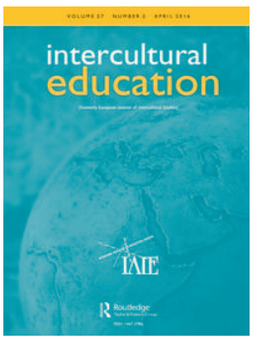

Intercultural Education

ISSN: 1467-5986 (Print) 1469-8439 (Online) Journal homepage: http://www.tandfonline.com/loi/ceji20

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To cite this article: Bruno Leutwyler & Claudia Meierhans (2016) Effects of international student exchange on pre-service teachers: a quasi-experimental study, Intercultural Education, 27:2, 117-136, DOI: 10.1080/14675986.2016.1144713

To link to this article: http://dx.doi.org/10.1080/14675986.2016.1144713

Intercultural Education, 2016
Vol. 27, No. 2, 117–136, http://dx.doi.org/10.1080/14675986.2016.1144713

Routledge
Taylor & Francis Group

Effects of international student exchange on pre-service teachers: a quasi-experimental study

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This contribution provides empirical answers to the question of how teaching-specific competencies develop during participation in an international student exchange programme. The quantitative analyses of this quasi-experimental study suggest that, generally speaking, no specific developments occur during an exchange experience. These findings contradict the majority of existing literature. Possible reasons for this divergence are discussed. The interpretation of the results suggests future research should focus on the key question of pre-conditions for productive exchange experiences.

Keywords: study abroad programme; teacher education; intercultural education; student exchange; international field experience

Introduction

Exchange programmes are becoming increasingly popular and the number of exchange students has been on the rise in the last decades (for the EU see European European Commission 2012; for the USA see Institute of International Education 2012). The same trend may be observed in teacher education (Mahon 2010). Thus, participation in exchange programmes is clearly becoming more and more popular in teacher education. Participation in exchange programmes seeks to meet two goals: from an institutional perspective, exchange programmes may provide an important contribution to the internationalisation of the university or college environment. From an individual perspective, exchange programmes also aim to contribute to the development of the individual participants. Accordingly, participation in exchange programmes is mostly promoted by pointing out the huge personal benefits that might be expected.

An overview of the literature on the individual effects of student exchange highlights the largest potential in terms of personal development, foreign-language proficiency and intercultural sensitivity (e.g. Bachner and Zeutschel 2009; Bracht et al. 2006; Paige and Vande Berg 2012). However, some empirical evidence suggests that not all students benefit to the same degree and that merely being in a foreign context does not automatically lead to any beneficial development (Anderson et al. 2006; Hammer 2005; Jackson 2009; Stronkhorst 2005; Sutton and Rubin 2010; Williams 2005). The effectiveness of exchange programmes has indeed been extensively researched in relation to their general individual effects. Job-related effects are, in contrast, mentioned less or dealt with in economic terms such as the duration of

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study, the first job search, or the level of the first salary after one's studies (Bracht et al. 2006; Jahr, Schomburg, and Teichler 2002; Messer and Wolter 2007; Teichler and Janson 2007). Effects on specific areas of study refer to general achievement gains (Sutton and Rubin 2010), the development of study-specific self-confidence regarding time-management during studies, or the mastery of independent seminar projects (Schweisfurth 2012).

In relation to teacher education, it may be argued that personal development is beneficial for the profession, too, and may lead to increased self-confidence, increased openness for foreign attitudes, more flexibility, broadened foreign-language skills, and a pronounced intercultural sensitivity. The importance of these competencies and attitudes is indisputable for teachers – they are not, however, teaching-specific competencies or attitudes.

During the last decade, a growing body of literature has started to address the question of whether participating in exchange programmes actually influences teaching-specific competencies and attitudes. However, the different contributions have been based on very different experiences: some of the papers operate with the term 'study abroad', others with 'exchange stay', 'student mobility programme' or 'international field experience'. The different terms in use do not correspond to clearly distinguishable programme designs and seem to be interchangeable – at least to some extent. Against this background, the following stock-taking of teaching-specific literature considers contributions with all these different terms and programme designs. Yet, the relevant commonalities are: (a) the common target groups being pre-service and in-service teachers; and (b) the common character of the programmes abroad as elements of an institutionalised study course and requiring school-based experiences with direct observations of classroom-teaching, discussions with local colleagues or autonomous teaching sequences.

Within this rather diverse empirical basis, the following pattern arises: the vast majority of the literature suggests a benefit regarding teaching-specific facets of intercultural competencies. Only very few contributions point to other aspects that might be furthered by participating in an exchange programme. Regarding the benefits of exchange stays for teaching-specific *facets of intercultural competencies*, the literature describes very different approaches and concepts, all of which relate to the fuzzy term of 'intercultural learning' and represent a broad, multifaceted and partly incoherent field of research. Therefore, a sharp picture of what might be seen as 'state of the art' regarding intercultural learning in exchange stays is difficult to obtain. However, on a general level, three different facets of intercultural competencies may be distinguished: a *first* facet that might be fostered in exchange stays seems to be the awareness of cultural imprints in schooling and teaching. Many studies refer to a more elaborated understanding of how one's own schooling and teaching practices are culturally imbued (Lee 2009, 2011; Phillion and Malewski 2011; Phillion et al. 2009; Sharma, Phillion, and Malewski 2011). In this sense, international experience might lead to a higher sensitivity towards the relevance of ethnicity, race, class or gender issues in teaching and could help the participants to become aware of what it means to be 'the White normative majority in relation to minority groups' (Phillion et al. 2009, 334). Generally, participants may gain 'the opportunity to use their experiences of difference to question professional practice in their own culture […], thereby acquiring […] critical cultural awareness' (Newman et al. 2004, 290). Or in the words of Flannery Quinn, Morton, and Brindley's study (2011, 39), the experience of being an 'outsider' would help them to reflect on

different school and teaching practices and to recognise, thereby, peculiarities of their own familiar school system (see also Brindley, Quinn, and Morton 2009; with reference to the concepts of 'consonance' and 'dissonance'; likewise Dantas 2007; Marx and Moss 2011; Marx and Pray 2011; Nero 2009; Roose 2001; Santoro and Major 2012; Walters, Garii, and Walters 2009; Wormnaes 2008).

A *second* facet that could be influenced in exchange stays seems to be the teachers' beliefs about teaching in culturally diverse contexts. A number of studies report an increased appreciation of cultural heterogeneity in school classes (Kambutu and Nganga 2008; Lee 2011; Pence and Macgillivray 2008) or a greater empathy for immigrant pupils (Colón-Muñiz, SooHoo, and Brignoni 2010; Cushner and Mahon 2002; Marx and Pray 2011; Sharma, Phillion, and Malewski 2011; Wiggins, Follo, and Eberly 2007; Willard-Holt 2001) in the sense that participants would understand better 'the need to attend to individual differences' (Mahon and Cushner 2002, 7). Chieffo and Griffiths (2004) point out in this context that teachers might show more patience with foreign-language-speaking students after a stay abroad.

A *third* facet that could be influenced in exchange stays seems to be the motivational orientations that allow for actively engaging in challenging intercultural situations. Some studies suggest that by participating in an exchange programme, participants may feel more prepared to work with children from different backgrounds (Rapoport 2008; Santamaría, Santamaría, and Fletcher 2009; Willard-Holt 2001), and that the students' self-efficacy beliefs for dealing with pupils with a migrant background might be enhanced (Leutwyler and Lottenbach 2011).

In addition to these three different facets of teaching-specific intercultural competencies, some studies suggest a benefit in terms of *teaching-specific self-efficacy beliefs* (Cushner and Mahon 2002; Garii 2009; Mahon and Cushner 2002; Pence and Macgillivray 2008; Roose 2001; Sahin 2008; Scoffham and Barnes 2009). It is argued that the huge amount of dissonances experienced – in emotional, cognitive and existential terms – could empower the participants to deal with challenging situations and could, therefore, further the 'comfort and ability to work with ambiguity and uncertainty' which could turn 'into increased self-confidence' (Garii 2009, 97). A few contributions report the potential to develop *teaching-specific flexibility*. Analogously to the general, non-teaching-specific development of independence and flexibility, it is argued that teaching or presenting in a foreign and unfamiliar context fosters the ability to deal with unexpected situations and, thereby, supports the participants in becoming more flexible in their teaching (Cushner and Mahon 2002; Garii 2009; Gilson and Martin 2010; Mahon and Cushner 2002; Scoffham and Barnes 2009). Finally, the study by Leutwyler and Lottenbach (2011) suggests a potential to increase one's own *motivation to teach*. They cite a participant: 'I was reminded what is amazing about 'being a teacher'. In this respect, my career choice was confirmed' (ibid., 77).

However, on the basis of this overview, it is hardly possible to assess what might legitimately be expected from participation in an exchange programme in teacher education. The different benefits point rather to different domains of potential. This is due to the fact that the available literature, in general, does not report on solid empirical evidence. *Firstly,* the vast majority of the reported findings emerge from data in the form of retrospective causal attribution: former participants retrospectively attribute the reported effects to their exchange experiences. Given the complex interdependence of pre-conditions and process experiences, this approach is problematic. To what extent, for example, was the ability and willingness to reflect on

cultural imprints of schooling developed before the exchange stay and to what extent did this ability develop during the exchange stay? Furthermore, to what extent was an already developed ability and willingness to reflect on cultural imprints a motivating factor to apply for a respective programme? Such questions can hardly be measured reliably by an *ex post facto* subjective evaluation. *Secondly,* the available literature lacks a systematic comparison of what could have been learnt at home. Of all the cited studies on teaching-specific effects, only one study compared learning experiences abroad with those at home. However, this study by Pray and Marx (2010) covered only the awareness of peculiarities of second-language acquisition, and only nine students with an exchange experience were involved. This empirical data does not allow for an assessment of whether a study abroad experience is more effective than simply offering courses with the respective content at the home institution. It might be hypothesised that the same learning experiences could have occurred during an analogous course in the home institution, for instance with an internship in culturally very diverse classrooms. *Thirdly*, self-reports are, in general, not perceived as valid assessments of student learning in other domains. Too often, the discrepancy between the subjectively experienced effectiveness, on the one hand, and the concrete, tangible development of specific competencies on the other is considered too large to be disregarded (Vande Berg, Paige, and Lou 2012, 21ff). *Fourthly*, Vande Berg et al. (ibid.) claim that ordinary students do not normally have enough knowledge and insight into the complex topics of intercultural learning and are, therefore, unable to draw valid conclusions about it. *Finally*, some reports might also be influenced by a social desirability bias.

In sum, the existing literature portrays a rich picture of teaching-specific facets of intercultural competencies that may be developed by an exchange experience: the awareness of cultural imprints in schooling and teaching may be raised; teachers' beliefs may be changed so that they develop more appreciation of cultural diversity in schools; and the motivational orientations that allow for actively engaging in challenging intercultural situations may be fostered. Some contributions suggest, furthermore, the existence of teaching-specific benefits in terms of an enhancement of teaching-specific self-efficacy beliefs, teaching-specific flexibility and one's own motivation to teach. However, different methodological constraints make it obvious that this summary is not based on very solid evidence.

Against this background, the present contribution assesses the teaching-specific effects of exchange experiences with another methodological approach and answers the following questions: How do teaching-specific competencies develop during participation in an international student exchange programme and how do these development patterns differ from those of students studying at their home university? In order to answer these questions, the contribution reports on a quasi-experimental study, which aimed at overcoming the various methodological constraints mentioned above. The concrete procedure of this study is reported in the next section.

Method

The empirical basis of this study derives from a data-set that was collected in the context of a longitudinally designed research project with a quasi-experimental design: comprehensive data of an experimental group (with students who completed an exchange programme) and a control group (with students who studied at the home university concurrently) were gathered twice. The survey was first

administered (at t_1) before the members of the experimental group left for their exchange stays (and at the same time for the control group). The second survey was conducted (at t_2) about 1 month after the exchange students' returned (and at the same time for the control group). In between, the exchange students spent on average 4–5 months abroad, while the students of the control group completed one semester at their home university.

At t_1, 260 pre-service student teachers at the Swiss Universities of Teacher Education Bern, Fribourg, St. Gallen, Thurgau, Valais, Central Switzerland and Zurich ($n = 139$ with a response rate of 68.8% in the control group; $n = 121$ with a response rate of 73.8% in the experimental group) were surveyed.[1] At t_2, 225 of the initially surveyed students chose to participate in the second survey. An overall response rate of 61.5% was reached ($n = 114$ with a response rate of 56.4% in the control group; $n = 111$ with a response rate of 67.7% in the experimental group). In this longitudinal sample, 35 students were assessed at t_1, but not t_2 (28 in the control group; 7 in the experimental group). To understand better the nature of this dropout, the included and excluded students of this sample were compared at t_1 with regard to gender, age, socio-economic status, nationality, native language, degree course and previous intercultural experiences. However, no systematic differences were detected between the students who chose to drop out and those who stayed.

From the 225 valid cases in the longitudinal sample, 85.2% (83.7% in the control group; 86.7% in the experimental group) were female students, 14.8% were male (16.3; 13.3%; a Pearson's chi-square test showed no significant difference between the two groups: $\chi^2 = 0.473$; df = 1; $p = 0.492$). This gender distribution corresponds to that of the respective population in Switzerland (Bundesamt für Statistik [Federal Statistical Office], 2011). The mean age of the students at t_1 was $m = 22.17$ (SD = 2.23; where the students of the control group were significantly older than those of the experimental group: $T = 2.369$; df = 233.76; $p = 0.019$). 11.4% were student teachers for preschool (11.8% in the control group; 11.0% in the experimental group); 44.1% were student teachers for primary school (43.7; 44.5%); 44.5% were student teachers for lower secondary school (44.4; 44.5%).

The data was collected with a questionnaire that included (a) measures of demographics (such as gender, age, socio-economic background and native language). Students' socio-economic backgrounds were assessed with the two indicators 'most recently completed educational training of mother/father' and 'number of books at home' (where the number of books at home served as a proxy variable for the cultural capital of a family).

Furthermore, the questionnaire included (b) measures of the competencies summarised above and attitudes. For each of the competencies and attitudes covered, a scale was adopted equally at t_1 and t_2. *Teaching-specific self-efficacy beliefs* were covered with a scale comprising 7 items adopted from the well-established scales of Schwarzer and Jerusalem (1999) and of Dellinger et al. (2008). A sample item of this scale is: 'I know that I am able to plan good lessons on a wide variety of topics' (Cronbachs' α at $t_1 = 0.75$; at $t_2 = 0.77$). The scale '*flexibility in teaching*' covers someone's belief of the extent to which he or she feels comfortable when facing unknown or unforeseen situations in schools. This scale was developed especially for this study and comprised four items with a Cronbachs' α at t_1 of 0.72 and at t_2 of 0.66. A sample item of this scale is: 'I feel awkward if I can't perform my teaching practice as I have planned' (reversed item). The scale '*motivation to teach*' covers the conviction that teaching is the proper career choice. This scale was also

developed especially for this study and comprised six items with a Cronbachs' α at t_1 of 0.68 and at t_2 of 0.70. A sample item of this scale is: 'Although teaching is a challenging profession, it is my choice of job'. A further scale covered the *self-efficacy beliefs for dealing with cultural diversity in schools*. This scale was derived from the well-established scale for teachers' self-efficacy beliefs by Schwarzer and Jerusalem (1999) and was extended with some specific new items. It consisted of six items with a Cronbachs' α at t_1 of 0.79 and at t_2 of 0.83. A sample item of this scale is: 'Even if I teach a class with a large cultural diversity, I am able to respond to the different individual needs'. The scale '*appreciation of cultural diversity in schools*' was developed referring very roughly to the Xenophobia-scale of Ziebertz and van der Tuin (2008) and comprised six items with a Cronbachs' α at t_1 of 0.80 and at t_2 of 0.76. A sample item of this scale is: 'The Swiss school system would work much better if there were no immigrant pupils' (reversed item). Finally, the scale '*reflection of normality*' covers the students' ability to recognise that different ways of schooling and teaching are expressions of different cultural practices and realities (Leutwyler and Petrović 2011; Leutwyler, Steinger, and Sieber 2009). The respective scale consisted of two items with a Cronbachs' α at t_1 of 0.79 and at t_2 of 0.77. A sample item of this scale is: 'The way I deal with pupils is strongly influenced by my cultural background'. A full documentation of all these scales is provided in the Appendix 1.

These measures were analysed with multivariate statistics using SPSS 20.0. For a comparison of the experimental group with the control group, the arithmetic means of each group were compared at t_1 and t_2 by applying *t*-tests for independent samples. The development between t_1 and t_2 within the control group and within the experimental group was calculated with dependent *t*-tests for paired samples. Finally, using Wilks-Lambda as a multivariate analysis of variance, possible interaction effects between 'time' and 'group' were investigated. The results of these analyses are reported in the following section.

Results

Given the results of the *t*-tests for independent samples, no significant difference could be detected in the longitudinal sample between t_1 and t_2 regarding the teaching-specific self-efficacy beliefs and the motivation to teach (see Table 1): the teaching-specific self-efficacy beliefs and the motivation to teach remained stable at a relatively high level both in the experimental and in the control group. Regarding the teaching-specific self-efficacy beliefs, no significant differences between the experimental and the control group could be detected at either t_1 ($p = 0.812$) or t_2 ($p = 0.555$); and there was no significant interaction effect ($p = 0.808$).

Regarding the scale 'motivation to teach', at t_1 the control group scored significantly higher than the experimental group ($p = 0.006$). Even though both groups did not show any significant development between t_1 and t_2, the difference between both groups loses its significance at t_2 ($p = 0.206$). Yet, no significant interaction effect could be detected ($p = 0.442$).

Regarding the flexibility in teaching, both groups showed a significantly different development between t_1 and t_2 ($p = 0.029$ for the interaction effect). At t_1 the control group reported a significantly lower flexibility in teaching than the experimental group did ($p = 0.010$). Whereas the flexibility in teaching increased significantly

Table 1. Teaching-specific competencies and attitudes (part I).

	t_1			t_2			t-test		
	N	M^a	SD[b]	N	M^a	SD[b]	T	df	p
Teaching-specific self-efficacy beliefs									
Experimental group (eg)	113	3.49	0.35	113	3.52	0.35	−1.180	112	0.241
Control group (cg)	109	3.48	0.33	109	3.51	0.36	−0.899	108	0.371
Difference between eg and cg (t-test)		$T = 0.238$ df = 527 $p = 0.812$			$T = 0.592$ df = 220 $p = 0.555$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 0.059$ df = 220 $p = 0.808$						
Motivation to teach									
Experimental group (eg)	110	3.50	0.42	110	3.55	0.40	−1.397	109	0.165
Control group (cg)	110	3.62	0.36	110	3.63	0.38	−0.345	109	0.731
Difference between eg and cg (t-test)		$T = -2.770$ df = 246 $p = 0.006$			$T = -1.270$ df = 215 $p = 0.206$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 0.592$ df = 218 $p = 0.442$						
Flexibility in teaching									
Experimental group (eg)	113	3.11	0.52	113	3.06	0.52	1.099	112	0.274
Control group (cg)	109	2.94	0.40	109	3.02	0.44	−2.122	108	0.036
Difference between eg and cg (t-test)		$T = 2.612$ df = 242 $p = 0.010$			$T = 0.390$ df = 213 $p = 0.697$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 4.811$ df = 220 $p = 0.029$						

Notes: Rating scales from 1 = 'does not apply at all' to 4 = 'applies completely'.
[a]Mean.
[b]Standard deviation.

between t_1 and t_2 in the control group ($p = 0.036$), it decreased slightly in the experimental group ($p = 0.274$).

Also, when focussing on teaching-specific competencies and attitudes regarding dealing with cultural diversity, the pattern of the results does not change. Neither regarding the self-efficacy beliefs for dealing with cultural diversity in schools nor regarding the reflection on normality, could significant developments be detected in either the control group or in the experimental group. In both groups, the self-efficacy beliefs for dealing with cultural diversity in schools as well as the reflection of normality remained stable at a relatively high level (see Table 2). The two groups did not differ significantly at either t_1 or t_2. Only regarding the appreciation of cultural diversity, could a significant development from t_1 to t_2 be detected in the control group ($p = 0.028$), but not in the experimental group ($p = 0.793$). Nevertheless, the appreciation of cultural diversity did not differ between the two groups at either t_1 or t_2. Again, the results did not show any significant interaction effect ($p = 0.089$).

The results of these longitudinal analyses suggest that participating in an exchange programme does not show, generally, any effect on the discussed competencies and attitudes. To a large extent, the same finding arises when another methodological approach is adopted. In order to assess the effects of participating in an exchange programme on student teachers' competencies and attitudes, multiple regression analyses (with pairwise deletion of missing data) were used (see Table 3). The values in each of the individual variables at t_2 (after returning from an exchange stay for the experimental group or after an analogous time at the home institution for the control group) served as dependent variables. The independent variables were grouped in three blocks, which were entered blockwise into the model. Block 1 measured the starting conditions: the value of the variable at t_1 (first measurement). Block 2 measured the personal conditions (gender, socio-economic status and native language) and block 3 represented the participation in an exchange programme. With this procedure, it is possible to assess the variance explained by participation in an exchange programme, taking into account the initial level of competencies and attitudes, as well as the personal conditions.

The results of the regression analyses show that the variance in the competencies and attitudes measured at t_2 is explained largely by the initial level of the respective competencies and attitudes: between 30.6% (for the reflection of normality) and 48.1% (for the appreciation of cultural diversity). Students' personal conditions (block 2) played a nearly negligible role in explaining additional variance at t_2. In no case does the variance explained by gender, socio-economic status or native language exceed a value of 0.7% (see Table 3). Only in the case of teaching-specific self-efficacy beliefs did socio-economic status have significant explanatory power ($\beta = 0.033$). Whether student teachers participated in an exchange programme or not (block 3) explains at most 1.0% of the variance in the discussed competencies and attitudes at t_2. For the appreciation of cultural diversity, the dummy-variable 'participation in an exchange programme' has significant explanatory power ($\beta = 0.114$); for other competencies and attitudes, participation in an exchange programme has no significant explanatory power.

The results of these regression analyses suggest that participating in an exchange programme exerted some influence on the appreciation of cultural diversity, but not on other discussed competencies and attitudes. However, these results do not mean that no productive developments occurred in an exchange stay. Such productive developments did occur in some cases, as shown in the following analyses.

Table 2. Teaching-specific competencies and attitudes (part II).

	t_1			t_2			*t*-test		
	N	M^a	SD[b]	*N*	M^a	SD[b]	*T*	df	*p*
Self-efficacy beliefs for dealing with cultural diversity in schools									
Experimental group (eg)	112	3.30	0.44	112	3.33	0.48	−0.689	111	0.492
Control group (cg)	107	3.29	0.40	107	3.30	0.42	−0.115	106	0.909
Difference between eg and cg (*t*-test)		$T = 0.923$ df = 256 $p = 0.357$			$T = 0.643$ df = 218 $p = 0.521$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 0.177$ df = 217 $p = 0.674$						
Reflection of normality									
Experimental group (eg)	111	3.04	0.74	111	3.10	0.71	−1.088	110	0.279
Control group (cg)	108	2.90	0.72	108	3.03	0.70	−1.746	107	0.084
Difference between eg and cg (*t*-test)		$T = 1.458$ df = 256 $p = 0.146$			$T = 1.001$ df = 218 $p = 0.318$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 0.606$ df = 217 $p = 0.437$						
Appreciation of cultural diversity									
Experimental group (eg)	109	3.24	0.50	109	3.25	0.49	0.264	108	0.793
Control group (cg)	106	3.18	0.51	106	3.10	0.49	−2.228	105	0.028
Difference between eg and cg (*t*-test)		$T = -1.264$ df = 258 $p = 0.207$			$T = -1.399$ df = 213 $p = 0.163$				
Interaction effect 'time' × 'group' (Wilks–Lambda)			$F = 2.918$ df = 213 $p = 0.089$						

Notes: Rating scales from 1 = 'does not apply at all' to 4 = 'applies completely'.
[a]Mean.
[b]Standard deviation.

Table 3. Regression analyses: Variance explained by participation in an exchange programme.

	Dependent variables					
	Teaching-specific self-efficacy beliefs t_2 β^a	Flexibility in teaching t_2 β^a	Motivation to teach t_2 β^a	Self-efficacy beliefs for dealing with cultural diversity t_2 β^a	Appreciation of cultural diversity t_2 β^a	Reflection of normality t_2 β^a
Block 1: starting conditions						
Value at time of first measurement t_1	0.636***	0.623***	0.679***	0.664***	0.659***	0.533***
R_a^2 block 1	38.7%	34.5%	45.8%	38.2%	48.1%	30.6%
Block 2: personal conditions						
Gender	−0.041	−0.057	0.001	−0.025	0.112	−0.111
Socio-economic status	0.033*	0.024	−0.009	−0.007	0.017	0.042
Native language	0.040	−0.021	−0.020	0.095	−0.048	−0.017
Change in R_a^2 compared to block 1[b]	*+0.7%*	*−0.6%*	*−0.6%*	*−0.2%*	*+0.3%*	*−0.1%*
Block 3: participation in an exchange programme						
Participation in an exchange programme	0.008	0.077	−0.002	−0.021	0.114*	0.028
Change in R_a^2 compared to block 2[b]	*−0.2%*	*+0.3%*	*−0.3%*	*−0.2%*	*+1.0%*	*−0.3%*
R_a^2 for all 3 blocks	*39.2%*	*34.2%*	*44.9%*	*37.8%*	*49.4%*	*30.2%*
F-value for over-all model (*p*-value)	29.453 ($p < 0.000$)	23.990 ($p < 0.000$)	36.686 ($p < 0.000$)	27.494 ($p < 0.000$)	42.745 ($p < 0.000$)	19.853 ($p < 0.000$)

Notes: Cells in grey contain significant regression coefficients.
Method: enter, blockwise.
Minimal tolerance = 0.871.
[a]Standardised regression coefficient.
[b]A negative change in R_a^2 means no increase in explained variance; the negative value is due to increased degrees of freedom when more variables are added.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 4. Analyses of different development patterns.

	t_1		t_2		t-test[a]			N		
	M[c]	SD[d]	M[c]	SD[d]	T	df	p	EG[e]	CG[f]	χ^2 [b]
Teaching-specific self-efficacy beliefs										
Winners	3.34	0.30	3.63	0.29	−16.365	93	0.000	50 (44.2%)	44 (40.4%)	$\chi^2 = 0.918$
Losers	3.60	0.27	3.32	0.29	14.437	76	0.000	40 (35.4%)	37 (33.9%)	df = 2
Stables	3.59	0.38	3.59	0.38	−1.466	50	0.149	23 (20.4%)	28 (25.7%)	$p = 0.632$
Flexibility in teaching										
Winners	2.95	0.52	3.04	0.47	−1.798	83	0.076	45 (41.3%)	39 (35.5%)	$\chi^2 = 0.900$
Losers	3.10	0.50	2.98	0.63	1.450	31	0.157	16 (14.7%)	16 (14.5%)	df = 2
Stables	3.06	0.40	3.07	0.44	−0.294	101	0.769	48 (44.0%)	55 (50.0%)	$p = 0.638$
Motivation to teach										
Winners	3.39	0.37	3.72	0.31	−15.787	84	0.000	46 (48.9%)	39 (42.9%)	$\chi^2 = 0.695$
Losers	3.66	0.43	3.20	0.43	12.780	34	0.000	17 (18.1%)	18 (19.8%)	df = 2
Stables	3.67	0.35	3.67	0.34	−1.090	64	0.280	31 (33.0%)	34 (37.4%)	$p = 0.706$
Self-efficacy beliefs for dealing with cultural diversity in schools										
Winners	3.14	0.41	3.50	0.39	−14.142	87	0.000	43 (38.4%)	45 (42.1%)	$\chi^2 = 0.306$
Losers	3.38	0.37	2.99	0.37	13.624	73	0.000	39 (34.8%)	35 (32.7%)	df = 2
Stables	3.43	0.42	3.43	0.42	0.187	56	0.853	30 (26.8%)	27 (25.2%)	$p = 0.858$
Appreciation of cultural diversity										
Winners	1.60	0.45	2.00	0.54	−13.830	84	0.000	36 (33.0%)	49 (46.7%)	$\chi^2 = 4.465$
Losers	2.03	0.47	1.67	0.47	13.881	74	0.000	44 (40.4%)	31 (29.5%)	df = 2
Stables	1.77	0.50	1.77	0.51	0.707	53	0.482	29 (26.6%)	25 (23.8%)	$p = 0.107$
Reflection of normality										
Winners	2.49	0.69	3.34	0.55	−16.275	69	0.000	33 (29.7%)	37 (34.3%)	$\chi^2 = 1.730$
Losers	3.22	0.60	2.44	0.60	14.510	49	0.000	23 (20.7%)	27 (25.0%)	df = 2
Stables	3.19	0.66	3.19	0.60	_ [g]	_ [g]	_ [g]	55 (49.5%)	44 (40.7%)	$p = 0.421$

[a]t-test for mean differences between t_1 and t_2 in each group.
[b]Pearson's chi-square-test for sample distribution between experimental and control group.
[c]Mean.
[d]Standard deviation.
[e]Experimental group.
[f]Control group.
[g]No t-values computable because standard error of the mean difference = 0.

In order to identify development patterns, the effective differences between the individuals' values at t_1 and at t_2 were calculated. For each variable these effective differences were divided into three groups: a first group with clearly increased values between t_1 and at t_2 (called 'winners'); a second group with more or less unchanged values between t_1 and at t_2 (called 'stables'); and a third group with clearly decreased values between t_1 and at t_2 (called 'losers'). Table 4 provides an overview of how these three groups are distributed between exchange students and regular students.

The overview in Table 4 shows that productive developments during exchange stays did occur in many cases:

- 48.9% of the exchange students were so-called 'winners' with regard to their motivation to teach. They did develop greater motivation to teach during their exchange stay.
- 44.2% of the exchange students developed more productive teaching-specific self-efficacy beliefs during their exchange stay.
- 41.3% of the exchange students are so called 'winners' with regard to the flexibility in their teaching;
- 38.4% with regard to self-efficacy beliefs for dealing with cultural diversity in schools.

However, comparable shares of regular students (in the control group) were also 'winners' with respect to the discussed competencies and attitudes: the distribution of 'winners', 'losers' and 'stables' between the experimental group and the control group does not significantly differ in any of the tested variables (see Pearson's chi-square values in Table 4).

These results show that productive developments during exchange stays did occur in many cases, but, generally speaking, no more often than they did 'at home', with students studying regularly in their home institution. These findings contradict expectations, at least in part. Therefore, the next chapter places the present evidence within the framework of the existing literature and discusses possible reasons for the divergence we have identified.

Discussion and conclusion

This contribution aimed to provide empirical answers to the question of how teaching-specific competencies develop during the participation in an international student exchange programme and how these development patterns differ from those of students studying at their home university. The empirical data suggests that neither the teaching-specific self-efficacy beliefs nor the motivation to teach, the self-efficacy beliefs for dealing with cultural diversity in schools or the reflection of normality develop significantly during an exchange stay. Significant developments were observed with regard to flexibility in teaching and with regard to appreciation of cultural diversity – but only in the control group, and not in the group of exchange students. This result that, generally speaking, no specific developments occur during an exchange experience is reflected in the results of the regression analyses. They suggest that, with the exception of appreciation of cultural diversity in schools, participation in an exchange programme has no significant explanatory power for the development of the issues in question. These findings contradict the majority of

existing literature, which seems to praise the relevance of exchange experiences for the professional development of teachers.

A key reason for this contradiction is the methodological approach of the study presented, which adopted a different design from most of the studies reported in the literature. The methodological approach of this contribution aimed to overcome various methodology-based constraints. Specifically, it eliminated the hindsight bias by adding baseline data. Additionally, it compared development patterns of exchange students with those studying at home. It also minimised the constraints of self-reports by avoiding the assessment of subjectively experienced effectiveness. Furthermore, it used scales to allow for a valid assessment of the constructs in question. However, the price that this study had to pay for overcoming these various constraints was the limitations inherent in adopting a quantitative approach. Frequently, quantitative approaches are criticised for being less sensitive to changes in complex concurrent domains, such as cognitive, affective, emotional, motivational and volitional aspects. In fact, the three adopted indicators related to teaching-specific facets of intercultural competencies – self-efficacy beliefs for dealing with cultural diversity in schools, appreciation of cultural diversity in schools and reflection of normality – in no way represent a comprehensive measure of 'intercultural learning'. However, given the relevant literature in this regard, it is difficult to imagine how teaching-specific 'intercultural learning' could occur if none of these adopted indicators were seen to develop. So, while it may be true that the methodological approach of this contribution may not provide a comprehensive picture of 'intercultural learning' during exchange experiences, it does, in fact, provide evidence that a one-sided glorification of the value of exchange experiences must be read with caution.

That productive developments do occur during exchange stays is also a key finding of this contribution (see Table 4). This result indicates that exchange programmes do contain a *potential* for professional development. While not all students can benefit from exchange programmes, a considerable share of students do (professional development also occurs for those studying at their home institution). This result shows that learning during exchange experiences does not occur automatically. The mere exposure to a foreign context does not lead spontaneously to productive developments. The fact that a considerable share of exchange students did not benefit substantially from their experiences in exchange programmes might be a sign that some of the programmes covered are not sufficiently designed to support the respective learning processes. As a matter of fact, some recent studies suggest that, in general, exchange programmes are procedurally well planned, but do not include systematic learning opportunities with regard to specific learning goals (e.g. Trede, Bowles, and Bridges 2013). Therefore, Svensson and Wihlborg (2010) conclude that 'the specific content concerning other cultures that was actually included in the education seemed to be accidental, rather than the result of a conscious effort to include this type of material. […] The internationalisation of higher education is to a large extent accidental, rather than clearly intended when it comes to educational content' (602f).

With this interpretation of the result (that a considerable share of exchange students did not benefit substantially from their experiences), the focus is turned to the key question of delineating the pre-conditions for productive exchange experiences. It also raises the question of the role of *individual* pre-conditions, such as openness to new experiences, interest in the unfamiliar or ambiguity tolerance. A clear list of

necessary pre-conditions is not easily definable because too many factors in different configurations can influence productive learning in cross-cultural encounters. Therefore, current research approaches focus instead on inhibiting or obstructive factors, which hinder productive developments (Pettigrew 2004; Pettigrew et al. 2011). In this regard, it is not surprising that questions about the selection of the participants for exchange programmes are hardly discussed in teacher education. On the other hand, questions are raised regarding the *design of the programme* and how different designs can facilitate productive developments in exchange stays. To gain a more insightful understanding of the various preconditions for a beneficial exchange experience, questions should be addressed about the appropriate preparations, individual coaching, and teaching-specific debriefing after their return as well as the corresponding appreciation of these experiences.

This question of the pre-conditions for productive exchange experiences is, without any doubt, an important desideratum for further research. The presented contribution is, in this regard, limited because the analyses compared only an experimental group (which participated in an exchange stay) with a control group (which studied for the same duration of time at the home institution). The 'treatment' in question (the exchange experience itself) entered the regression model only as a dummy variable: yes or no. More relevant issues such as 'Was it a good programme or not?' or 'Which elements proved to be beneficial and supportive for the development?' were not considered with this approach. In this way, the present contribution sheds light on the effectiveness in only very general terms. It does not contest the benefits of well administrated and thoughtfully guided programmes but does emphasise the need to focus strongly on the programme design, especially on learning opportunities with regard to specific development goals. In order to conceptualise effective programmes, it is necessary to understand how learning processes abroad occur and how they differ from the learning processes at home – an ambitious task to be addressed in further contributions.

Disclosure statement

No potential conflict of interest was reported by the authors.

Note

1. This figure of 121 participating exchange students constitutes 58.1% of all exchange students of Universities of Teacher Education in Switzerland (cohep Fachgruppe Mobilität 2010).

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Appendix 1. Documentation of the reported scales (part 1).

Scales	t_1				t_2			
	M[a]	SD[b]	N	r_{it}[c]	M[a]	SD[b]	N	r_{it}[c]
Teaching-specific self-efficacy beliefs								
I trust myself to create a classroom climate full of confidence and respect[d]	3.73	0.44	248	0.40	3.66	0.51	215	0.48
I trust myself to give appropriate feedback to the tasks of the pupils[d]	3.52	0.55	248	0.47	3.60	0.54	215	0.53
I know that I am able to plan good lessons on a wide variety of topics[f]	3.62	0.53	248	0.49	3.69	0.47	215	0.52
In practical training, I trust myself to teach appropriately in different situations[f]	3.33	0.53	248	0.50	3.43	0.56	215	0.58
Even if my classes are interrupted, I am sure that I keep calm[e]	3.38	0.56	248	0.43	3.44	0.56	215	0.42
Even if I don't feel so well, I can still answer to the pupils' needs[e]	3.32	0.58	248	0.49	3.39	0.52	215	0.40
I trust myself to develop new ideas in order to explain difficult topics in an understandable way[f]	3.41	0.56	248	0.48	3.43	0.57	215	0.52
	Cronbachs' $\alpha = 0.75$				Cronbachs' $\alpha = 0.77$			
Motivation to teach								
I am looking forward to teaching my own class[f]	3.81	0.48	243	0.33	3.75	0.51	212	0.52
Although teaching is a challenging profession, it is my choice of job[f]	3.72	0.49	243	0.43	3.67	0.59	212	0.45
I would like to become a teacher because I realise that teaching is important for children, parents and the society[f]	3.49	0.65	243	0.49	3.50	0.66	212	0.55
I appreciate the professional autonomy of teachers and I like to take decisions while teaching[f]	3.47	0.61	243	0.49	3.55	0.58	212	0.41
While teaching, I sometimes have the impression that I achieve something that is not possible in other professions[f]	3.32	0.77	243	0.40	3.45	0.75	212	0.39
The teaching profession allows to take on responsibility for the society[f]	3.50	0.61	243	0.38	3.52	0.63	212	0.31
	Cronbachs' $\alpha = 0.68$				Cronbachs' $\alpha = 0.70$			
Flexibility in teaching								
I feel awkward if I can't perform my teaching practice as planned (reversed)[f]	2.61	0.78	251	0.42	2.62	0.82	217	0.36
It irritates me if my class does not participate as I have imagined (reversed)[f]	3.02	0.61	251	0.60	3.03	0.68	217	0.52
I can adapt easily if my teaching does not follow my plans[f]	3.37	0.59	251	0.57	3.40	0.59	217	0.54
In practical training, I simply choose another procedure if the sequence does not evolve as planned[f]	3.10	0.57	251	0.51	3.14	0.63	217	0.39
	Cronbachs' $\alpha = 0.72$				Cronbachs' $\alpha = 0.66$			

Notes: Rating scales from 1 = 'does not apply at all' to 4 = 'applies completely'.
All items are originally in German. This English version is a rough translation.
[a]Mean, [b]Standard deviation, [c]Item-total correlation.
[d]Adopted from Dellinger et al. (2008), [e]Adopted from Schwarzer and Jerusalem (1999), [f]In-house development.

Documentation of the reported scales (part 2).

Scales	t_1				t_2			
	M[a]	SD[b]	N	r_{it}[c]	M[a]	SD[b]	N	r_{it}[c]
Self-efficacy beliefs for dealing with cultural diversity in schools								
I trust myself to cope with school problems of immigrant pupils[f]	3.28	0.52	239	0.54	3.26	0.58	208	0.65
I am sure that I can make good contact with immigrant pupils if I try[e]	3.63	0.50	239	0.44	3.64	0.50	208	0.39
Even if I teach a class with a large cultural diversity, I am able to respond to the different individual needs[f]	3.16	0.55	239	0.61	3.24	0.58	208	0.67
I think that I am able to recognise the learning requirements of the individual pupils even in classes with a large cultural diversity[f]	3.27	0.55	239	0.57	3.24	0.54	208	0.67
I am ready to work in a multicultural environment[f]	3.33	0.67	239	0.60	3.34	0.67	208	0.71
I am well prepared to teach a class with a large cultural diversity[f]	3.09	0.72	239	0.57	3.14	0.78	208	0.59
	Cronbachs' $\alpha = 0.79$				Cronbachs' $\alpha = 0.83$			
Appreciation of cultural diversity in schools								
Pupils that do not follow the norms of our schools should be excluded from regular classes (reversed)[d]	2.12	0.87	230	0.50	2.17	0.86	185	0.45
In a classroom, immigrant pupils claim too much attention of the teacher (reversed)[d]	2.01	0.73	230	0.60	2.06	0.69	185	0.51
There is too much special support for immigrant pupils (reversed)[d]	1.70	0.74	230	0.41	1.61	0.75	185	0.45
The Swiss school system would work much better if there were no immigrant pupils (reversed)[d]	1.91	0.79	230	0.67	1.86	0.77	185	0.62
Foreign and Swiss pupils should be taught in different classes (reversed)[d]	1.23	0.54	230	0.52	1.22	0.53	185	0.36
There are too many immigrant pupils in Swiss schools (reversed)[d]	1.88	0.81	230	0.71	1.84	0.76	185	0.61
	Cronbachs' $\alpha = 0.80$				Cronbachs' $\alpha = 0.76$			
Reflection of normality								
The way I deal with pupils is strongly influenced by my cultural background[g]	2.97	0.82	253	0.66	3.10	0.74	213	0.63
The way how I conceive my role as a teacher is associated with my cultural imprint[f]	2.98	0.80	253	0.66	3.06	0.77	213	0.63
	Cronbachs' $\alpha = 0.79$				Cronbachs' $\alpha = 0.77$			

Notes: Rating scales from 1 = 'does not apply at all' to 4 = 'applies completely'.
All items are originally in German. This English version is a rough translation.
[a]Mean, [b]Standard deviation, [c]Item-total correlation.
[d]Inspired by Ziebertz and van der Tuin (2008), [e]Adopted from Schwarzer and Jerusalem (1999), [f]In-house development, [g]Inspired by Schneider (2005).