural self-efficacy ( $SD = 0.49$ ) (see [Table 1](#)). For descriptives for each country separately, please see [Supplemental Materials S2](#).

### 4.2. Variation in intercultural self-efficacy

Results of the unconditional means three-level model showed that there were substantial amounts of variability on the school level as well as the country level. To test whether this variability was meaningful, we calculated intra-class correlations (ICC1) and their confidence intervals. The 95% confidence intervals of the ICC1s were significantly different from zero,  $ICC1(\text{School}) = 0.046$ , 95% CI = [0.041; 0.050];  $ICC1(\text{Country}) = 0.157$ , 95% CI = [0.088; 0.208]. We visualize the differences in intercultural self-efficacy across the considered countries in [Fig. 1](#).

### 4.3. Prediction of differences in intercultural self-efficacy

To explain these differences in intercultural self-efficacy on the within level, school and country level, we first added control variables and then the respective predictors into the model (see [Table 2](#)). On the teacher level, males showed higher intercultural self-efficacy, and on the country level, the share of 1st/2nd generation immigrant students positively predicted teachers' intercultural self-efficacy. Variability on the teacher level was positively predicted by teacher mobility as well as intercultural professional development (supporting H1a and H1b), but not by mobility for three or more months (not supporting H1c). Even though the effect sizes were small, overall the predictors on the teacher level explained 2.9% of additional variance above and beyond the variance explained by control variables. On the school level, multicultural climate was positively associated with intercultural self-efficacy (supporting H2a), but the effect size was small and the proportion of explained variance barely increased (by 0.1%). On the country level, multicultural education policy was negatively related to intercultural self-efficacy (not supporting H2b).<sup>4</sup> The effect size was moderate and the proportion of explained variance increased by 37% compared to the model that only contained the control variables.

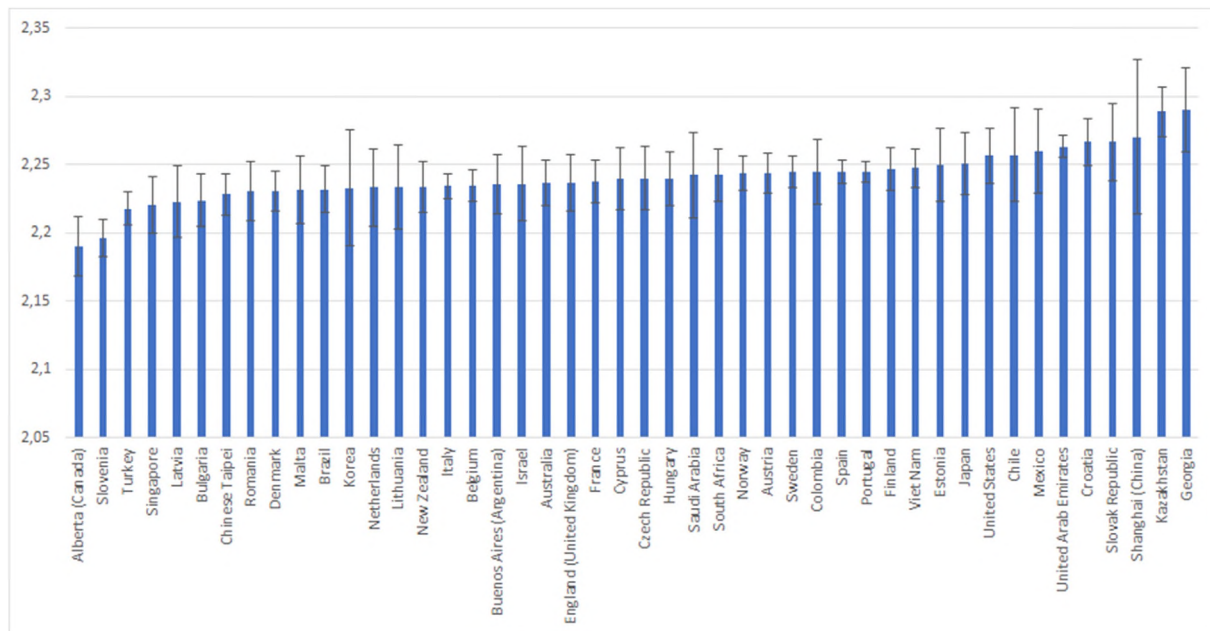
In the additional analyses in which only cases without missing

<sup>4</sup> As the share of first-/second-generation students at the country level was highly correlated with multicultural education policy, collinearity may have affected the results. Therefore, we ran additional analyses examining the effects of multicultural education policy without controlling for the proportion of first-/second-generation students. This did not change the results, as multicultural education policy still significantly negatively predicted intercultural self-efficacy.

**Table 1**  
Descriptive results and bivariate statistics (weighted).

	<i>M</i>	<i>SD</i>	Min	Max	Skew	1	2	3	4	5	6	7	8
<b>Teacher level</b>													
1 Intercultural self-efficacy	2.24	0.39	1	4	-0.27								
2 Mobility	0.32	0.47	0	1	0.79	<b>.04</b>							
3 Abroad ≥3 months	0.34	0.48	0	1	0.66	<b>.06</b>	–						
4 Intercultural professional development	0.69	0.83	0	2	0.63	<b>.15</b>	<b>.01</b>	<b>.06</b>					
<b>School level</b>													
5 Share of 1st/2nd generation immigrant students	8.84	14.50	0	80	3.07	– <b>.03</b>	<b>.15</b>	– <b>.04</b>	– <b>.05</b>				
6 Multicultural climate	3.14	1.06	0	4	–1.13	<b>.04</b>	<b>.02</b>	<b>.13</b>	<b>.18</b>	<b>.09</b>			
<b>Country level</b>													
7 Share of 1st/2nd generation immigrant students	15.91	7.03	0.2	26.4	0.75	.04	–.02	.45	–.08	<b>.73</b>	.23		
8 Multicultural education policy	55.09	26.93	0	93	–0.31	–.16	.26	–.12	–.22	<b>.48</b>	–.06	– <b>.58</b>	
<b>Control variables</b>													
Teacher gender (0 = female, 1 = male)	.65	0.48	0	1	–0.62	<b>.07</b>	– <b>.03</b>	– <b>.06</b>	<b>.03</b>	<b>.19</b>	<b>.09</b>	–.33	–.09
Teacher age	43.53	10.67	<25 <sup>a</sup>	≥60 <sup>a</sup>	0.16	– <b>.02</b>	<b>.14</b>	– <b>.06</b>	– <b>.01</b>	<b>.18</b>	– <b>.04</b>	– <b>.49</b>	–.02
Teacher experience	16.69	9.90	0	78	0.45	– <b>.01</b>	<b>.13</b>	<b>.08</b>	– <b>.04</b>	<b>.15</b>	– <b>.03</b>	– <b>.46</b>	–.08

Note. *N* (within) = 91,768, *N* (school) = 11,523, *N* (country) = 46. Correlations within 1–4 and between 1 and 4 and control variables are reported on the teacher level, correlations within 5–6 and between 5–6 and 1–3 and the control variables are reported on the school level, and all remaining correlations are on the country level. All statistically significant correlations are boldfaced ( $p < .05$ ). <sup>a</sup>In the TALIS dataset, the teachers' age was reported in six age groups (under 25, 25–29, 30–39, 40–49, 50–59, 60 and above).



**Fig. 1.** Visualization of mean levels and 95% confidence intervals of teacher intercultural self-efficacy across the different countries. Confidence intervals not overlapping between two countries can be interpreted as an indication for differences between these countries.

values were retained in the model (Table S3), the effects of multicultural climate on the school level and of multicultural education policy on the country level became insignificant, but the effect of multicultural climate on the school level only closely missed significance ( $\beta = 0.12, p = .065$ ). The non-significant relation on the country level is likely a function of the drastically reduced sample size on this level ( $N = 15$ ).

Subsequently, we tested whether the positive effects of teacher mobility and teacher intercultural professional development on self-efficacy beliefs systematically varied as a function of differences in school multicultural climate or country multicultural education policy. Results of the random slopes analyses did not provide many indications to support this claim: the slopes of teacher mobility and teacher intercultural professional development exhibited only very little variance between the different schools (teacher mobility:  $Var = 0.002, p = .489$ ; mobility for more than three months:  $Var = 0.013, p = .088$ ; professional development:  $Var = 0.007, p < .001$ ) and countries (teacher mobility:  $Var =$

$0.001, p = .254$ ; mobility for more than three months:  $Var = 0.005, p = .018$ ; professional development:  $Var = 0.001, p = .140$ ). Not supporting H3, we found that all linkages between these slopes with school multicultural climate or country multicultural education policy were non-significant (all  $\beta \leq 0.01, p > .10$ ).

## 5. Discussion

In times of increasing migration and globalization, teachers need to develop intercultural self-efficacy to help them teach an increasingly diverse student body. To expand previous knowledge regarding how teachers may develop this self-efficacy, we drew on a large-scale dataset of lower and upper secondary school teachers in 46 countries and explored predictors of intercultural self-efficacy at the individual (i.e., intercultural professional development, teacher mobility), school (i.e., multicultural climate) and country level (i.e., multicultural education policy). Our findings show that both individual experiences as well as contextual characteristics are

**Table 2**  
Results of the three-level model investigating predictors of intercultural self-efficacy.

	Controls			Controls and predictors		
	$\beta$	SE	p	$\beta$	SE	p
Within Level (Level 1)						
Controls						
Teacher gender (0 = female, 1 = male)	.03	.01	<.001	.03	.01	<.001
Teacher age	.02	.01	.04	.02	.01	.10
Teacher experience	-.01	.02	.40	-.01	.01	.37
Predictors						
Mobility				.02	.01	.01
Mobility $\geq 3$ months				.03	.02	.09
Intercultural professional development				.17	.01	<.001
School Level (Level 2)						
Controls						
Share of 1st/2nd generation immigrant students	.18	.10	.06	.14	.09	.12
Predictors						
Multicultural climate				.12	.03	<.001
Country Level (Level 3)						
Controls						
Share of 1st/2nd generation immigrant students	.26	.17	.14	.45	.11	<.001
Predictors						
Multicultural education policy				-.48	.12	<.001
Explained Variance						
R <sup>2</sup> (within level)	.01	.01	.05	.33	.03	<.001
R <sup>2</sup> (school level)	.32	.34	.36	.33	.28	.24
R <sup>2</sup> (country level)	.68	.91	.46	.436	.170	.01

Note. N (within) = 91,768, N (school) = 11,523, N (country) = 46. The countries included in the analysis are the same ones listed in footnote 3. Presented are standardized regression weights with their standard errors and two-tailed p values.

associated with teacher intercultural self-efficacy, which is in line with socio-cognitive theory (Bandura, 1997) and ecological frameworks (Bronfenbrenner, 1979, 2005). The findings also give rise to new questions for future research, in particular regarding the exact learning conditions that may contribute to intercultural self-efficacy as well as potential explanations for country-level variations in intercultural self-efficacy.

### 5.1. Intercultural self-efficacy varies across individuals, schools, and countries

We found that teacher intercultural self-efficacy varied significantly across schools and countries, with the variation across countries larger than the one across schools. This is in line with other large-scale research on school-level and country-level variations in general teacher self-efficacy (Fackler & Malmberg, 2016; Vieluf et al., 2013) and expands these findings to the construct of intercultural self-efficacy. Our findings support the results of a recent four-country study with early childhood and primary school teachers that also found variation in intercultural self-efficacy across countries (Romijn et al., 2020), but demonstrate these country-level variations with secondary school teachers and in a larger dataset. The finding that teacher intercultural self-efficacy varies across individuals, schools, and countries raises the question which factors may contribute to these variations in intercultural self-efficacy. Therefore, we continued to examine potential predictors of this variation at the individual, school, and country level.

### 5.2. Individual professional experiences and teacher intercultural self-efficacy

We found that intercultural professional development and teacher mobility were both positively associated with teacher intercultural self-efficacy, supporting Hypotheses 1a and 1b, even though the effect sizes were small. Thus, teachers who engaged in

professional development regarding teaching in a multicultural or multilingual setting or regarding communicating with people from different cultures and countries, and teachers who have been abroad for professional purposes during their career as a teacher or during their teacher training showed higher intercultural self-efficacy. From a social-cognitive theory perspective (Bandura, 1997) these findings suggest that professional development and teacher mobility may provide opportunities for observation (i.e., vicarious experiences) and practice (i.e., mastery experiences) which are two of the central learning processes through which individuals develop self-efficacy. From an ecological systems perspective, teacher mobility and intercultural professional development may constitute proximal processes (i.e., enduring forms of interaction in the immediate environment) that drive development (Bronfenbrenner, 2005).

Our results regarding associations between professional development and teacher intercultural self-efficacy mirror findings regarding associations between professional development and general teacher self-efficacy (Morris et al., 2017), and expand these to the construct of intercultural self-efficacy. Whereas previous studies have provided preliminary evidence that professional development may also promote intercultural self-efficacy (Parkhouse et al., 2019; Romijn et al., 2021), most of this research has been based on small-scale studies, drawing on programs implemented at single universities. In contrast, we could show that intercultural professional development is associated with teacher intercultural self-efficacy across 46 countries.

Similar as for professional development, our finding that teacher mobility is associated with teacher intercultural self-efficacy replicates findings from qualitative and small-scale studies (for an overview, see Smolcic & Katunich, 2017) using a large-scale, cross-national dataset. The results provide further support for the assumption that studying or working abroad may indeed provide teachers with mastery experiences (Bandura, 1997), for example when teachers experience successfully handling new and different situations or engaging with cultural variations.

However, we did not find that staying abroad for three or more months resulted in higher intercultural self-efficacy than staying abroad for less than three months (not supporting Hypothesis 1c). Potentially, staying abroad for three or a few more months may still be too short of a time period to have extensive opportunities for mastery experiences, i.e., by forming long-lasting friendships with host-country nationals (Dwyer, 2004).

### 5.3. Contextual aspects and teacher intercultural self-efficacy: multicultural climate and policies

Based on ecological systems perspectives, besides proximal processes, contextual factors are crucial for development, and may moderate associations between proximal processes and developmental outcomes (Bronfenbrenner, 2005). Thus, we examined how factors in microsystems (i.e., schools) and macrosystems (i.e., societies) are related to teacher intercultural self-efficacy, and whether they act as moderators of relations between individual experiences and teacher intercultural self-efficacy. We found that the multicultural climate at the school level was positively associated with teacher intercultural self-efficacy (supporting Hypothesis 2a), even though the effect size was small. Multicultural education policies at the country level were negatively associated with teacher intercultural self-efficacy (not supporting Hypothesis 2 b). Thus, in schools that support activities that encourage students' expressions of diverse ethnic and cultural identities, organize multicultural events, teach students how to deal with ethnic discrimination, and integrate global issues into the curriculum, teachers on average show higher intercultural self-efficacy. Our results suggest that not just whether a school is culturally or ethnically diverse, but also how a school deals with this diversity, i.e., the diversity climate, is relevant for teacher intercultural self-efficacy. In schools with a strong multicultural climate, teachers may have more opportunities to learn from existing practices and to observe role models who successfully engage with the cultural or ethnic diversity of the student body, i.e., to engage in vicarious experiences, which may eventually contribute to their intercultural self-efficacy. This finding is in line with previous research at the student level that showed that students in classrooms with a stronger multicultural climate self-reported higher intercultural competence (Schwarzenthal, Schachner, Juang, & van de Vijver, 2020).

The negative association between multicultural education policy and intercultural self-efficacy on the country level was unexpected. This association contradicted our hypothesis and the results showed not to be stable in our robustness checks using listwise deletion. This may, however, also be due to reduced power, as the analyses using listwise deletion only comprised 15 countries. Overall though, we warrant caution in interpreting this effect. Future research should attempt to replicate and follow up on this finding. Given that this research comes to a similar result, there are several potential explanations for this finding. First, multicultural education policies formulated at the country level may be differentially implemented in different regions and in different schools. Second, in countries with strong multicultural education policies, expectations for what is required of teachers to constructively engage with the cultural or ethnic diversity of their student body may be much higher (e.g., requiring more knowledge, experiences, and skills) than in countries with weak multicultural education policies. Teachers who compare themselves to these higher expectations may experience lower intercultural self-efficacy (i.e., little-fish-big-pond effect, Marsh & Hau, 2003).

The share of first- and second-generation immigrant students at the country level but not at the school level was positively associated with teacher intercultural self-efficacy. This finding suggests that

overall, a large proportion of first- or second-generation immigrant students does not (only) induce feelings of threat (Schmid et al., 2014), but may rather provide opportunities for teachers to gain experiences regarding working with diverse student groups, i.e., to gain mastery experiences, which may, in turn, promote their intercultural self-efficacy.

Finally, we did not observe any significant interaction effects between individual experiences and multicultural climate/policy, not supporting Hypothesis 3. This finding does not support the idea that contextual factors moderate the impact of proximal processes (Bronfenbrenner, 2005). Even though lack of institutional support is among the most well-documented challenges by multicultural educators (Civitillo & Juang, 2020; Gorski & Parekh, 2020), it does not seem to prevent them from developing intercultural self-efficacy when they have the opportunity to engage in individual learning experiences, such as intercultural professional development. The intercultural self-efficacy items included in TALIS 2018 mainly refer to teachers' intercultural self-efficacy regarding concrete classroom practices (e.g., reducing ethnic stereotyping among students), which may be more easily implemented even in the absence of institutional support. Potentially, teachers' intercultural self-efficacy regarding institutional- or structural-level changes (e.g., initiating programs to support students' heritage languages in a certain school), which was not captured in this study, would be more strongly affected by a school's multicultural climate or a country's multicultural education policy. However, the lack of significant moderation effects at the country level may also be due to the low sample size at this level.

### 5.4. Limitations and suggestions for future research

Our study has some limitations. Due to the cross-sectional nature of the TALIS dataset, we cannot make any claims about causal relations, and cannot rule out that selection effects may have impacted the results. Teachers who participate in intercultural professional development and who decide to work or study abroad may share certain characteristics, such as having higher intercultural self-efficacy from the start. Some studies found selection effects with regards to participation in professional development or study abroad programs (Hübner et al., 2021; Zimmermann et al., 2020), while others did not (Petersdotter et al., 2017). Based on theoretical frameworks (Bandura, 1997; Bronfenbrenner, 2005), we had argued that teacher experiences may impact their intercultural self-efficacy, but to some extent, the associations may be bidirectional.

In our cross-national analysis, the sample sizes varied substantially between countries. While this should not substantially affect parameter estimates and standard errors at the individual teacher and school level (see simulation studies on imbalanced samples in multilevel analyses: e.g., Eßer et al., 2021; Milliren et al., 2018), differences in reliability estimates at the country level are possible. This additionally speaks to our hesitancy of not over-interpreting the results on the country level. Moreover, future research may consider analyzing the entire sample of teachers surveyed in the TALIS study, not just lower and upper secondary school teachers and teachers who had experience working with students with different cultural backgrounds. This would also allow comparing teachers from different schools types (primary vs. secondary) and teachers with and without previous experience working with students with different cultural backgrounds.

Since we based our analyses on an existing dataset that only contained rather broad measures of participation in professional development and teacher mobility, we could not delve deeply into the exact characteristics of these experiences. Whereas the content of professional development has been considered to be its most influential feature (Desimone, 2009), the format and duration may

also play a role (Garet et al., 2001). Different formats, such as courses, mentoring, or observation visits, may entail differential opportunities for experiential learning, which is particularly relevant for changing teachers' beliefs about cultural diversity (Civitillo, Juang, & Schachner, 2018). Thus, future research should examine how the content, format, and duration of professional development are associated with teacher intercultural self-efficacy. Moreover, future research should not only investigate intercultural professional development experienced during the past 12 months, but include larger timespans. With regards to teacher mobility, future research should incorporate more detailed measures of the length of time spent abroad and set these in relation to teachers' intercultural self-efficacy. In exploratory analyses, we were able to initially investigate the differential impact of different types of visits abroad (see Supplemental Materials S3). We found that going abroad for teaching and learning of other subject areas was significantly associated with intercultural self-efficacy, but accompanying visiting students and establishing contact with schools was not. Potentially, the former two activities comprise more intense and long-lasting contacts with host-nationals than the latter two. Future research should delve more deeply into different types of activities during teacher mobility and their relations to intercultural self-efficacy.

Since we only captured participation in intercultural learning activities quantitatively, we do not know to what degree and how teachers were encouraged to reflect on these experiences. According to Bandura's (1997) socio-cognitive theory, as well as research on teacher mobility (Cushner & Chang, 2015), learning experiences only enhance self-efficacy when they are cognitively processed and actively reflected upon. Reflection of intercultural activities is also crucial to ensure that these do not result in essentialism and stereotypical ideas about "other" cultures. To prevent stereotyping, teachers should be encouraged to reflect on their own culture as well as on how differences between groups have been created by people in power to rationalize inequities (Smolcic & Katunich, 2017). In addition, teachers should learn to reflect on structures that ensure differential opportunities for their students based on cultural background, ethnicity, or race, and, in particular during international exchanges, on the complexities of postcolonialism (Major & Santoro, 2016; Smolcic & Katunich, 2017). Thus, future research should look more deeply into how different learning activities encourage teachers to critically reflect on the complexities of intercultural environments, and how this is associated with their intercultural self-efficacy.

Mastery experiences (i.e., through teacher mobility) and vicarious experiences (i.e., through intercultural professional development) are only two out of four potential sources of self-efficacy described in Bandura's socio-cognitive theory (1977; 1997). Whereas measures of verbal persuasion and physiological and affective states were not included in the TALIS 2018 study, future research should examine how these may be related to teachers' intercultural self-efficacy.

Intercultural self-efficacy is by its nature a self-reported construct, and does not necessarily reflect what teachers actually do in the classroom and how this is perceived by their students. In many contexts, the majority of teachers belong to the cultural or ethnic majority, and tend to perceive the classroom environment differently than cultural or ethnic minority students (Civitillo et al., 2017). In a study examining multicultural teacher educators, white participants had a higher sense of feeling qualified to teach multicultural education courses than African American participants (Gorski et al., 2012). Thus, future research should couple measures of self-reported intercultural self-efficacy with observational methods, as well as with teaching evaluations by cultural and ethnic majority and minority students.

Last but not least, future research should try to delve more deeply into contextual factors that may be important for teacher intercultural self-efficacy. As the proportion of first- and second-generation immigrants at the school or country level does not allow for detailed insights into actual cultural and ethnic diversity, future research should assess cultural and ethnic affiliations in more detail, preferably using self-identification measures, to be able to investigate effects of school or country composition. Moreover, additional aspects such as teacher collaborative practices may play a role of teacher intercultural self-efficacy at the school level (Duyar et al., 2013). Future research should also identify additional potential predictors of intercultural self-efficacy at the country-level, as the predictors included in our study did not robustly predict intercultural self-efficacy.

### 5.5. Conclusions and implications

Our study contributes to the literature in several ways: First, through combining insights from socio-cognitive theory and ecological systems theory, we could show that both individual as well as contextual factors are important for teachers' intercultural self-efficacy. Second, whereas previous research on teacher intercultural self-efficacy has often been limited to individual classrooms or schools, we drew on a large-scale dataset comprising 91,768 teachers from 11,523 schools and 46 countries. This allowed us to show that teacher intercultural self-efficacy varies significantly across schools and across countries, that across a large range of countries, intercultural professional development programs and teacher mobility experiences are on average related to intercultural self-efficacy, and that predictors at the school and (though not robustly) at the country level are related to teachers' intercultural self-efficacy. Third, our study adds to the broader field of self-efficacy research by demonstrating that predictors that are not typically included in research on other types of self-efficacy (i.e., teacher mobility, multicultural school climate) are important for the specific type of self-efficacy that we were interested in, i.e., intercultural self-efficacy. Thus, different factors may be relevant for different types of self-efficacy.

From an applied perspective, our results suggest that policy efforts to promote teacher intercultural self-efficacy need to target multiple levels: First, countries and schools should invest in opportunities for professional development with a specific focus on teaching in multicultural environments and engaging with people with different cultural affiliations. Whereas countries worldwide have made significant investments in their teachers' professional development (Bayar, 2014; Czerniawski, 2013; Fischer et al., 2018; Starkey et al., 2009), teaching in multicultural and multilingual settings is still the third highest area in need of professional development reported by teachers (OECD, 2019a). Thus, promoting intercultural professional development can be considered as crucial.

Second, as teacher mobility shows potential to promote teacher intercultural self-efficacy, it is concerning that there are so many barriers for pre- and in-service teachers to go abroad. For instance, many education students face problems with recognizing credits and academic achievements obtained abroad and lack of reward of international experience for teachers (Cushner & Mahon, 2002; Walters et al., 2009; Woisch & Willige, 2015). Across OECD countries, the percentage of students who have been abroad as part of their teacher education or training ranges from 1% (in Vietnam) to 37% (in the Netherlands) (OECD, 2019a). The percentages are comparatively high in countries belonging to the European Union, which may be due to political efforts to promote internationalization among both pre- and in-service teachers in Europe, such as through the Erasmus+ program (European Union, 2019), and the

socioeconomic resources available to finance study abroad programs. Thus, policy efforts should aim to remove the structural barriers for pre- and in-service teachers to study or work abroad. Particularly in times of a global pandemic and travel restrictions, teacher educators and policymakers should also explore alternative ways for teachers to gain intercultural experiences, for example through offering opportunities for interacting with people with different cultural affiliations in their own home countries, or by offering opportunities for virtual intercultural interactions.

Third, besides promoting individual teachers' intercultural learning, approaches that target whole schools are needed. For example, schools should be supported in their organizational development efforts to create a multicultural school climate that is welcoming to students with diverse backgrounds and affiliations (Banks, 2015; Gay, 2015; Schachner, 2017).

To fulfill the needs of an increasingly diverse student body, it is not only crucial to promote teachers' intercultural self-efficacy, but also to diversify the teaching workforce itself. In many countries, most teachers belong to the cultural or ethnic majority (i.e., Civitillo & Juang, 2020; Taie & Goldring, 2020) and thus do not reflect the increasingly culturally and ethnically diverse population. Cultural or ethnic minority teachers tend to show more positive perceptions of their co-ethnic students' behaviors and academic abilities than cultural or ethnic majority teachers and may contribute to the academic success of cultural or ethnic minority students (Redding, 2019). Therefore, increasing their representation and retention in schools is crucial for reaping the benefits of cultural and ethnic diversity in education.

## Funding

This work (i.e., the collaboration for writing the paper) was supported by the College for Interdisciplinary Educational Research (CIDER).

## Approval

All authors have approved the final version of the article.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data were drawn from TALIS 2018 (OECD, 2019b) and MIPEx 2012 and 2020 (Solano & Huddleston, 2020). The analytic code is available in an open OSF repository <https://doi.org/10.17605/OSF.IO/5RDMJ>.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tate.2023.104070>.

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