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Research paper

Stays abroad of pre-service teachers and their relation to teachers' beliefs about cultural diversity in classrooms

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HIGHLIGHTS

- One fifth of (student) teachers stayed abroad during their studies.
- Studying a language and agreeableness are positively related to stays abroad.
- Stays abroad are related to multicultural, egalitarian, and self-efficacy beliefs.
- This relationship remains stable when controlling for agreeableness and openness to new experience.

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ABSTRACT

A stay abroad is expected to help teachers to improve their intercultural competence and, thus, their teaching of multicultural classes. Based on a sample of $n = 1860$ teachers at different stages of their early career in Germany, the study analyzes the different forms of stays abroad during teacher education and their relation to cultural beliefs and self-efficacy. The analyses show that sociodemographic and individual characteristics such as gender, academic and migration background are not significantly associated with the probability of going abroad. Overall, significant relations were demonstrated between stays abroad and multicultural and egalitarian beliefs and self-efficacy in teaching multicultural classes.

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1. Introduction

To prepare teachers for teaching in diverse classrooms and to stimulate the development of cultural competencies, there have been numerous calls for the internationalization of teacher education programs (see e.g., Falkenhagen et al., 2019; Kissock & Richardson, 2010). In Germany, for example, a growing number of teacher education programs have developed a clear focus on international and intercultural experiences in recent years (e.g., DAAD, 2021). It is assumed that relevant experiences abroad

positively change beliefs and the manner in which heterogeneity is handled in the classroom (e.g., Baerdorf, 2015).

In the context of globalization, a stay abroad has a high potential as teachers are constantly confronted with the need to reflect on their approach to heterogeneity, pluralism, and diversity. Cultural competence, however, is not simply acquired and never lost again. Rather, it can be described as continuous reflection on one's own beliefs, knowledge, power structures, and privileges (e.g., Costa, Kühn, Timm, & Franken, 2018; Gay, 2000; Howard, 2003; Kahn et al., 2014). It has been acknowledged that teachers' beliefs, awareness, and knowledge about diversity and cultural education are of particular importance for teaching heterogeneous classes (e.g., Banks, 2001; Diller & Moule, 2005; Fugate et al., 2021; Gay, 2000; Ladson-Billings, 2021).

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Given the fundamental importance of cultural competence and beliefs for teachers and the extensive efforts that have been undertaken to positively influence them through the internationalization of teacher education, it is surprising that little is known about the interplay between these efforts and the development of cultural competence. The effects of the international mobility of pre-service and in-service teachers have so far mainly been studied in the United States; research in the European context is scarce (Jäger & Keßler, 2018). Furthermore these studies have mainly focused on evaluating individual internationalization programs, which does not allow a conclusion about the effectiveness of stays abroad as a whole.

This paper considers the relation between teachers' beliefs about cultural diversity in classrooms¹ and their international experiences in a broader sense. Rather than looking at a specific internationalization program, we examine the experience abroad of pre-service teachers (n = 1860) from different universities across Germany. For this purpose, we use data from a Germany-wide representative survey of students conducted as part of the National Educational Panel Study (NEPS). Our approach offers initial insights into the complex interplay between experience abroad and the development of cultural competence. We ask teachers to report whether they have stayed abroad during their teacher education program at university and investigate whether the beliefs of pre-service and in-service teachers who have and have not stayed abroad differ. Furthermore, we investigate the robustness of the inter-group difference by including different variables in our structural model.

1.1. Stays abroad in higher education

Many different programs exist that encourage students in higher education to study at a different university abroad for a semester. This is not surprising as fostering the international mobility of students is a priority of European higher education policy (Ferencz & Wächter, 2012). In 2009, the Leuven Conference of the European Ministers highlighted the individual benefits of studying abroad for students (Ministerial Conference, 2009; 2012) and set the target that at least 20% of graduates of a European university go abroad for studies or internships. Germany and Austria established even higher targets, aiming at half of graduates experiencing study-related stays abroad (Teichler et al., 2011). For Germany, recent official numbers estimated that about 30% of students had acquired experience abroad during their studies (DAAD & DZHW, 2019), an increase compared to previous years (DAAD & DZHW, 2014;).

The decision to incorporate a stay abroad into university studies is dependent on several sociodemographic characteristics (see Netz et al., 2020). Students who are female (e.g., Cordua & Netz, 2022; Salisbury et al., 2010; Van Mol, 2021), young (e.g., Messer & Wolter, 2007; Netz, 2015), and have no migration background (e.g., Lörz et al., 2016; Netz & Sarcletti, 2021) are more likely to include a stay abroad in their studies. It has been shown that students from a privileged socioeconomic and educational background participate more often in study abroad programs (e.g., Lörz et al., 2016; Salisbury et al., 2010). The high financial costs of studying abroad are an obstacle that prevents some students from leaving their home country (Lörz et al., 2016; Netz, 2015). Furthermore, it seems that personal dispositions are related to the likelihood that students are internationally mobile. Personality traits such as

openness to new experience and agreeableness have been consistently found to be related to studying abroad (e.g., Bakalis & Joiner, 2004; Zimmermann & Neyer, 2013). The international mobility of students also varies depending on the field of studies. Arts and humanities students are most likely to go abroad, while pre-service teachers are less likely to neither plan a study abroad nor take part in a study program abroad (Netz, 2015).

Many studies have investigated the effect of experiences abroad for students (e.g., Chieffo & Griffiths, 2004; DeGraaf et al., 2013; Kitsantas, 2004). Most of them assume a positive effect of international experiences and investigate the benefits of specific programs. The strongest individual effects are related to personality development as well as to the development linguistic competences and intercultural sensitivity (e.g., Chieffo & Griffiths, 2004; Engel et al., 2009; Janson et al., 2009; Kehm, 2005; Leutwyler, 2014).

1.2. Stays abroad in teacher education

Although pre-service teachers are less likely to go abroad, international experience is particularly relevant for teachers in view of cultural heterogeneity in classrooms and the challenges associated with it. Experiences abroad can provide an opportunity for learning to deal with unfamiliar perspectives and developing an appropriate professional approach to cultural heterogeneity (Falkenhagen et al., 2019). Although, confrontation with the unknown does not per se lead to the intended learning outcome, such as developing a professional approach to heterogeneity in the classroom, but is dependent on professional support (e.g., guidance for self-reflection) (Leutwyler and Lottenbach, 2011; Leutwyler & Meierhans, 2011; Cushner & Chang, 2015). For teachers, this is particularly important as they face cultural heterogeneity in their everyday teaching. Additionally, their approach to cultural heterogeneity serves as a benchmark for students. Hence, there is a potential multiplier effect (Netz, 2012, 2015), which makes a professional approach to cultural heterogeneity all the more important.

Beyond the general effects of stays abroad on development of personality and language skills, especially the emergence of cultural awareness is crucial for teachers. Pre-service teachers can specifically learn something about dealing professionally with cultural diversity in classroom while taking a stay abroad during their studies. Hence, stays abroad of pre-service teachers can be seen as a profitable experience in the professionalization process of teachers.

So far, the effects of the international mobility of pre-service and in-service teachers on teacher specific outcomes, such as the professional development, have primarily been studied in the United States and, are only partially transferable to European countries (Jäger & Keßler, 2018). Kambutu and Nganga (2008) investigated the effect of experiences abroad on attitudes towards heterogeneity. They find a higher appreciation of foreigners among U.S. teachers who completed a study abroad program in Kenyan schools. Another study in the United States suggests that the study abroad experience (in this case, in Italy) leads to a greater appreciation of heterogeneity in classrooms (Pence & Macgillivray, 2008). The authors also indicate that relevant experiences can increase teachers' self-efficacy. Brindley et al. (2009) confirm these findings, noting a growing sense of professionalism and better understanding of cultural differences during a one-month international school placement. This is also shown by Lee (2011), who reports that teachers exhibit an increased openness to cultural diversity after a six-week experience in New Zealand. Mahon and Cushner (2002) confirm that experiences abroad are beneficial for teachers' performance in multicultural classrooms. This is consistent with the findings of Kahn et al. (2014), who suggest that

¹ Teachers' beliefs about cultural diversity refer to multicultural and egalitarian beliefs of teachers as well as their self-efficacy expectations. Self-efficacy expectations are understood as a specific form of beliefs (see e.g. Pajares, 1992).

teachers think their beliefs about diversity are most influenced by cross-cultural relationships. Overall, international research suggests that effects are to be expected on teacher professional development, but that the “available evidence regarding the impacts of exchange programs suggests rather potentialities than tangible effects” (Leutwyler, 2014, p. 106).

1.3. Teachers' beliefs about cultural diversity in classrooms

This paper examines the relation between stays abroad during studies and teachers' beliefs about cultural diversity in classrooms, as a crucial part of their cultural competence (Grimminger, 2011; Kahn et al., 2014). In the following, we will examine in more detail how beliefs about cultural diversity are conceptualized, how they develop, and the role of individual dispositions in this process.

Although teachers' beliefs have been investigated empirically since the 1950s, the concept still lacks coherence and clear definitions (Fives & Buehl, 2012). It is often used interchangeably with terms such as attitudes, implicit or subjective theories, or conceptions (Pajares, 1992). In our study, we define teachers' beliefs about cultural or migration-specific diversity in classrooms, also referred to as *cultural beliefs*, as “attitudes, views, ideologies, or models that teachers hold about students with a different cultural background from their own” (Hachfeld et al., 2011, p. 987). Self-efficacy expectations can be understood as a specific form of beliefs (see e.g., Pajares, 1992). They are defined as the teachers' beliefs in their own “capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran et al., 1998, p. 233). In the context of our study, self-efficacy is focused on teachers' beliefs about their own abilities to teach immigrant students.

In the research on teachers' cultural beliefs, different forms of favorable beliefs toward immigrant students can be distinguished, which have different effects on teaching-related outcomes (see e.g., Castro, 2010; Hachfeld et al., 2015). Current literature particularly emphasizes the positive impact of *multicultural education and multicultural beliefs* (see, e.g., Middleton, 2002; Alviar-Martin & Ho, 2011). Teachers express multicultural beliefs by acknowledging and valuing differences between groups with different cultural or migration backgrounds and considering these differences between students in their teaching practice (Hachfeld et al., 2015). Multicultural beliefs correlate positively with motivational orientations such as self-efficacy and enthusiasm for teaching, willingness to adapt teaching to culturally diverse students, and with migration-specific values such as a lower agreement with negative stereotypes (Hachfeld et al., 2015).

In comparison, *egalitarian (“colorblind”) beliefs* that emphasize the importance of treating all students equally, regardless of their background, are connected to a lower willingness to adapt teaching to culturally diverse students. Teachers with high values on egalitarian beliefs are more likely to encourage students to find similarities, instead of concentrating on cultural differences in their classes (Hachfeld et al., 2015).

Although it has not yet been clarified whether beliefs are stable or malleable (Fives & Buehl, 2012), it is often assumed that they are formed at an early age and are primarily based on own experiences in childhood (Pajares, 1992; Richardson, 1996). Teachers' beliefs are therefore considered to be relatively resistant to change (Pajares, 1992). Nevertheless, experiences acquired later in life, such as during teacher education, are recognized as potential influencing factors (Pajares, 1992; Richardson, 1996).

Various studies point out that, due to their individual dispositions, not all teachers are equally receptive to external influences which might affect their cultural beliefs (e.g., Causey et al., 2000; Garmon, 2004; Middleton, 2002; Unruh & McCord, 2010). Among

the factors that condition the development of greater cultural competence – and, thus, more positive beliefs – are a disposition to thoughtfulness and reflection, openness to diversity, and commitment to social justice (Causey et al., 2000; Garmon, 2004). Empirical research on the impact of the Big Five personality traits found significant correlations between various aspects of openness and agreeableness, on the one hand, and teachers' beliefs about diversity, on the other (Unruh & McCord, 2010). Furthermore, some studies have discovered relations between teachers' gender and immigrant background and their attitudes, beliefs, enthusiasm for teaching in multicultural classrooms, intercultural sensitivity, and prejudice toward students with an immigrant background (Edelmann, 2013; Hachfeld et al., 2012; Stanosheck Youngs & Youngs, 2001; Syring, Merk, Cramer, Topalak, & Bohl, 2019). In contrast, older studies from the US showed that pre-service and in-service teachers' beliefs about diversity were largely unrelated to demographic variables such as gender, ethnicity, and age group (Kahn et al., 2014; Pohan & Aguilar, 2001).

1.4. Stays abroad and teachers' beliefs about cultural diversity

It is widely known and has been empirically demonstrated that teachers' beliefs can be shaped by experience (see, e.g., Bandura, 1977; Pfitzner-Eden, 2016b; Tschannen-Moran & Hoy, 2001). According to Bandura (1997), self-efficacy beliefs arise and develop based on information about one's own abilities originating from four sources: direct experiences, vicarious experiences, verbal persuasion, and physiological/emotional responses. Direct experiences generally play the largest role in the development of self-efficacy beliefs, but vicarious experiences can be similarly effective (Bandura, 1997; Pfitzner-Eden, 2016a). As stays abroad allow direct, indirect, and emotional experiences as well as feedback (at least ideally), we generally consider them to be stimuli for changing pre-service teachers' beliefs from which they also benefit as in-service teachers. In particular, teaching experiences in a foreign context combined with critical reflection on these teaching practices may lead individuals to question their existing views about cultural diversity and, hence, change their beliefs. Referring back to the opportunity-use model (Helmke, 2009), which was transferred to the development of teachers' professional competence by Kunter et al. (2011), international experiences during university studies can constitute a learning activity that fosters teachers' professional development (including their professional beliefs).

1.5. The present study

The present study contributes to literature on the international mobility of students in teacher education. While so far studies have mainly focused on students in general, we look specifically at teachers and investigate how socio-demographic characteristics and personality factors are related to a stay abroad during the teacher education program. We also examine the extent to which personality and experiences abroad are related to teachers' beliefs about cultural diversity in classrooms. Previous studies were often based on small samples from the United States and refer to specific study abroad programs. We extend this literature by applying a conceptualization of cultural beliefs that explicitly refers to teaching rather than to cultural beliefs in general. Furthermore, we investigate the relation of these beliefs with experiences abroad during teacher education in Germany based on a representative sample (see Fig. 1).

RQ1. What are the individual characteristics of pre-service teachers who go abroad?

In the first step, we look at the individual characteristics of pre-

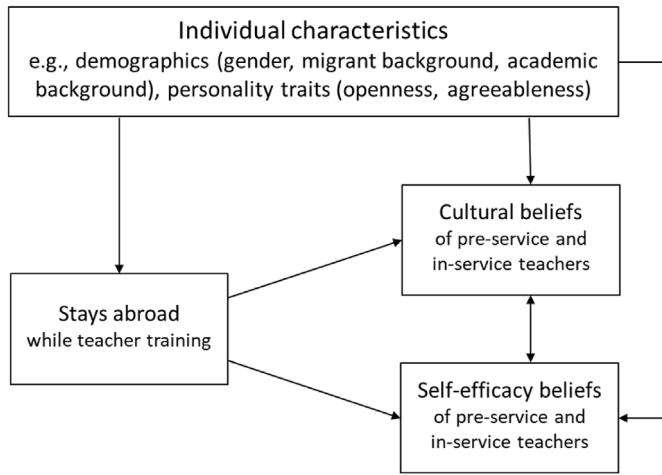


Fig. 1. Theoretical model of the present study.

service teachers who go abroad. We seek to determine the individual dispositions that influence the use of given opportunities.

RQ2. Is a stay abroad related to teachers' (self-efficacy) beliefs about cultural diversity in classrooms?

It can be hypothesized that stays abroad provide direct, indirect, and emotional experiences as well as feedback, which is relevant for the change of beliefs (Bandura, 1997; Pajares, 1992). In line with this, it can be argued, that stays abroad are linked to the development of professional competence, such as cultural beliefs. Thus, we investigate the widespread assumption that there is a relation between the experience of studying abroad and teachers' (self-efficacy) beliefs about cultural diversity in classrooms.

RQ3. Is the experience of studying abroad still related to beliefs when controlling for individual student characteristics (mediation hypothesis)?

Afterwards, we examine the robustness of the association between study abroad and beliefs by controlling for individual characteristics. We control for personality traits and sociodemographic characteristics to investigate whether the relation persists or whether the effect of experiences abroad is merely a matter of initial selectivity. With this step-wise approach, we acquire insights into the isolated effect of the experience abroad.

2. Method

2.1. Sample

This study used data from Starting Cohort 5 of the German National Educational Panel Study (NEPS), which has accompanied a state-wide random sample of first-year students at German higher education institutions throughout their studies and professional lives since the winter semester 2010/2011 (NEPS Network, 2022). The NEPS data are complemented by data from the German Teacher Education Panel Study (LAP). Since 2014, the LAP project has surveyed specific characteristics that are relevant to teacher education and the teaching profession in a subsample of teacher education students of NEPS Starting Cohort 5. The sample covers the entire spectrum of teacher education programs across Germany (e.g., elementary school teaching or vocational school teaching). Participants are surveyed approximately every six months, usually alternating between telephone and online surveys.

The analysis sample of the present study comprised $n = 1860$

pre-service and in-service teachers who participated in the online survey in wave 11 when outcome constructs were measured in the fall of 2016. At this point of time, the majority are still pre-service teachers as about 45% were enrolled in a teacher education program and 40% were in the preparatory service.² Only a small proportion (15%) were already working as in-service teachers. Table 1 contains a more detailed description of the sample.³

2.2. Instruments

Attitudes toward immigrant students and cultural diversity in the classroom were measured using a shortened version of the Teacher Cultural Belief Scale (Hachfeld et al., 2011). The scale contains two sub-dimensions with three items each for multicultural ($\alpha = 0.75$) and egalitarian beliefs ($\alpha = 0.80$). Both of these sub-dimensions of beliefs reflect favorable attitudes toward immigrant students but differ with regard to the assessment of how cultural or migration-related differences should be approached in the classroom (Hachfeld et al., 2011). Data were collected on self-efficacy beliefs about teaching culturally diverse classes using a shortened scale with three items ($\alpha = 0.91$) from the COACTIV-R study (Max Planck Institute for Human Development, 2010). To ensure international comparability, the instruments were formulated in terms of cultural diversity and immigrants, without a reference to specific immigrant groups or languages (Hachfeld et al., 2015). The measurements used for this study were collected in 2016, about six years after the students had started their studies. The measurement model that included all three constructs showed a good fit to the data (RMSEA = 0.057; CFI = 0.983; TLI = 0.975; SRMR = 0.026).

Stays abroad during studies were collected in every telephone interview. Participants could indicate whether the purpose of the stay abroad was for studying, an internship, a field trip, or another activity. Multiple answers were possible. For this paper, we defined a stay abroad as an experience abroad that was either a study program, an internship, or a field trip. Hence, we excluded other activities, as this answer category was rather vague. Openness to new experience and agreeableness are those personality traits that have been consistently found to be related to stays abroad (Bakalis & Joiner, 2004; Zimmermann & Neyer, 2013). Hence, we only include these two factors in the analysis that were assessed in a telephone interview in spring 2012 using the short version of the Big Five Inventory (see Rammstedt & John, 2005) with two items for openness and three items for agreeableness.

Gender was measured with a dichotomous variable, differentiating only between male and female.⁴ Immigrant background indicated whether the respondents themselves and/or their parents were born on or outside of German territory. A distinction was made between first-generation migrants who were born abroad and second-generation migrants who were born in Germany, but whose parents were born abroad. To determine academic background, we used the specification of whether at least one of the participant's parents held a degree from a higher education institution (university or university of applied science). All socio-demographic characteristics named in this paragraph were recorded in the first wave of the survey in 2010/2011. Finally, we used the

² In Germany, teacher education is divided into a teacher education program at university and a preparatory service at a school (for more information, see Dicke et al., 2015).

³ Indicated is the proportion of the total sample ($n = 1.860$).

⁴ The German language does not allow a distinction between sex and gender. Respondents were asked whether they were male or female and could interpret this either way or skip the question if they did not identify with the given categories.

Table 1
Description of the sample.

	Year	wave	n	M/%	SD	Min	Max
<i>Socio-demographics</i>							
Female	2010/11	1	1.432	77%	0.42	0	1
Age	2010/11	1	1.860	20.4	3.1	18	64
Migration background	2010/11	1	114	6%	0.24	0	1
Academic background	2010/11	1	817	44%	0.44	0	1
<i>Individual characteristics</i>							
Big Five: openness for new experience (index)	2012	3	1.676	3.67	0.86	1	5
Big Five: agreeableness (index)	2012	3	1.676	3.70	0.51	1.67	5
<i>Teacher specific characteristics</i>							
Pre-service teachers in teacher education program	2016	11	832	45%	0.50	0	1
Pre-service teachers in preparatory service	2016	11	750	40%	0.49	0	1
In-service teacher	2016	11	278	15%	0.36	0	1
Stay abroad overall ^a	2010/11 - 2016	1-11	366	20%	0.40	0	1
Study abroad	2010/11 - 2016	1-11	234	16%	0.33	0	1
Internship abroad	2010/11 - 2016	1-11	168	6%	0.29	0	1
Field trip abroad	2010/11 - 2016	1-11	34	2%	0.13	0	1
Multicultural beliefs (index)	2016	11	1.860	5.30	0.71	1	6
Egalitarian beliefs (index)	2016	11	1.860	5.16	0.74	1	6
Teacher self-efficacy (index)	2016	11	1.860	4.40	0.87	1	6

^a Respondents may have been abroad for several purposes. Therefore, the category “stays abroad” differs from the sum of the individual purposes (study, internship, field trip).

stage in German teacher education (first phase of teacher training (university education); second, practical phase of teacher training (preparatory phase); working as fully trained teacher) at the time of the measurement of our dependent variables as a control variable.

2.3. Data analysis

Structural equation models (SEM) were applied to investigate the predictive validity of stays abroad on multicultural, egalitarian, and teacher self-efficacy beliefs. A SEM allows latent characteristics of the constructs to be taken into account. Hence, the analyses were corrected for measurement errors. As an estimator, we used the maximum likelihood (ML) algorithm. To prove the fit of the model to the data, we considered RMSEA, CFI, TLI, and SRMR. For dichotomous outcomes, odds ratios (OR) were calculated; values above 1 indicate a higher chance and values below 1 indicate a lower chance for the outcome. Standardized coefficients were estimated for the latent outcomes. Missing values were handled by applying full information maximum likelihood (FIML). All analyses were conducted using Mplus 8.6 (Muthen & Muthen, 2014).

3. Results

3.1. Stays abroad of teachers

The majority of pre-service and in-service teachers in the sample did not report any stays abroad during their studies (80%). However, 365 participants (20%) had studied, completed an

internship, or attended a field trip in a foreign country. On average, pre-service teachers had stayed abroad for 13 months (SD = 8.5), with the shortest stay lasting two months and the longest lasting 56 months. Of those who were abroad, 64% reported the reason for their stay abroad to be for their studies, 46% for an internship, and 9% for a field trip. Participants who stayed abroad for study purposes reported an average duration of 9.8 months (SD = 10.1). The duration of the stay for internships (mean = 5.3; SD = 8.1) and field trips (mean = 1.3; SD = 4.9) abroad was shorter.

To investigate the relation between sociodemographic factors and personality traits with stays abroad in general and the specific purposes, we estimated four logistic regression models (see Table 3).

In general, the probability of having experienced a stay abroad during studies was significantly ($p < .05$) higher for teachers with language as a subject (OR = 3.23; 95% CI [2.36, 4.42]) and teachers who were more agreeable (OR = 1.71; 95% CI [1.32, 2.22]). Participants who were not studying anymore but were in preparatory service (OR = 0.42; 95% CI [0.32, 0.55]) or working as a teacher (OR = 0.28; 95% CI [0.18, 0.43]) at the time of measurement were less probable to have included a stay abroad in their studies. Surprisingly, we found no relation between sociodemographic characteristics such as gender (OR = 1.11; 95% CI [0.82, 1.51]), migration background (OR = 1.16; 95% CI [0.72, 1.87]), and academic background (OR = 1.25; 95% CI [0.98, 1.60]) with stay abroad. The findings were similar with regard to the probability of having studied abroad. Here, preparatory service (OR = 0.32; 95% CI [0.23, 0.45]) and working as a teacher (OR = 0.19; 95% CI [0.10, 0.34]) were

Table 3
Logistic regression on stays abroad.

Logistic regression (odds ratio)	Stay abroad: Overall			Stay abroad: Study			Stay abroad Internship			Stay abroad: Field trip		
	OR	S.E.	p	OR	S.E.	p	OR	S.E.	p	OR	S.E.	p
Female	1.11	0.18	.50	0.97	0.18	.88	1.40	0.32	.14	0.51	0.21	.09
Migration background	1.16	0.28	.55	0.96	0.29	.88	1.84	0.52	.03	0.88	0.66	.86
Academic background	1.25	0.16	.07	1.31	0.19	.07	1.07	0.18	.68	1.07	0.38	.85
Preparatory (vs. TE)	0.42	0.06	.00	0.32	0.06	.00	0.65	0.12	.02	0.61	0.24	.21
Teacher (vs. TE)	0.28	0.06	.00	0.19	0.06	.00	0.54	0.14	.02	0.30	0.22	.10
Language subject	3.23	0.52	.00	3.04	0.60	.00	3.09	0.73	.00	5.22	3.23	.00
Openness	1.03	0.08	.72	0.91	0.08	.29	1.16	0.13	.16	2.07	0.55	.00
Agreeable-ness	1.71	0.22	.00	1.87	0.30	.00	1.46	0.26	.03	1.12	0.42	.77

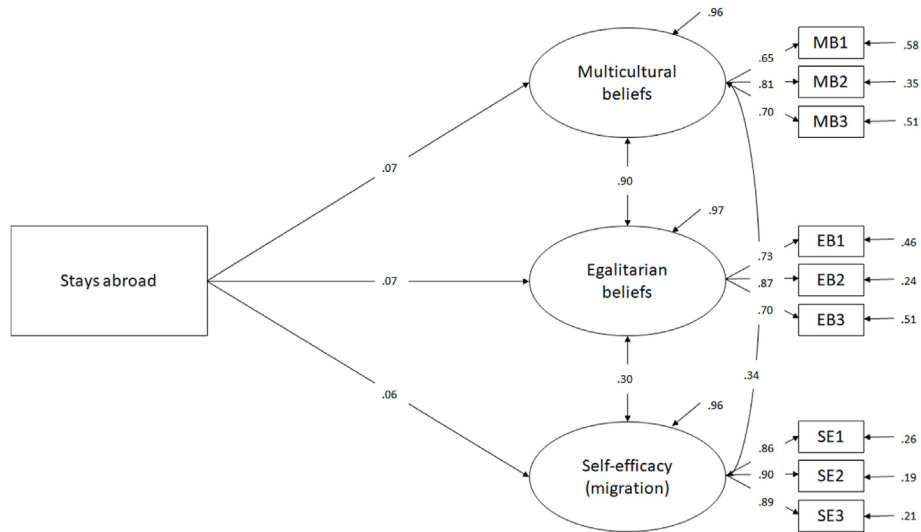


Fig. 2. Predicting multicultural and egalitarian beliefs and cultural TSE by stays abroad.

also negatively related to the experience of having studied at a foreign university. Studying a language as a subject (OR = 3.04; 95% CI [2.07, 4.46]) and having high values in agreeableness (OR = 1.87; 95% CI [1.37, 2.54]) were positively related to study abroad. Staying abroad for the purpose of an internship was positively related to migration background (OR = 1.84; 95% CI [1.05, 3.22]), language subject (OR = 3.09; 95% CI [1.95, 4.90]), and agreeableness (OR = 1.46; 95% CI [1.03, 2.07]). Participants in preparatory service (OR = 0.65; 95% CI [0.45, 0.93]) and in-service teachers (OR = 0.54; 95% CI [0.32, 0.91]) were less likely to have completed an internship abroad during their studies than student teachers at the time of measurement. The experience of a field trip abroad was positively related to being open to new experience (OR = 2.07; 95% CI [1.23, 3.48]) and positively related to studying a language (OR = 5.22; 95% CI [1.56, 17.52]).

3.2. Predicting multicultural and egalitarian beliefs and cultural TSE with stays abroad

Overall, pre-service and in-service teachers rated their multicultural (mean = 5.3, SD = 0.7, min = 1, max = 6) and egalitarian (mean = 5.2, SD = 0.7, min = 1, max = 6) beliefs as high. The high mean values suggest that there may be a ceiling effect. Teacher self-efficacy in dealing with students with a migration background in the classroom was also rated rather high (mean = 4.4, SD = 0.9, min = 1, max = 6).

To investigate the relation of experiences staying abroad with multicultural beliefs, egalitarian beliefs, and teacher self-efficacy toward students with a migration background, we estimated a structural equation model (see Fig. 2). Multicultural beliefs, egalitarian beliefs, and teacher self-efficacy were modeled as latent constructs with three items each. For the analysis, we controlled for gender, migration background, academic background, language subject, and stage of teacher education. Only significant ($p < .05$) standardized coefficients are displayed in the figure. According to the model fit indices, the data fit the model well (RMSEA = 0.044, CFI = 0.959, TLI = 0.968, SRMR = 0.022).

⁵In line with our assumptions, a stay abroad during studies was

⁵ Sensitivity analysis with the length of stay abroad as a predictor variable revealed no substantial different results.

positively related to multicultural beliefs ($\beta = 0.07$; S.E. = 0.03; $p = .01$), egalitarian beliefs ($\beta = 0.07$; S.E. = 0.03, $p = .01$), and teacher self-efficacy ($\beta = 0.06$; S.E. = 0.03; $p = .02$).

3.3. Predicting multicultural and egalitarian beliefs and cultural TSE with personality traits and stays abroad

In the next step, we included agreeableness and openness to new experience in the model (see Fig. 3). The model fit indices indicated that the data still fitted the model well (RMSEA = .041, CFI = 0.973, TLI = 0.957, SRMR = 0.025). For the analysis, we controlled for gender, migration background, academic background, language subject, and stage of teacher education. Significant ($p < .05$) standardized coefficients are displayed using unbroken lines; insignificant paths are shown with dashed lines.

Stays abroad were still positively related to multicultural beliefs ($\beta = 0.06$; S.E. = 0.03, $p = .02$), egalitarian beliefs ($\beta = 0.06$; S.E. = 0.03, $p = .02$), and teacher self-efficacy beliefs ($\beta = 0.05$; S.E. = 0.03; $p = .04$).

Openness to new experience was positively associated with both multicultural beliefs ($\beta = 0.09$; S.E. = 0.03; $p = .00$) and egalitarian beliefs ($\beta = 0.09$; S.E. = 0.03; $p = .00$). The standardized regression coefficient on teacher self-efficacy was not significant ($\beta = 0.03$; S.E. = 0.03, $p = .26$).

Agreeableness was positively associated with all outcome constructs: multicultural beliefs ($\beta = 0.11$; S.E. = 0.03, $p = .00$), egalitarian beliefs ($\beta = 0.09$; S.E. = 0.03, $p = .00$), and teacher self-efficacy beliefs ($\beta = 0.06$; S.E. = 0.03; $p = .01$).

4. Discussion

The literature emphasizes the benefits of stays abroad during university studies. Yet, little research has been conducted to date on how the stays abroad of pre-service teachers are related to their professional competences. Using a clear theoretical foundation and an explicit conceptualization of teachers' beliefs about cultural diversity in classrooms, we extend previous research by focusing especially on teachers. More specifically, we provide knowledge on the number of stays abroad of teacher education students and the predictors for these stays, and examine the relation of stays abroad with teaching beliefs.

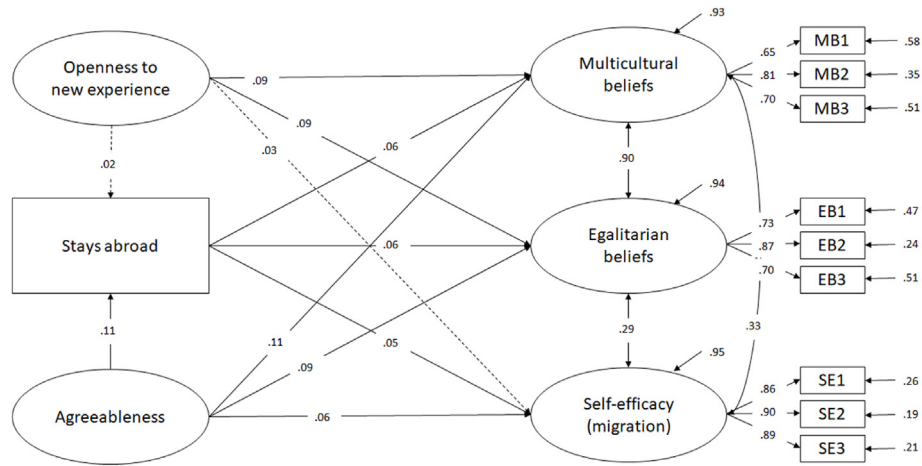


Fig. 3. Predicting multicultural and egalitarian beliefs and cultural TSE by personality traits and stays abroad. Sensitivity analysis with the length of stay abroad as a predictor variable revealed no substantial different results.

About 20% of the surveyed participants from all school types and teaching subjects in Germany completed a stay abroad as part of their teacher education program. Hence, international mobility is rather low among pre-service teachers in Germany, which is noteworthy because experiences abroad are assumed to be important for teaching performance. The finding is not unique for Germany and is in line with international findings on teacher mobility (Netz, 2015).

This raises the question of why teachers are less likely to go to other countries during their teacher education program. The reasons for this may be at the individual as well as the structural level, but have not yet been comprehensively researched. There are indications that teachers are strongly integrated locally, which, for example, becomes apparent in studies concerning voluntary work of pre-service teachers in Germany (e.g., Costa, 2022). It is possible that strong social embedding and links to local region (including proximity of the place of study to the hometown) prevent international mobility. As teachers' envisaged professional field is in the national education system, it is also possible that the benefits of experiences abroad are often not clear to pre-service teachers. The low mobility could also be due to a lack of opportunities and a lack of information at a structural level.

With our first research question (RQ1), we intended to find out whether specific individual characteristics are related to stays abroad during teacher education. To this end, we obtained a more precise picture of which pre-service teachers go abroad and which tend to stay at home. Our analyses revealed that sociodemographic characteristics were not as important in our sample as shown in other studies. This is surprising as previous studies have consistently found gender and social background to be related to the probability of undertaking a stay abroad (e.g., Netz et al., 2020). A possible explanation for this finding is the specific group of teacher education students as they differ in terms of personal characteristics, such as personality traits and interests, from other students (Osada & Schaeper, 2022; Roloff Henoeh et al., 2015). Additionally, as stated before, the lack of opportunities to go abroad on a structural level might be the reason for staying in the home country instead of personal predisposition. The finding that those studying a language are more likely to have experience abroad compared to other subjects points in this direction as their curricula often include a period abroad. Other studies have also shown that stays abroad depend on the studied majors, as stays abroad are more

common in the humanities (e.g., linguistics) than in other subjects (Netz, 2015). The analyses further indicate that those who were already in preparatory service or employed as a teacher at the time of measurement in 2016 were significantly less likely to have spent time abroad during their studies compared to those who were still studying. As stays abroad possibly prolong the study period, many students may be discouraged from going abroad in order to avoid delaying their graduation.

The second research question (RQ2) aimed at better understanding the relation between the experience of studying abroad, on the one hand, and cultural beliefs and self-efficacy expectations, on the other. Even though our analyses cannot reveal causal relation, the findings illustrate a statistically significant positive correlation between these factors. This connection is in line with existing findings on the effects of experience abroad from research in the United States (e.g., Brindley et al., 2009; Kambutu & Nganga, 2008; Mahon & Cushner, 2002; Pence & Macgillivray, 2008). As no causal relationships can be established based on the study, it is also possible that persons who have higher beliefs about multiculturalism are more eager to take stays abroad. Yet, from a theoretical perspective, it is plausible to assume that stays abroad influence teacher beliefs in a positive way. During their stays abroad, pre-service teachers gain experience living, studying, and/or teaching in foreign countries, which has the potential to stimulate an open mindset. These experiences are related to higher multicultural beliefs and self-efficacy beliefs regarding diversity. Furthermore, experiences abroad are connected to egalitarian beliefs. This is surprising as teachers holding egalitarian beliefs are less willing to adapt teaching to culturally diverse students, but are more likely to encourage students to find similarities (Hachfeld et al., 2015). The fact that the beliefs are all positively related to a stay abroad during studies emphasizes the need to acquire a better understanding of the complexities of teaching culturally diverse students (Castro, 2010).

To answer our last research question (RQ3), we tested whether the observed associations between stays abroad and (self-efficacy) beliefs persisted when controlling for various individual characteristics. The relationship between the stay abroad and beliefs remains even after controlling for various background variables, indicating that the relationship is robust. Similar to previous findings (e.g., Unruh & McCord, 2010), openness to new experience and agreeableness are related to multicultural and egalitarian beliefs.

Self-efficacy in teaching culturally diverse classrooms correlates with agreeableness, but not with openness to new experience. Other studies have also shown that agreeableness is a stronger predictor for teacher self-efficacy than other personality traits (Senler & Sungur-Vural, 2013). Moreover, our results illustrate that there is a positive correlation between experiences abroad and beliefs, also independent of individual characteristics. Teachers who have completed a stay abroad during studies show higher scores of beliefs about cultural diversity in classrooms. This suggests that stays abroad are not mediators of the relationship between personality traits and multicultural beliefs. Hence, we assume that stays abroad are not correlated with only multicultural beliefs, since those who undertake a stay abroad are a specific group in terms of their personality. Instead, stays abroad alone are related to beliefs about teaching in multicultural classrooms. As the design of our study does not allow a causal interpretation, this empirical-based assumption needs further investigation.

4.1. Limitations & future research

There are some limitations that result from the study design. During the measurement of our outcomes in the year 2016, 45% of the sample of the 2010 freshmen at German universities were still enrolled at university and therefore still had the possibility of going abroad during their studies.

Another limitation of this study is that we only measured whether the respondents had completed a stay abroad and the duration of the stay abroad. The data do not contain any further information on the type of experience gained abroad and the subsequent reflection process. Nevertheless, individual processing and reflection of experiences abroad has an impact on the effectiveness of these experiences in terms of developing cultural competence.

The main challenge in this study is that the study design does not allow a causal interpretation but gives insight into the relations between constructs. It is possible that persons who go abroad during their studies already had higher cultural beliefs at the beginning of their studies and that their beliefs did not increase any further due to their stay abroad. In the absence of a measurement time point at the beginning of our study, unfortunately, this question cannot be answered with the available data. For future research, it is important to take a closer look at these causal mechanisms within the framework of longitudinal designs.

4.2. Practical implications

Our study revealed a relationship between stays abroad and cultural beliefs. Therefore, it seems beneficial to foster the opportunities for pre-service teachers to go abroad during their studies. As a first step, there is a need to provide dedicated structural conditions for stays abroad and to create more opportunities for stays abroad during teacher education program. As pre-service teachers have a lower tendency to plan and acquire experience in foreign countries, programs should be established and expanded for this student group. This should also involve providing pre-service teachers with information about the target-group-specific added value of stays abroad. In addition, it should become easier for pre-service teachers to have their stays credited to their studies. This is challenging because the educational systems differ between countries, but absolutely necessary in order to increase the attractiveness of studying abroad. In addition, innovative digital formats could be included in future considerations, as they allow

experience to be gained in digitally organized international exchange formats (e.g., Rachbauer & Plank, 2021).

To sum up, on the one hand, the framework conditions must be improved to make stays abroad more attractive. This can be done, for example, by increasing the number of ERASMUS grants for student teachers and the amount of financial support provided. On the other hand, specific incentives can be created for pre-service teachers, such as the inclusion of periods abroad in the curricula or crediting of a compulsory internship abroad as the equivalent of two internships in the home country.

5. Conclusion

Our study shows correlations between stays abroad and cultural (self-efficacy) beliefs in a large sample of pre-service and in-service teachers in Germany, which is not limited to individual school types or school subjects. This is an important finding because beliefs are considered to be highly relevant for action. Consequently, studying beliefs is crucial in order to train teachers to be culturally competent in today's multicultural society. The results provide a first insight into the complex interplay between beliefs and experiences abroad. They also serve as a basis for further research on stays abroad and their specific effects on teachers' professional development.

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Ethics approval

Informed consent was obtained from all participants of age prior to study enrolment. All participants could withdraw from the study at any time.

CRediT author statement

Jana Costa: Conceptualization, Writing (Original Draft, Review & Editing)
 Sebastian Franz: Writing (Review & Editing), Data Curation, Formal Analysis
 Claudia Menge: Writing (Original Draft, Review & Editing)

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

The data supporting the findings of this study are available at www.neps-study.de.

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Appendix

Table 2
Correlation matrix for the central variables (indices) of the study.

	Big Five: openness for new experience	Big Five: agreeableness	Multicultural beliefs	Egalitarian beliefs	Teacher self-efficacy
Big Five: openness for new experience					
Big Five: agreeableness	.09*				
Multicultural beliefs	.12*	.13*			
Egalitarian beliefs	.11*	.11*	.72*		
Teacher self-efficacy	.05*	.08*	.30*	.29*	

*p < .05.

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